Whistling Ridge Energy Project

Final Environmental Impact Statement

Appendix H

August 2011

Washington State Environmental Policy Act Lead Agency:
State of Washington, Energy Facility Site Evaluation Council

Appendix H: COMMENT LETTERS

Note to Reader: This Appendix presents all the comments received by both the Bonneville Power Administration and the State of Washington Energy Facility Site Evaluation Council. In attempt to protect the privacy of the commenters, BPA has redacted personal information such as email and mailing addresses. Additionally, BPA has removed sensitive cultural resource information from this Appendix pursuant to the laws and orders related to cultural and historic resources that have been identified in Chapter 4 of the FEIS for this proposed Project.

COMMENT LETTER 1

Michelle, Kayce (COM)

From: Don Morby [redacted]
Sent: Wednesday, May 26, 2010 7:11 PM
To: COM EFSEC
Subject: whistling ridge windpower EIS public comment
Attachments: sds wind.rtf

Don Morby
[redacted]

Attached is submitted as a comment on the EIS draft for whistling Ridge wind power.....

Why the big push on no wind mills in Underwood ?

Diversity can be defined in many different ways.

Diversity is a commitment to recognizing and appreciating the variety of characteristics that make individuals unique in an atmosphere that **promotes** and **celebrates** individual and collective achievement !

Examples of these characteristics are: age; cognitive style; culture; disability (mental, learning, physical); economic background; education; ethnicity; gender identity; geographic background; language(s) spoken; marital/partnered status; physical appearance; political affiliation; race; religious beliefs; sexual orientation.

There is another diversity just as powerful and that is the natuaral diversity of mother nature in the form of

Wind power, or wind energy, it is a renewable resource; it is from the sun. The intensity of solar radiation is diverse across the globe. Some areas receive intense amounts of sunlight, while others receive much less. The result is a temperature gradient; a gradient which is mediated by the flow of air to and from areas of dissimilar temperatures and pressure systems in our atmosphere. Uneven heating of the earth's atmosphere, in addition to irregularities on the earth's surface and the rotation of the earth create wind. Terrain, water bodies, and vegetation then shape flow patterns.... in other words Diversity !!!

Although, the wind is not constant, and may blow at a variable pace, it can become difficult to rely upon this source of power on the quieter days, when there's no breeze. Not much different than we human beings, we are not contstant, we may blow at anytime, we can be difficult to be relied upon, and we do have quieter days.

As far as the space occupied by these turbines is concerned, they hardly take considerable space. What's more, due to their height, even the land below these turbines can be used for other purposes, such as farming. When we humans build a house or barn on a lot or acre are we not also denying the use of that small portion of land to anything but a house or barn? And God forbid anyone who tells you that you have no right to build a home or barn on your land !!

1. The wind is free and with modern technology it can be captured efficiently.
2. Once the wind turbine is built, the energy it produces does not cause green house gases or other pollutants.
3. Although wind turbines can be very tall each takes up only a small plot of land. This means that the land below can still be used. This is especially the case in agricultural areas.
4. Many people find wind farms an interesting feature of the landscape.
5. Remote areas that are not connected to the electricity power grid can use wind turbines to produce their own supply.

6. Wind turbines have a role to play in both the developed and third world.
7. Many people see large wind turbines as unsightly structures and not pleasant or interesting to look at and they disfigure the countryside and are generally ugly (In our current world some people see other people this way). If being Ugly becomes a deciding factor in this country then I will probably be out of a job real soon ! In a diverse world this ability too not see eye to eye on everything is what makes us so unique.

Unlike fuels that must be drilled for and then processed and eventuality depleted, wind power is naturally created and to one degree or another is always being produced. Therefore there is an unlimited supply of this source of power and **the environment does not suffer from the use of the energy.**
So what does all this mean? Here is what I have gotten from all the rhetoric...**We as humans are as diverse and fickle in our opinions as mother nature is in hers.** On the one hand you have a Company who has agriculture and forestry down to a science.....On the other hand

you have special interest groups arriving in the area concerned about environment, mother nature, rivers, and views and they too have agriculture and

the fruits of their labors down to a science. So with these two groups who both profess to be "Green" and stand for all things "Green"

why are they bickering ?- Money? The one group thinks the windmills will detract from the value of their property, destroy the view, ruin business, and

will apparently stop at nothing to convince you of their opinion,

while the other group thinks wind power is an alternative to energy besides fossil fuels (I believe in this). They have done their convincing

with truth, facts, and openess to convince you of their opinion. A quote from J. Ollie Edmunds: " This country was not built by men who relied on somebody else to take care of them. It was built by men who relied on themselves, who dared to shape their own lives, who had enough courage to blaze new trails with enough confidence in themselves to take the necessary risks. This self-reliance is our American legacy. It is the secret of that something which stamped Americans as Americans. "

In conclusion I believe that company's like SDS are made up of men and women who shape their own lives, have good morale character, rely on themselves,

and blaze new trails toward making our community and our environment a better place to live. They have proved themselves as good

stewards of our land for the last 60 years.....more so than any special interest

group todate!!! So, **please let us move forward and get on with building the windmills**

at whistling ridge.....

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100001 - morby/citizen

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COMMENT LETTER 2

WR – DEIS
PUBLIC COMMENT #2

Michelle, Kayce (COM)

From: Kelley Beamer [redacted]
Sent: Friday, June 11, 2010 5:07 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Kelley Beamer
[redacted]

WR – DEIS
PUBLIC COMMENT #3

Michelle, Kayce (COM)

From: Marilyn Lipko [redacted]
Sent: Friday, June 11, 2010 5:21 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Marilyn Lipko
[redacted]

WR – DEIS
PUBLIC COMMENT #4

Michelle, Kayce (COM)

From: DELTON YOUNG [redacted]
Sent: Friday, June 11, 2010 5:22 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

DELTON YOUNG
[redacted]

WR – DEIS
PUBLIC COMMENT #6

Michelle, Kayce (COM)

From: Bob Windom [redacted]
Sent: Friday, June 11, 2010 5:30 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

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Bob Windom
[redacted]

WR – DEIS
PUBLIC COMMENT #7

Michelle, Kayce (COM)

From: Carol Elischer [redacted]
Sent: Friday, June 11, 2010 5:32 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

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Carol Elischer
[redacted]

WR – DEIS
PUBLIC COMMENT #8

Michelle, Kayce (COM)

From: Thomas Marney [redacted]
Sent: Friday, June 11, 2010 5:33 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

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Thomas Marney
[redacted]

WR – DEIS
PUBLIC COMMENT #9

Michelle, Kayce (COM)

From: elaine noonan [redacted]
Sent: Friday, June 11, 2010 5:34 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

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elaine noonan
[redacted]

WR – DEIS
PUBLIC COMMENT #10

Michelle, Kayce (COM)

From: Steven Young [redacted]
Sent: Friday, June 11, 2010 5:34 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Steven Young
[redacted]

WR – DEIS
PUBLIC COMMENT #11

Michelle, Kayce (COM)

From: Amy Rosenthal [redacted]
Sent: Friday, June 11, 2010 5:38 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

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Amy Rosenthal
[redacted]

WR – DEIS
PUBLIC COMMENT #12

Michelle, Kayce (COM)

From: Cort Brumfield [redacted]
Sent: Friday, June 11, 2010 6:04 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure. Your invaluable support is very appreciated.

Cort Brumfield
[redacted]

WR – DEIS
PUBLIC COMMENT #13

Michelle, Kayce (COM)

From: Jody Ellis [redacted]
Sent: Friday, June 11, 2010 6:05 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Please don't let them do this! Everybody is working so hard to save the Gorge and this is an awful idea.

Jody Ellis
[redacted]

WR – DEIS
PUBLIC COMMENT #14

Michelle, Kayce (COM)

From: Barbara Hendricks [redacted]
Sent: Friday, June 11, 2010 6:05 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

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Barbara Hendricks
[redacted]

WR – DEIS
PUBLIC COMMENT #15

Michelle, Kayce (COM)

From: Edward Craig [redacted]
Sent: Friday, June 11, 2010 6:08 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Edward Craig
[redacted]

WR – DEIS
PUBLIC COMMENT #16

Michelle, Kayce (COM)

From: helena greene [redacted]
Sent: Friday, June 11, 2010 6:18 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

helena greene
[redacted]

WR – DEIS
PUBLIC COMMENT #17

Michelle, Kayce (COM)

From: Robert Jones [redacted]
Sent: Friday, June 11, 2010 6:30 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Robert Jones
[redacted]

WR – DEIS
PUBLIC COMMENT #18

Michelle, Kayce (COM)

From: Richelle Duckwall [redacted]
Sent: Friday, June 11, 2010 6:39 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am opposed to putting wind turbines in the gorge. There is conflicting opinions about wind technology and the negative impacts are mounting. This is a beautiful part of OUR states, a scenic wonder, compared to the ALPS. It is a favorite spot of many for hiking, boating, recreating, and enjoying the natural peace. Please don't allow these wind turbines! I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Richelle Duckwall
[redacted]

WR – DEIS
PUBLIC COMMENT #19

Michelle, Kayce (COM)

From: Miren G. Berezibar-Bennett [redacted]
Sent: Friday, June 11, 2010 6:42 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Miren G. Berezibar-Bennett
[redacted]

WR – DEIS
PUBLIC COMMENT #20

Michelle, Kayce (COM)

From: Blayney Myers [redacted]
Sent: Friday, June 11, 2010 6:45 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Blayney Myers
[redacted]

WR - DEIS
PUBLIC COMMENT #21

Michelle, Kayce (COM)

From: Jackie Cherry [redacted]
Sent: Friday, June 11, 2010 6:50 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Jackie Cherry
[redacted]

WR - DEIS
PUBLIC COMMENT #22

Michelle, Kayce (COM)

From: Linda Stone [redacted]
Sent: Friday, June 11, 2010 6:50 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Linda Stone
[redacted]

WR - DEIS
PUBLIC COMMENT #23

Michelle, Kayce (COM)

From: Donald Jacobson [redacted]
Sent: Friday, June 11, 2010 6:54 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Donald Jacobson
[redacted]

WR - DEIS
PUBLIC COMMENT #24

Michelle, Kayce (COM)

From: Nora Polk [redacted]
Sent: Friday, June 11, 2010 6:57 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Nora Polk
[redacted]

WR - DEIS
PUBLIC COMMENT #25

Michelle, Kayce (COM)

From: Charles Bronson [redacted]
Sent: Friday, June 11, 2010 7:16 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Charles Bronson
[redacted]

WR - DEIS
PUBLIC COMMENT #26

Michelle, Kayce (COM)

From: Brenda Hawes [redacted]
Sent: Friday, June 11, 2010 7:26 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Brenda Hawes
[redacted]

WR - DEIS
PUBLIC COMMENT #27

Michelle, Kayce (COM)

From: Alma Leon [redacted]
Sent: Friday, June 11, 2010 7:29 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Alma Leon
[redacted]

WR - DEIS
PUBLIC COMMENT #28

Michelle, Kayce (COM)

From: Lawrence Nagel [redacted]
Sent: Friday, June 11, 2010 7:31 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

We are writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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We support renewable energy, but we are opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Lawrence Nagel
[redacted]

WR - DEIS
PUBLIC COMMENT #29

Michelle, Kayce (COM)

From: Karen Meharg [redacted]
Sent: Friday, June 11, 2010 7:43 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Karen Meharg
[redacted]

WR - DEIS
PUBLIC COMMENT #30

Michelle, Kayce (COM)

From: Grant Sawyer [redacted]
Sent: Friday, June 11, 2010 7:44 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Grant Sawyer
[redacted]

WR - DEIS
PUBLIC COMMENT #31

Michelle, Kayce (COM)

From: Gay Kramer-Dodd [redacted]
Sent: Friday, June 11, 2010 7:52 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Gay Kramer-Dodd
[redacted]

WR - DEIS
PUBLIC COMMENT #32

Michelle, Kayce (COM)

From: Rosalie Sable [redacted]
Sent: Friday, June 11, 2010 8:06 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Rosalie Sable
[redacted]

WR - DEIS
PUBLIC COMMENT #33

Michelle, Kayce (COM)

From: Jean Butcher [redacted]
Sent: Friday, June 11, 2010 8:06 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Jean Butcher
[redacted]

WR - DEIS
PUBLIC COMMENT #34

Michelle, Kayce (COM)

From: Richard Weigel [redacted]
Sent: Friday, June 11, 2010 8:09 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Richard Weigel
[redacted]

WR - DEIS
PUBLIC COMMENT #35

Michelle, Kayce (COM)

From: Steven Christian [redacted]
Sent: Friday, June 11, 2010 8:23 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Steven Christian
[redacted]

WR - DEIS
PUBLIC COMMENT #36

Michelle, Kayce (COM)

From: Pepper Trail [redacted]
Sent: Friday, June 11, 2010 8:33 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Pepper Trail
[redacted]

WR - DEIS
PUBLIC COMMENT #37

Michelle, Kayce (COM)

From: Ray Wood [redacted]
Sent: Friday, June 11, 2010 8:52 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Ray Wood
[redacted]

WR - DEIS
PUBLIC COMMENT #38

Michelle, Kayce (COM)

From: Norma Reich [redacted]
Sent: Friday, June 11, 2010 8:52 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Norma Reich
[redacted]

WR - DEIS
PUBLIC COMMENT #39

Michelle, Kayce (COM)

From: Jocelyn Luciano [redacted]
Sent: Friday, June 11, 2010 8:58 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Jocelyn Luciano
[redacted]

WR - DEIS
PUBLIC COMMENT #40

Michelle, Kayce (COM)

From: Martin Velez [redacted]
Sent: Friday, June 11, 2010 9:07 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Martin Velez
[redacted]

WR - DEIS
PUBLIC COMMENT #41

Michelle, Kayce (COM)

From: Marilyn van Dyk [redacted]
Sent: Friday, June 11, 2010 9:18 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Marilyn van Dyk

Marilyn van Dyk
[redacted]

WR - DEIS
PUBLIC COMMENT #43

Michelle, Kayce (COM)

From: Morgen Lennox [redacted]
Sent: Friday, June 11, 2010 9:30 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Morgen Lennox
[redacted]

WR - DEIS
PUBLIC COMMENT #44

Michelle, Kayce (COM)

From: Glen Blanchard [redacted]
Sent: Friday, June 11, 2010 9:37 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Glen Blanchard
[redacted]

WR - DEIS
PUBLIC COMMENT #45

Michelle, Kayce (COM)

From: Glen Blanchard [redacted]
Sent: Friday, June 11, 2010 9:37 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Glen Blanchard
[redacted]

WR - DEIS
PUBLIC COMMENT #46

Michelle, Kayce (COM)

From: Lor Dennis [redacted]]
Sent: Friday, June 11, 2010 9:42 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Lor Dennis
[redacted]

WR - DEIS
PUBLIC COMMENT #47

Michelle, Kayce (COM)

From: Erin Matthiessen [redacted]
Sent: Friday, June 11, 2010 9:58 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Erin Matthiessen
[redacted]

WR - DEIS
PUBLIC COMMENT #48

Michelle, Kayce (COM)

From: sharilyn cohn [redacted]
Sent: Friday, June 11, 2010 9:59 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

sharilyn cohn
[redacted]

WR - DEIS
PUBLIC COMMENT #49

Michelle, Kayce (COM)

From: Catherine Zegar [redacted]
Sent: Friday, June 11, 2010 10:06 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Catherine Zegar
[redacted]

WR - DEIS
PUBLIC COMMENT #50

Michelle, Kayce (COM)

From: Preston Seu [redacted]
Sent: Friday, June 11, 2010 10:11 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Preston Seu
[redacted]

WR - DEIS
PUBLIC COMMENT #51

Michelle, Kayce (COM)

From: Amy Houchen [redacted]t]
Sent: Friday, June 11, 2010 10:17 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Amy Houchen
[redacted]

WR - DEIS
PUBLIC COMMENT #52

Michelle, Kayce (COM)

From: Michael Johnson [redacted]
Sent: Friday, June 11, 2010 10:22 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Michael Johnson
[redacted]

WR - DEIS
PUBLIC COMMENT #53

Michelle, Kayce (COM)

From: Earl Switzer [redacted]
Sent: Friday, June 11, 2010 10:29 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Earl Switzer
[redacted]

WR - DEIS
PUBLIC COMMENT #54

Michelle, Kayce (COM)

From: Steve Gerould [redacted]
Sent: Friday, June 11, 2010 10:38 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Steve Gerould
[redacted]

WR - DEIS
PUBLIC COMMENT #55

Michelle, Kayce (COM)

From: Tom Keys [redacted]
Sent: Friday, June 11, 2010 11:26 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Tom Keys
[redacted]

WR - DEIS
PUBLIC COMMENT #56

Michelle, Kayce (COM)

From: James Welch [redacted]
Sent: Friday, June 11, 2010 11:34 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

James Welch
[redacted]

WR - DEIS
PUBLIC COMMENT #57

Michelle, Kayce (COM)

From: Jane Harold [redacted]]
Sent: Saturday, June 12, 2010 12:40 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Jane Harold
[redacted]

WR - DEIS
PUBLIC COMMENT #58

Michelle, Kayce (COM)

From: Rich Mackin [redacted]
Sent: Saturday, June 12, 2010 1:11 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Rich Mackin
[redacted]

WR - DEIS
PUBLIC COMMENT #59

Michelle, Kayce (COM)

From: Trenton McKinney [redacted]
Sent: Saturday, June 12, 2010 1:49 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Trenton McKinney
[redacted]

WR - DEIS
PUBLIC COMMENT #60

Michelle, Kayce (COM)

From: Ian Shelley [redacted]
Sent: Saturday, June 12, 2010 5:39 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Ian Shelley
[redacted]

WR - DEIS
PUBLIC COMMENT #61

Michelle, Kayce (COM)

From: maggie schneider [redacted]
Sent: Saturday, June 12, 2010 6:16 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.There are many more sites in Washington away from truly scenic areas that can be utilized for wind power I am totally in favor of wind, but not when it comes to our scenic treasures, cutting of forest land, and endangerment of fragile wildlife species.

maggie schneider
[redacted]

WR - DEIS
PUBLIC COMMENT #62

Michelle, Kayce (COM)

From: Paul Webber [redacted]
Sent: Saturday, June 12, 2010 6:21 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Paul Webber
[redacted]

WR - DEIS
PUBLIC COMMENT #63

Michelle, Kayce (COM)

From: Georgia Gunesch [redacted]
Sent: Saturday, June 12, 2010 6:40 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Georgia Gunesch
[redacted]

WR - DEIS
PUBLIC COMMENT #64

Michelle, Kayce (COM)

From: Brock Roberts [redacted]
Sent: Saturday, June 12, 2010 7:20 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Brock Roberts
[redacted]

WR - DEIS
PUBLIC COMMENT #66

Michelle, Kayce (COM)

From: Sue Doolen [redacted]
Sent: Saturday, June 12, 2010 8:09 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Sue Doolen
[redacted]

WR - DEIS
PUBLIC COMMENT #67

Michelle, Kayce (COM)

From: Mike Aspros [redacted]om]
Sent: Saturday, June 12, 2010 8:27 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Mike Aspros
[redacted]

WR - DEIS
PUBLIC COMMENT #68

Michelle, Kayce (COM)

From: Barbara Baltz [redacted]
Sent: Saturday, June 12, 2010 8:48 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Barbara Baltz
[redacted]

WR - DEIS
PUBLIC COMMENT #69

Michelle, Kayce (COM)

From: Marv Binegar [redacted]
Sent: Saturday, June 12, 2010 8:48 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Marv Binegar
[redacted]

WR - DEIS
PUBLIC COMMENT #70

Michelle, Kayce (COM)

From: Betty Lavis [redacted]
Sent: Saturday, June 12, 2010 9:02 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Betty Lavis
[redacted]

WR - DEIS
PUBLIC COMMENT #71

Michelle, Kayce (COM)

From: Wayne Kelly [redacted]
Sent: Saturday, June 12, 2010 9:38 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Wayne Kelly
[redacted]

WR - DEIS
PUBLIC COMMENT #72

Michelle, Kayce (COM)

From: Ed Kingrey [redacted]
Sent: Saturday, June 12, 2010 9:39 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Ed Kingrey
[redacted]

WR - DEIS
PUBLIC COMMENT #73

Michelle, Kayce (COM)

From: maite paine [redacted]
Sent: Saturday, June 12, 2010 9:59 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

maite paine
[redacted]

WR - DEIS
PUBLIC COMMENT #74

Michelle, Kayce (COM)

From: John Gallo [redacted]t]
Sent: Saturday, June 12, 2010 10:14 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

John Gallo
[redacted]

WR - DEIS
PUBLIC COMMENT #75

Michelle, Kayce (COM)

From: David S. Nichols [redacted]
Sent: Saturday, June 12, 2010 11:27 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

David S. Nichols
[redacted]

WR - DEIS
PUBLIC COMMENT #76

Michelle, Kayce (COM)

From: Dan Tanksley [redacted]m]
Sent: Saturday, June 12, 2010 12:00 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Dan Tanksley
[redacted]

WR - DEIS
PUBLIC COMMENT #77

Michelle, Kayce (COM)

From: Sarah Hafer [redacted]
Sent: Saturday, June 12, 2010 12:08 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Sarah Hafer
[redacted]

WR - DEIS
PUBLIC COMMENT #78

Michelle, Kayce (COM)

From: Cherie Hunton [redacted]
Sent: Saturday, June 12, 2010 1:04 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Cherie Hunton
[redacted]

WR - DEIS
PUBLIC COMMENT #79

Michelle, Kayce (COM)

From: Frances Zilla [redacted]
Sent: Saturday, June 12, 2010 2:11 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Frances Zilla
[redacted]

WR - DEIS
PUBLIC COMMENT #80

Michelle, Kayce (COM)

From: Lynn Minneman [redacted]
Sent: Saturday, June 12, 2010 2:13 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Lynn Minneman
[redacted]

Michelle, Kayce (COM)

WR - DEIS
Public Comment #81

From: Michael Kloor [redacted]
Sent: Saturday, June 12, 2010 3:23 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Michael Kloor
[redacted]

WR - DEIS
Public Comment #82

Michelle, Kayce (COM)

From: Linda Finklea [redacted]
Sent: Saturday, June 12, 2010 4:37 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Linda Finklea
[redacted]

WR - DEIS
Public Comment #83

Michelle, Kayce (COM)

From: ann watters [redacted]
Sent: Saturday, June 12, 2010 5:13 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

ann watters
[redacted]

WR - DEIS
Public Comment #84

Michelle, Kayce (COM)

From: Demelza Costa [redacted]
Sent: Saturday, June 12, 2010 6:39 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Demelza Costa
[redacted]

WR - DEIS
Public Comment #85

Michelle, Kayce (COM)

From: dell goldsmith [redacted]
Sent: Saturday, June 12, 2010 7:03 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

dell goldsmith
[redacted]

WR - DEIS
Public Comment #86

Michelle, Kayce (COM)

From: Lynn Putnam [redacted]
Sent: Saturday, June 12, 2010 7:40 PM
To: COM EFSEC
Subject: Governor Gregoire please. please deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure. There's got to be alternative locations that are more appropriate.

Lynn Putnam
[redacted]

WR - DEIS
Public Comment #88

Michelle, Kayce (COM)

From: Gaia Quay [redacted]
Sent: Saturday, June 12, 2010 8:54 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Gaia Quay
[redacted]

WR - DEIS
Public Comment #89

Michelle, Kayce (COM)

From: Jon Wood [redacted]
Sent: Saturday, June 12, 2010 10:00 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Jon Wood
[redacted]

WR - DEIS
Public Comment #90

Michelle, Kayce (COM)

From: Steel Steel [redacted]
Sent: Sunday, June 13, 2010 1:35 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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In addition, locating 426-foot-tall turbines on the ridge line of the Columbia River Gorge would degrade the scenic value of the Gorge. The turbines and their blinking lights would be highly visible from several designated key viewing areas within the National Scenic Area, including Interstate 84, the Historic Columbia River Highway, Columbia River, Cook-Underwood Road, and Panorama Point. The project would introduce industrial development into the natural, forested landscape and indefinitely alter views in the National Scenic Area.

I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Steel Steel
[redacted]

WR - DEIS
Public Comment #91

Michelle, Kayce (COM)

From: Kim Brandow [redacted]
Sent: Sunday, June 13, 2010 8:27 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
I would also like to add, that yesterday I drove HWY 84 from Pendleton to Troutdale and was so surprised that the ugliness of the windmills along the rims. Why is it that scenery has to be ruined?
This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because this project is proposed along a forested ridgeline in the foothills of the Cascade Mountains. The project would permanently disturb large areas of forested habitat and result in direct and indirect impacts to multiple wildlife species through habitat loss and displacement, direct collisions with turbine blades, and other factors. The potentially affected listed and sensitive species include northern spotted owl, western gray squirrel, northern goshawk, several species of bats, multiple migratory bird species, mule deer, black-tailed deer, and elk.
In addition, locating 426-foot-tall turbines on the ridge line of the Columbia River Gorge would degrade the scenic value of the Gorge. The turbines and their blinking lights would be highly visible from several designated key viewing areas within the National Scenic Area, including Interstate 84, the Historic Columbia River Highway, Columbia River, Cook-Underwood Road, and Panorama Point. The project would introduce industrial development into the natural, forested landscape and indefinitely alter views in the National Scenic Area.

I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Kim Brandow
[redacted]

WR - DEIS
Public Comment #92

Michelle, Kayce (COM)

From: Julie DeSmith [redacted]
Sent: Sunday, June 13, 2010 8:40 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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In addition, locating 426-foot-tall turbines on the ridge line of the Columbia River Gorge would degrade the scenic value of the Gorge. The turbines and their blinking lights would be highly visible from several designated key viewing areas within the National Scenic Area, including Interstate 84, the Historic Columbia River Highway, Columbia River, Cook-Underwood Road, and Panorama Point. The project would introduce industrial development into the natural, forested landscape and indefinitely alter views in the National Scenic Area.

I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Julie DeSmith
[redacted]

WR - DEIS
Public Comment #93

Michelle, Kayce (COM)

From: erika heins [redacted]com]
Sent: Sunday, June 13, 2010 9:46 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

erika heins
[redacted]

Michelle, Kayce (COM)

From: elena efoli [redacted]om]
Sent: Sunday, June 13, 2010 9:51 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

elena efoli
[redacted]

WR - DEIS
Public Comment #95

Michelle, Kayce (COM)

From: Dawn Juliano [redacted]om]
Sent: Sunday, June 13, 2010 10:24 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Dawn Juliano
[redacted]

WR - DEIS
Public Comment #96

Michelle, Kayce (COM)

From: David Grant [redacted]
Sent: Sunday, June 13, 2010 10:43 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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In addition, locating 426-foot-tall turbines on the ridge line of the Columbia River Gorge would degrade the scenic value of the Gorge. The turbines and their blinking lights would be highly visible from several designated key viewing areas within the National Scenic Area, including Interstate 84, the Historic Columbia River Highway, Columbia River, Cook-Underwood Road, and Panorama Point. The project would introduce industrial development into the natural, forested landscape and indefinitely alter views in the National Scenic Area.

I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

David Grant
[redacted]

WR - DEIS
Public Comment #98

Michelle, Kayce (COM)

From: Richard Gorringe, Ph.D. [redacted]
Sent: Sunday, June 13, 2010 11:28 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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In addition, locating 426-foot-tall turbines on the ridge line of the Columbia River Gorge would degrade the scenic value of the Gorge. The turbines and their blinking lights would be highly visible from several designated key viewing areas within the National Scenic Area, including Interstate 84, the Historic Columbia River Highway, Columbia River, Cook-Underwood Road, and Panorama Point. The project would introduce industrial development into the natural, forested landscape and indefinitely alter views in the National Scenic Area.

I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Richard Gorringe, Ph.D.
[redacted]

Michelle, Kayce (COM)

From: Jane Steadman [redacted]
Sent: Sunday, June 13, 2010 12:05 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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In addition, locating 426-foot-tall turbines on the ridge line of the Columbia River Gorge would degrade the scenic value of the Gorge. The turbines and their blinking lights would be highly visible from several designated key viewing areas within the National Scenic Area, including Interstate 84, the Historic Columbia River Highway, Columbia River, Cook-Underwood Road, and Panorama Point. The project would introduce industrial development into the natural, forested landscape and indefinitely alter views in the National Scenic Area.

I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Jane Steadman
[redacted]

Michelle, Kayce (COM)

From: David Griffith [redacted]
Sent: Sunday, June 13, 2010 12:44 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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In addition, locating 426-foot-tall turbines on the ridge line of the Columbia River Gorge would degrade the scenic value of the Gorge. The turbines and their blinking lights would be highly visible from several designated key viewing areas within the National Scenic Area, including Interstate 84, the Historic Columbia River Highway, Columbia River, Cook-Underwood Road, and Panorama Point. The project would introduce industrial development into the natural, forested landscape and indefinitely alter views in the National Scenic Area.

I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

David Griffith
[redacted]

WR - DEIS
Public Comment #101

Michelle, Kayce (COM)

From: Susanna Askins [redacted]
Sent: Sunday, June 13, 2010 1:20 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Susanna Askins
[redacted]

WR - DEIS
Public Comment #103

Michelle, Kayce (COM)

From: Mary Anne Joyce [redacted]
Sent: Sunday, June 13, 2010 4:49 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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In addition, locating 426-foot-tall turbines on the ridge line of the Columbia River Gorge would degrade the scenic value of the Gorge. The turbines and their blinking lights would be highly visible from several designated key viewing areas within the National Scenic Area, including Interstate 84, the Historic Columbia River Highway, Columbia River, Cook-Underwood Road, and Panorama Point. The project would introduce industrial development into the natural, forested landscape and indefinitely alter views in the National Scenic Area.

I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Mary Anne Joyce
[redacted]

WR - DEIS
Public Comment #104

Michelle, Kayce (COM)

From: Dan Sherwood [redacted]
Sent: Sunday, June 13, 2010 7:07 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Dan Sherwood
[redacted]

WR - DEIS
Public Comment #105

Michelle, Kayce (COM)

From: Pam Davee [redacted]
Sent: Sunday, June 13, 2010 8:22 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Pam Davee
[redacted]

WR - DEIS
Public Comment #106

Michelle, Kayce (COM)

From: Laurie Meyer [redacted]
Sent: Sunday, June 13, 2010 8:56 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Laurie Meyer
[redacted]

Michelle, Kayce (COM)

From: Barbara Manildi [redacted]
Sent: Sunday, June 13, 2010 11:10 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Barbara Manildi
[redacted]

Michelle, Kayce (COM)

From: Robert Thinnes [redacted]
Sent: Sunday, June 13, 2010 11:35 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Robert Thinnes
[redacted]

Michelle, Kayce (COM)

From: Norma Friday [redacted]
Sent: Monday, June 14, 2010 1:00 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Norma Friday
[redacted]

Michelle, Kayce (COM)

From: Jessi Snow [redacted]
Sent: Monday, June 14, 2010 1:19 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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In addition, locating 426-foot-tall turbines on the ridge line of the Columbia River Gorge would degrade the scenic value of the Gorge. The turbines and their blinking lights would be highly visible from several designated key viewing areas within the National Scenic Area, including Interstate 84, the Historic Columbia River Highway, Columbia River, Cook-Underwood Road, and Panorama Point. The project would introduce industrial development into the natural, forested landscape and indefinitely alter views in the National Scenic Area.

I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Jessi Snow
[redacted]

WR - DEIS
Public Comment #111

Michelle, Kayce (COM)

From: Joel Thorson [redacted]
Sent: Monday, June 14, 2010 6:51 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Joel Thorson
[redacted]

WR - DEIS
Public Comment #112

Michelle, Kayce (COM)

From: George Cummings [redacted]
Sent: Monday, June 14, 2010 9:14 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

George Cummings
[redacted]

WR - DEIS
Public Comment #113

Michelle, Kayce (COM)

From: Rebecca Papke [redacted]
Sent: Monday, June 14, 2010 10:02 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Rebecca Papke
[redacted]

WR - DEIS
Public Comment #118

Talburt, Tammy (COM)

From: joanna bagatta [redacted]
Sent: Monday, June 14, 2010 1:27 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Purple Category, Blue Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

joanna bagatta
[redacted]

Talburt, Tammy (COM)

From: emile combe [redacted]
Sent: Monday, June 14, 2010 3:18 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Blue Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

emile combe
[redacted]

WR - DEIS
Public Comment #120

Talburt, Tammy (COM)

From: Jean Wyman [redacted]
Sent: Monday, June 14, 2010 3:26 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Blue Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Jean Wyman
[redacted]

Talburt, Tammy (COM)

From: Al Kapuler [redacted]
Sent: Monday, June 14, 2010 3:53 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Yellow Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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Wife and I just drove thru the Gorge on Hwy 84 from near Arlington to Portland and it is a magnificent journey, with incredible hills, basalt beauty and remarkable water. Let us keep this gift for our children, and for everyone who comes to visit.

I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Al Kapuler
[redacted]

WR - DEIS
Public Comment #123

Talburt, Tammy (COM)

From: Jeffrey Block [redacted]
Sent: Monday, June 14, 2010 5:47 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Blue Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Jeffrey Block
[redacted]

Talburt, Tammy (COM)

From: Laurie Todd [redacted]
Sent: Monday, June 14, 2010 8:39 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Blue Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Laurie Todd
[redacted]

WR - DEIS
Public Comment #126

Talburt, Tammy (COM)

From: Jo Ellen Legg [redacted]
Sent: Monday, June 14, 2010 9:58 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Blue Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Jo Ellen Legg
[redacted]

WR - DEIS
Public Comment #127

Talburt, Tammy (COM)

From: Toby McElravey [redacted]
Sent: Monday, June 14, 2010 10:14 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Blue Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Toby McElravey
[redacted]

Talburt, Tammy (COM)

From: scott hulbert [redacted]
Sent: Monday, June 14, 2010 11:03 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Blue Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

scott hulbert
[redacted]

Talburt, Tammy (COM)

From: Tom Wehrley [redacted]
Sent: Tuesday, June 15, 2010 7:01 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Blue Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Tom Wehrley
[redacted]

Talburt, Tammy (COM)

From: Steven B. Wheeler [redacted]
Sent: Tuesday, June 15, 2010 10:43 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Blue Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Steven B. Wheeler
[redacted]

Talburt, Tammy (COM)

From: Adriane Ceglie [redacted]
Sent: Tuesday, June 15, 2010 11:42 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Blue Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Adriane Ceglie
[redacted]

Talburt, Tammy (COM)

From: Lyle Anderson [redacted]
Sent: Tuesday, June 15, 2010 11:47 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Blue Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Lyle Anderson
[redacted]

Talburt, Tammy (COM)

From: james thompson [redacted]
Sent: Tuesday, June 15, 2010 12:51 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Blue Category

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

james thompson
[redacted]

WR - DEIS
Public Comment #141

Talburt, Tammy (COM)

From: John C Morris Jr [redacted]
Sent: Tuesday, June 15, 2010 2:22 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Blue Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

John C Morris Jr
[redacted]

WR - DEIS
Public Comment #145

Talburt, Tammy (COM)

From: Paulette and Ron Tatum [redacted]
Sent: Tuesday, June 15, 2010 9:47 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Blue Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Paulette and Ron Tatum
[redacted]

Talburt, Tammy (COM)

From: Jack West [redacted]
Sent: Tuesday, June 15, 2010 10:17 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Blue Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Jack West
[redacted]

WR - DEIS
Public Comment #152

Talburt, Tammy (COM)

From: Candace Bolen [redacted]
Sent: Wednesday, June 16, 2010 8:39 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Blue Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

I submit this lettler in hopes that you will consider the impact on the beauty and health on this National Scenic Area. Renewable energy should support our environments positively.

Candace Bolen
[redacted]

Talburt, Tammy (COM)

From: Erin Moore [redacted]
Sent: Wednesday, June 16, 2010 9:24 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Follow Up Flag: Follow up
Flag Status: Flagged

Categories: Blue Category

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Erin Moore
[redacted]

WR - DEIS
Public Comment #156

Talburt, Tammy (COM)

From: Candice Guth [redacted]
Sent: Wednesday, June 16, 2010 9:44 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Blue Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Candice Guth
[redacted]

Talburt, Tammy (COM)

From: John and Polly w [redacted]
Sent: Wednesday, June 16, 2010 10:59 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Blue Category

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

John and Polly w
[redacted]

Talburt, Tammy (COM)

From: Paul Metzger [redacted]
Sent: Wednesday, June 16, 2010 11:42 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Blue Category

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Paul Metzger
[redacted]

Talburt, Tammy (COM)

From: sherry meier [redacted]
Sent: Wednesday, June 16, 2010 4:51 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Blue Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Please do not allow this project to move forward. It is of utmost importance to preserve this area as wildlands.

sherry meier
[redacted]

WR - DEIS
Public Comment #168

Talburt, Tammy (COM)

From: William Savery [redacted]
Sent: Thursday, June 17, 2010 11:09 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Blue Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

William Savery
[redacted]

Talburt, Tammy (COM)

From: Ben Savery [redacted]
Sent: Thursday, June 17, 2010 11:30 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Blue Category

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Ben Savery
[redacted]

WR - DEIS
Public Comment #178

Talburt, Tammy (COM)

From: Rick Ray [redacted]
Sent: Friday, June 18, 2010 9:55 AM
To: COM EFSEC
Subject: Please don't approve Whistling Ridge

Categories: Blue Category

This is my personal comment. I am a resident of the Columbia River Gorge NSA.

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Rick Ray
[redacted]

WR - DEIS
Public Comment #180

Talburt, Tammy (COM)

From: Holly Bard [redacted]
Sent: Friday, June 18, 2010 11:12 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Blue Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Holly Bard
[redacted]

WR - DEIS
Public Comment #221

Michelle, Kayce (COM)

From: Louise Brown [redacted]
Sent: Thursday, June 24, 2010 12:45 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Louise Brown
[redacted]

Michelle, Kayce (COM)

From: Diana Cathey [redacted]
Sent: Thursday, June 24, 2010 12:58 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Diana Cathey
[redacted]

Michelle, Kayce (COM)

WR - DEIS
Public Comment #232

From: Anthony Lyon [redacted]
Sent: Tuesday, June 29, 2010 10:48 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Anthony Lyon
[redacted]

WR - DEIS
Public Comment #233

Michelle, Kayce (COM)

From: Marshall Goldberg [redacted]
Sent: Wednesday, June 30, 2010 10:12 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Marshall Goldberg
[redacted]

RECEIVED
JUL 02 2010
ENERGY FACILITY SITE
EVALUATION COUNCIL

Washington EFSEC
905 Plum Street SE
Olympia,, WA 98504-3172
Fax:(503) 230-3285

RE: Whistling Ridge Energy Project

Dear Sir or Ms.

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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Ben T Baird

[redacted]

COMMENT LETTER 3

WR – DEIS
PUBLIC COMMENT #5

Michelle, Kayce (COM)

From: john gogol [redacted]
Sent: Friday, June 11, 2010 5:23 PM
To: COM EFSEC
Subject: Governor Gregoire must approve Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant positive impacts to sensitive wildlife and plant habitat and would compliment the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire accept this project.

I support renewable energy, anything to replace the coal exhaust blowing down the gorge!

We know we can't have it all!

John Gogol

john gogol
[redacted]

COMMENT LETTER 4

WR - DEIS
PUBLIC COMMENT #42

Michelle, Kayce (COM)

From: Ron Martin [redacted]
Sent: Friday, June 11, 2010 9:18 PM
To: COM EFSEC
Subject: Please deny Whistling Ridge Wind Farm

I am writing as a resident of the Columbia River Gorge and as a small business owner. Many fellow business owners depend on the natural beauty of the Columbia River Gorge for their livelihoods. It is also the reason many of us choose to live here. I am also writing as a strong supporter of green energy and having a PhD in environmental engineering, I understand the importance of eliminating carbon based energy.

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because this project is proposed along a forested ridgeline in the foothills of the Cascade Mountains. The project would permanently disturb large areas of forested habitat and result in direct and indirect impacts to multiple wildlife species through habitat loss and displacement, direct collisions with turbine blades, and other factors. The potentially affected listed and sensitive species include northern spotted owl, western gray squirrel, northern goshawk, several species of bats, multiple migratory bird species, mule deer, black-tailed deer, and elk.

In addition, locating 426-foot-tall turbines on the ridge line of the Columbia River Gorge would degrade the scenic value of the Gorge. The turbines and their blinking lights would be highly visible from several designated key viewing areas within the National Scenic Area, including Interstate 84, the Historic Columbia River Highway, Columbia River, Cook-Underwood Road, and Panorama Point. The project would introduce industrial development into the natural, forested landscape and indefinitely alter views in the National Scenic Area.

I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure. There are plenty of areas outside the Columbia River Gorge National Scenic Area that are far more suitable for such a development.

Ron Martin
[redacted]

COMMENT LETTER 5

WR - DEIS
PUBLIC COMMENT #65

Michelle, Kayce (COM)

From: Greg Lief [redacted]
Sent: Saturday, June 12, 2010 7:40 AM
To: COM EFSEC
Subject: Governor Gregoire should deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area along the Skamania and Klickitat county line.

The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because this project is proposed along a forested ridgeline in the foothills of the Cascade Mountains. The project would permanently disturb large areas of forested habitat and result in direct and indirect impacts to multiple wildlife species through habitat loss and displacement, direct collisions with turbine blades, and other factors. The potentially affected listed and sensitive species include northern spotted owl, western gray squirrel, northern goshawk, several species of bats, multiple migratory bird species, mule deer, black-tailed deer, and elk.
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This project would introduce industrial development into the natural, forested landscape and indefinitely alter views in the National Scenic Area.

I highly support renewable energy. But I am opposed to industrial-scale wind energy development within, or adjacent to, the Columbia River Gorge National Scenic Area. There are other locations available.

Greg Lief
[redacted]

COMMENT LETTER 6

WR - DEIS
Public Comment #87

Michelle, Kayce (COM)

From: Elizabeth Graser-Lindsey [redacted]
Sent: Saturday, June 12, 2010 7:50 PM
To: COM EFSEC
Subject: THINK ABOUT THE CONSEQUENCES: Governor Gregoire must deny Whistling Ridge

IF WE LEARN ONE THING FROM THE CURRENT PROBLEMS WITH PEAK OIL AND CLIMATE CHANGE, IT IS THAT WE SHOULD CONSIDER THE IMPACTS OF ENERGY DECISIONS AND ALL THE IMPLICATIONS BEFORE ENGAGING IN THE ENERGY PROJECTS. IF WE DO ANYTHING FOR ENERGY WITHOUT CONSIDERING THE ILL CONSEQUENCES, WE BLUNDER FORWARD NO SMARTER THAN OUR ERRONEOUS ACTIONS WITH FOSSIL FUELS. FOR THIS REASON PLEASE CONSIDER THE FOLLOWING.

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because this project is proposed along a forested ridgeline in the foothills of the Cascade Mountains. The project would permanently disturb large areas of forested habitat and result in direct and indirect impacts to multiple wildlife species through habitat loss and displacement, direct collisions with turbine blades, and other factors. The potentially affected listed and sensitive species include northern spotted owl, western gray squirrel, northern goshawk, several species of bats, multiple migratory bird species, mule deer, black-tailed deer, and elk.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Elizabeth Graser-Lindsey
[redacted]

COMMENT LETTER 7

WR - DEIS
Public Comment #97

Michelle, Kayce (COM)

From: Mary Reese [redacted]
Sent: Sunday, June 13, 2010 10:53 AM
To: COM EFSEC
Subject: Wind Turbines should be painted to blend with the landscape

We were hiking along the Deschutes River a couple weeks ago, and we could see the giant white wind turbines over on the Washington side of the Columbia. What an eyesore! It looks like "War of the Worlds". Wind energy is great, but why paint them glaring white? They should be a color that blends with the hills - a simple (partial) solution to the destruction of everyone's scenery, and it would not cost any more than painting them white.

Thank you for considering this idea.

Mary Reese
[redacted]

Mary Reese
[redacted]

WR - DEIS
Public Comment #102

COMMENT LETTER 8
Michelle, Kayce (COM)

From: Roger Brewer [redacted]
Sent: Sunday, June 13, 2010 1:25 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to concerning the DEIS for the Whistling Ridge Energy Project. The proposed project would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

This proposal would degrade the scenic value of the Columbia Gorge National Scenic area by placing turbines and blinking lights in places that would be highly visible from several designated key viewing areas within the National Scenic Area, including Interstate 84, the Historic Columbia River Highway, Columbia River, Cook-Underwood Road, and Panorama Point.

Yours truly,
Roger Brewer

Roger Brewer
[redacted]

Michelle, Kayce (COM)

From: Barbara Miller [redacted]
Sent: Monday, June 14, 2010 11:36 AM
To: COM EFSEC
Subject: Please deny the Whistling Ridge Energy Project!

I join with Friends of the Columbia Gorge and its many supporters to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because this project is proposed along a forested ridgeline in the foothills of the Cascade Mountains. The project would permanently disturb large areas of forested habitat and result in direct and indirect impacts to multiple wildlife species through habitat loss and displacement, direct collisions with turbine blades, and other factors. The potentially affected listed and sensitive species include northern spotted owl, western gray squirrel, northern goshawk, several species of bats, multiple migratory bird species, mule deer, black-tailed deer, and elk.

In addition, locating 426-foot-tall turbines on the ridge line of the Columbia River Gorge would degrade the scenic value of the Gorge. The turbines and their blinking lights would be highly visible from several designated key viewing areas within the National Scenic Area, including the Historic Columbia River Highway, Columbia River, Cook-Underwood Road, and Panorama Point. The project would introduce industrial development into the natural, forested landscape and indefinitely alter views in the National Scenic Area.

I strongly support renewable energy, but I am opposed to wind energy development that would cause such significant negative impacts to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Barbara Miller
[redacted]

COMMENT LETTER 10

WR - DEIS
Public Comment #115

Michelle, Kayce (COM)

From: Posner, Stephen (COM)
Sent: Tuesday, June 15, 2010 10:49 AM
To: Michelle, Kayce (COM)
Cc: Talburt, Tammy (COM)
Subject: FW: Whistling Ridge Project

Please process this as a public comment for WR. Thanks.

From: lois shetterly [redacted]
Sent: Tuesday, June 15, 2010 9:59 AM
To: Posner, Stephen (COM)
Subject: Whistling Ridge Project

Dear Mr. Posner: Just to let you know that I am a resident of rural Klickitat County (just out of White Salmon) and support this project. We need clean energy and well-paying jobs in our area, and this project will have minimal impact on views in The Gorge or on the surrounding environment.

Thank you,
Lois Shetterly

[redacted]

The New Busy is not the too busy. Combine all your e-mail accounts with Hotmail. Get busy.

COMMENT LETTER 11

RECEIVED
JUN 14 2010
ENERGY FACILITY SITE EVALUATION COUNCIL
WR - DEIS
Public Comment #116

Confederated Tribes and Bands of the Yakama Nation
Established by the Treaty of June 9, 1855

Post Office Box 151
Toppenish Washington 98948

5/27/2010

Stephen Posner
Compliance Manager, EFSEC
905 Plum Street SE
Olympia, Washington 98504-3172

Andrew M. Montano
Environmental Project Manager
Bonneville Power Administration
P.O. Box 14428
Portland, Oregon 97293-4428

Dear Mr. Posner and Mr. Montano,

We have reviewed the recent Draft Environmental Impact Statement (DEIS) complied for the Whistling Ridge Energy Facility. In doing so, we noted under section 3.10.2.2 no mention has been made of the finding of the Yakama Nation Cultural Resources Program study which resulted in the findings of Traditional Cultural Property within the proposed wind project lands. The DEIS states that:

> *"A field investigation by Yakama Nation cultural resources specialists occurred in December 2009. The Yakama Nation's findings, currently in preparation, will supplement the information contained in this EIS."*

However, the results of the field investigation were reported to SDS Lumber and the Department of Archaeology and Historic Preservation in December of 2009, shortly after the site visit was completed. We, therefore, are taking this opportunity to resubmit this report to the Energy Facility Siting Evaluation Council (EFSEC) and the Bonneville Power Administration (BPA). It is our directive that this report be included in the Final Environmental Impact Statement as a portion of the consultation responsibilities held by BPA and EFSEC.

Sincerely,

Ruth Jim
Chairman, Yakama Nation Roads, Irrigation, and Lands Committee

Cc: Yakama Nation Cultural Resources Program
Gretchen Kaehler, Department of Archaeology and Historic Preservation
Richard Till, Fiends of the Columbia Gorge

Confederated Tribes and Bands of the Yakama Nation
Established by the Treaty of June 9, 1855

Post Office Box 151
Toppenish Washington 98948

RECEIVED
JUN 17 2010
ENVIRONMENT
FISH & WILDLIFE

5/27/2010

Stephen Posner
Compliance Manager, EFSEC
905 Plum Street SE
Olympia, Washington 98504-3172

Andrew M. Montano
Environmental Project Manager
Bonneville Power Administration
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Sincerely,

Ruth Jim
Chairman, Yakama Nation Roads, Irrigation, and Lands Committee

Cc: Yakama Nation Cultural Resources Program
Gretchen Kaehler, Department of Archaeology and Historic Preservation
Richard Till, Fiends of the Columbia Gorge

Michelle, Kayce (COM)

From: Posner, Stephen (COM)
Sent: Monday, June 07, 2010 1:47 PM
To: Talburt, Tammy (COM); Michelle, Kayce (COM)
Subject: FW: Whistling Ridge EIS Comment

Tammy and Kayce,

Attached is a public comment on the WR EIS. I expect that we will start receiving more of these soon, not to mention those we will get at the public meetings. I want to make sure we are ready to go with numbering and saving these in an appropriate manner. Let's talk about this after Sonia's party. Thanks.

From: Chris Carvalho [redacted]
Sent: Monday, June 07, 2010 1:40 PM
To: Posner, Stephen (COM)
Subject: Whistling Ridge EIS Comment

Dear Mr. Posner:

I have a comment on the impact of the Whistling Ridge wind project; it includes photos and is online at [redacted] I am the author of the online article.

Nestor Peak is a key viewing area used by hikers, mountain bikers, ATV enthusiasts, and horseback riders. If this project is built, the view of Mt. Hood from this peak will be permanently spoiled. In addition, the onslaught of wind turbines will continue to encircle the Columbia Gorge and destroy once-pristine views of the ridges and horizon that were one of the primary reasons the National Scenic Area was created. Please deny the project application. It is not suited for the proposed location.

Sincerely,

Chris Carvalho
[redacted]

The Windmills Are Coming

Entry 1: June 6, 2010

The Columbia Gorge faces many development threats. This one wasn't even on the radar screen ten years ago. But in the past few years as I hike and even drive the roads something is slowly creeping into my conscious perception, bit by bit. As I drive east starting near Hood River, in the far distance there's now a white jagged appearance to the horizon. At the top of the McCall Point trail on any clear day the wind turbines are visible. Eastward from there, on just about any high peak one can see a forest of white pinwheels is growing.

The shot above was taken from the top of Stacker Butte, also called Columbia Hills State Park. It is just a small piece of a much larger panorama. I am providing the full image so you can appreciate the impact. Remember that it is copyrighted, so any publication or non-educational use must be licensed by contacting me. To download it, [redacted]. This is a 1.7 MB file, so it may take some time to load. The view is toward the east with the farms of the Klickitat River valley in the foreground.

Once you open it, you will see thousands of turbines. My camera isn't good enough to show the most distant ones, but if you look closely they extend almost to the left (north) and right (south) edges of the view. They are getting closer to the edge of the Scenic Area boundary. In fact, a project called Whistling Ridge is in the approval process right now just north of Hood River on the Washington side of the Gorge, and it will be on the edge of the boundary and visible from Nestor Peak and Mitchell Point. It is a galling insult to the spirit of the Scenic Area Act to place a wind energy project a stone's throw from the regional boundary and call it compliant with the Act.

Now I'm a big fan of renewable energy, but something about this march of the turbines reminds me of what happened when The Dalles Dam was built and drowned Celilo Falls. We didn't appreciate what we lost at the time, and now it's unlikely we'll ever get the falls or the salmon back for decades to come, maybe never. Early research is documenting how these turbines kill birds and bats (1), and it's obvious what they do to the view. They also create noise pollution that aggravates nearby residents as well as

jams the communication calls birds and other creatures use for breeding, finding food, and predator avoidance. We've got to stop building them so close to the Scenic Area until we know more about their long-term effects, and also come to an understanding about how much visual impact we should tolerate. In the meantime, we can look at something proven to meet our growing demand for energy that doesn't have any negative impacts. It's called conservation.

Few of us realize the rapid pace of this change. Soon it won't be possible to go on a hike to a viewpoint anywhere in the eastern end of the Gorge and see a pristine east horizon. Most of it is already gone. The view of the horizon was something I took for granted. Today I realized it's been taken from us and might never come back.

To comment on the Whistling Ridge wind energy project, go to
http://www.efsec.wa.gov/whistling%20ridge.shtml
The project contact person is currently Stephen Posner, his information is located at the very bottom of the page.

Your comments will likely carry more weight if submitted to the Bonneville Power Administration (BPA). The Washington EFSEC typically defers to the wishes of rural counties, which are hungry for the tax dollars these projects provide. The counties have a history of ignoring the environmental impact when corporations wave money at their officials.

Comments to the BPA can be submitted at
http://www.bpa.gov/applications/publiccomments/OpenCommentListing.aspx
Scroll the page down to find the section on the Whistling Ridge Energy Project and click the "Make Comment" button.

(1) Bernton, Hal. "Scientists study wind-farm risks to birds." *The Seattle Times.* Seattle, 2010. Web. 6 June 2010 <http://seattletimes.nwsource.com/html/localnews/2012048835_windbirds07m.html>.

COMMENT LETTER 13

WR - DEIS
Public Comment #122

Talburt, Tammy (COM)

From: Nate Jackson [redacted]
Sent: Monday, June 14, 2010 4:03 PM
To: COM EFSEC
Subject: Comments on Whistling Ridge proposal

Categories: Blue Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project could cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because this project is proposed along a forested ridgeline in the foothills of the Cascade Mountains. The project would permanently disturb large areas of forested habitat and result in direct and indirect impacts to multiple wildlife species through habitat loss and displacement, direct collisions with turbine blades, and other factors. The potentially affected listed and sensitive species include northern spotted owl, western gray squirrel, northern goshawk, several species of bats, multiple migratory bird species, mule deer, black-tailed deer, and elk.

In addition, locating 426-foot-tall turbines on the ridge line of the Columbia River Gorge would degrade the scenic value of the Gorge. The turbines and their blinking lights would be highly visible from several designated key viewing areas within the National Scenic Area, including Interstate 84, the Historic Columbia River Highway, Columbia River, Cook-Underwood Road, and Panorama Point. The project would introduce industrial development into the natural, forested landscape and indefinitely alter views in the National Scenic Area.

I support renewable energy, but not at the cost of our natural and scenic treasures.

Nate Jackson
[redacted]

COMMENT LETTER 14

WR - DEIS
Public Comment #124

Talburt, Tammy (COM)

From: DAVID SIMMONS [redacted]
Sent: Monday, June 14, 2010 10:47 AM
To: COM EFSEC
Subject: WHISTING RIDGE wind farm

Categories: Yellow Category

As resident of White Salmon for 60 years I can se NO harm of any kind from this project. I have been all over this area many times and it is a perfect location for a wind farm. BPA main line runs through this property so no additional big lines needed. I fully support this project. SDS always goes a good job on all their projects. Please give them a big go ahead.
THANK YOU
DAVID SIMMONS
[redacted]

COMMENT LETTER 15

WR - DEIS
Public Comment #130

Talburt, Tammy (COM)

From: lesdew [redacted]
Sent: Tuesday, June 15, 2010 7:33 AM
To: COM EFSEC
Cc: [redacted]
Subject: Whistling Ridge Energy Project

Categories: Yellow Category

As residents of the area that will be able to see some of the turbines of this proposed project, we are in favor of it. We can't continue the practice of saying "Yes, we need it but not here". This will not get us where we need to be down the road. SDS is a good and responsible Company that cares. It is their land, they have the right to this project and will do it in an responsible manner.

Les and Dee Dewey
[redacted]

ps-It is funny that some of the people who are against this project were the same ones that were cutting hiking trails on SDS property in this same general area-having no real respect for someone else's land.

COMMENT LETTER 16

WR - DEIS
Public Comment #131

Talburt, Tammy (COM)

From: Eric Greene [redacted]
Sent: Tuesday, June 15, 2010 8:21 AM
To: COM EFSEC
Subject: whistling ridge - SDS 75 megawatt wind farm

Categories: Yellow Category

dear sirs

As a small local business located in Bingen, WA - not far from the proposed location - we would like to offer our support for the approval of this project. The turbines are located outside the gorge scenic area, are environmentally acceptable and will provide needed energy for the region.

SDS should be complemented for its concern to safeguard the local economy and the environment

I believe people who are taking the 'not in my backyard' position are both selfish and short-sighted

--
Eric Greene
[redacted]

COMMENT LETTER 17

WR - DEIS
Public Comment #132

Talburt, Tammy (COM)

From: Larry Gohl [redacted]
Sent: Tuesday, June 15, 2010 8:44 AM
To: COM EFSEC
Subject: Whistling Ridge Energy Project

Categories: Yellow Category

To EFSEC Members,

Two observations.

1. Wind turbines and transmission lines are incompatible with forests. Maintenance requires roads, clear cutting and ongoing brush removal.

2. Solar is an alternative, abundant, clean, renewable source of energy that does not require large transmission lines.

One question.

Do we need local forests or money from sales of electricity to California for survival?

One comment.

It is not the highest use of our forested environment in the Cascade mountain range to dedicate land to energy production if that means it will never have the potential again to produce a forest.

Larry Gohl
[redacted]

COMMENT LETTER 18

WR - DEIS
Public Comment #133

Talburt, Tammy (COM)

From: Cochran, Steve [redacted]
Sent: Tuesday, June 15, 2010 10:22 AM
To: COM EFSEC
Subject: Whistling Ridge Energy Project

Categories: Yellow Category

I fully support the Whistling Ridge energy project in Skamania county. We need to have the economic boost to help fund our schools and road department.
Steve Cochran
[redacted]

COMMENT LETTER 19

WR - DEIS
Public Comment #135

Talburt, Tammy (COM)

From: David Feinauer [redacted]
Sent: Tuesday, June 15, 2010 11:18 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Blue Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because this project is proposed along a forested ridgeline in the foothills of the Cascade Mountains. The project would permanently disturb large areas of forested habitat and result in direct and indirect impacts to multiple wildlife species through habitat loss and displacement, direct collisions with turbine blades, and other factors. The potentially affected listed and sensitive species include northern spotted owl, western gray squirrel, northern goshawk, several species of bats, multiple migratory bird species, mule deer, black-tailed deer, and elk.
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I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

I was raised in Hood River and spent my youth enjoying the White Salmon, Carson, Cascade Locks and Stevenson area natural beauty. I have been traveling and hiking the Gorge all of my life. Other states have sacrificed priceless treasures for expediency. Notably Hetch Hetchy valley to provide water for San Francisco. While the percentage of power/water supplied by this source has been reduced over the years, it is almost impossible to undue the dam and the infrastructure because of the entrenched interests in the system. The same will be true when it is understood that this power conveyance is not needed in the future. Until the country puts a sncere effort into energy conservation, which it has not done,I am opposed to sacrificing an irreplacable treasure for expediency.

David Feinauer
[redacted]

COMMENT LETTER 20
Talburt, Tammy (COM)

WR - DEIS
Public Comment #137

From: Linda Morningstar [redacted]
Sent: Tuesday, June 15, 2010 11:43 AM
To: COM EFSEC
Subject: The Whistling Ridge Energy Project

Categories: Yellow Category

I was born and raised in Skamania County, Washington and my husband and I have lived in the Columbia River Gorge most of our adult lives. We love this area and can think of no place that we would rather live.

We are not always thrilled with the constant winds we receive at our house but can not change the fact that we live in a very windy location. It seems foolish not to harness this abundant energy and use it to our advantage. We ABSOLUTELY SUPPORT the Whistling Ridge Energy Project and applaud SDS Lumber for trying to bring clean energy to Skamania County.

Gary and Linda Morningstar

[redacted]

COMMENT LETTER 21

WR - DEIS
Public Comment #139

Talburt, Tammy (COM)

From: J & C Peyrollaz [redacted]
Sent: Tuesday, June 15, 2010 12:16 PM
To: COM EFSEC
Subject: Whistling Ridge Energy Project

Categories: Yellow Category

[redacted]

EFSEC
905 Plum Street SE
Olympia, WA 98604-3172

To those conducting public hearings on The Whistling Ridge Energy Project:

We are part of that silent majority who do not like to attend meetings where people argue and make us feel intimidated. We feel that our voice does need to be heard on this matter, it is very important to us.

We support the Whistling Ridge Energy Project. Not only does it give a alternative source of clean energy, but it also will provide new jobs and tax revenues to our county which has been devistated with so many land set asides and regulations that our children have to leave the area in order to find jobs.

Wind energy is a clean, quiet source which uses the natural winds of the Gorge. In our opinion, the people who are causing the obsticles in implementing this natural resource are the same people who have opposed most everything else that is proposed in the Gorge. They have personal agendas which are not for the good of the community but for their selfish interests.

Wind Energy is a Good thing for the Gorge, a Good thing for the economy of the Gorge and a good, clean alternative that all the environmentalists have been insisting on. Lets move forward and let a Good thing happen.

Sincerely,

John Peyrollaz

Cloida Peyrollaz

COMMENT LETTER 22

WR - DEIS
Public Comment #142

Talburt, Tammy (COM)

From: D Garner [redacted]
Sent: Tuesday, June 15, 2010 7:27 PM
To: COM EFSEC
Subject: Whistling Ridge

Categories: Yellow Category

I finally saw a picture of what this development was going to look like throughout the central Columbia River Gorge area.

I am shocked to think that we are going to spoil the wonderful vistas and view of the Columbia River Scenic area by more wind mills. Just look to the Eastern gorge.....once out of the scenic area you are bombarded with literally thousands of wind mills. Why now, should we start placing these within view of the prime area in the Columbia River Gorge??

Once these are built, they will forever be a backdrop to this pristine area.
Why, are the turbines 400' tall? This is nearly double the size of other installations. Could more and smaller turbines be used that would not be so visible? These issues are not merely cost/benefit decisions - they will impact the natural beauty of the Columbia River Gorge Scenic area for lifetimes to come. The decision should not be made lightly and should be scrutinized from every perspective.

Ask the developers WHY, five times.
Why did you decide this was the best spot?
Why are other spots not as desirable?
Why are the turbines so tall?
Why are they placed so that the majority of the central gorge will be seeing them?
Why is your profit more important than the sacred beauty of the Columbia River Gorge?

We all know that huge subsidies are paying for these developments. Why can't they be placed where the majority of tax payers are benefited and not impacted negatively?

Sincerely,

Don Garner
[redacted]

COMMENT LETTER 23

Talburt, Tammy (COM)

From: James Nielson [redacted]
Sent: Tuesday, June 15, 2010 8:38 PM
To: COM EFSEC
Subject: Deny Whistling Ridge

Categories: Yellow Category

I support clean energy sources, but let's not unnecessarily sacrifice natural landscapes in the process. I've seen what this looks like. These windmills can be seen day and night, for miles around. That's the view from my grandmother's back porch in Haines Oregon now. Once dark night skies are now polluted by flashing red lights. So please, let's proceed with forethought. That said, I endorse this message from Friends of the Columbia Gorge. Thanks, James Nielson Portland OR

FWD:
I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because this project is proposed along a forested ridgeline in the foothills of the Cascade Mountains. The project would permanently disturb large areas of forested habitat and result in direct and indirect impacts to multiple wildlife species through habitat loss and displacement, direct collisions with turbine blades, and other factors. The potentially affected listed and sensitive species include northern spotted owl, western gray squirrel, northern goshawk, several species of bats, multiple migratory bird species, mule deer, black-tailed deer, and elk.
In addition, locating 426-foot-tall turbines on the ridge line of the Columbia River Gorge would degrade the scenic value of the Gorge. The turbines and their blinking lights would be highly visible from several designated key viewing areas within the National Scenic Area, including Interstate 84, the Historic Columbia River Highway, Columbia River, Cook-Underwood Road, and Panorama Point. The project would introduce industrial development into the natural, forested landscape and indefinitely alter views in the National Scenic Area.

I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

James Nielson
[redacted]

COMMENT LETTER 24

Talburt, Tammy (COM)

From: Christine Kreps [redacted]
Sent: Tuesday, June 15, 2010 9:47 PM
To: COM EFSEC
Subject: Governor Gregoire must support Whistling Ridge

Categories: Yellow Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would be just what the environment needs. Wind energy is totally supported by me! EFSEC should recommend that Governor Gregoire support this project.

I support renewable energy, wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Christine Kreps
[redacted]

COMMENT LETTER 25

WR - DEIS
Public Comment #147

Talburt, Tammy (COM)

From: Tom Partin [redacted]
Sent: Wednesday, June 16, 2010 7:18 AM
To: COM EFSEC
Cc: 'Jason Spadaro'
Subject: Whistling Ridge Support

Categories: Yellow Category

I strongly endorse the Whistling Ridge Wind Energy Project. The Project has gone through the EIS process and found no significant impacts to wildlife, the scenic value of the Columbia Gorge Corridor or to other resources. The Northwest is in desperate need of other power sources and we can't be reliant on hydro-power in the decades to come. I am appalled that many of the groups who are opposed to this project are the same people calling for removal of dams on the Snake River. Where will we get our power in the future. Many of our AFRC members have located cogeneration power plants on their sites as efforts to supplement needed clean power here in the Northwest and we strongly support this effort by SDS Lumber to provide more green energy. Please help bring some common sense to the process and support the Whistling Ridge Wind Energy Project.

Tom Partin
[redacted]

COMMENT LETTER 26
Talburt, Tammy (COM)

WR - DEIS
Public Comment #148

From: wp farrell [redacted]
Sent: Wednesday, June 16, 2010 7:01 AM
To: COM EFSEC
Subject: Whistling Ridge Energy Project

Categories: Yellow Category

We are writing because we will be out of area for the meetings in Underwood and Stevenson. We are against the proposed Whistling Ridge Project for these following reasons:

The proposed site of these 400+ feet wind turbines is very close to the well populated communities of Underwood, Willard, and Mill A. We have read the concerns and complaints of the people of Bend, OR where a wind farm is already established. They are alarming and serious. People in this area have lived for generations with agriculture and forest production. Tourism and wineries have grown and flourished in the Gorge Scenic area in the past 25 years. The change of having a forest (even with logging) for a neighbor to having the zoning change to Industrial use will have a devastating affect on the whole community. While the winds here can be strong, they are unpredictable and unreliable. We're sure that the temptation of federal dollars for "green energy" is tempting to the state and county – but the few dollars that will trickle down to Skamania County are small when compared to the problems that will most likely arise. The jobs produced will be temporary construction jobs – the maintenance jobs to follow will be few. No tax money will come to Skamania County schools. Wind power is undergoing much research and development. To jump on the band wagon with the existing technology of HUGE turbines in populated areas is a mistake. In the future, we're sure there will be sleeker, smaller, more efficient turbines that will be more "user friendly" to local populations.

On a recent drive through the mid section of our country (Kansas, Colorado, Wyoming) we saw ONE wind farm the whole way – and it looked smaller than the ones already existing in eastern Oregon and Washington. The Norwest has done its part – we're given up our rivers to power production – we've given up land for thousands of wind turbines in the eastern parts of our states. The power produced by Whistling Ridge will be controlled by a power company located in Europe and the power will be exported to other parts of the country. We'll be left with the headaches and the hundreds of acres denuded to make space for these wind behemoths. Fire dangers will increase in this forest area. We demand that a hard, long look be given the decision to sanction this project. SAY NO!!! Pat & Linda Farrell

WR - DEIS
Public Comment #149

COMMENT LETTER 27
Talburt, Tammy (COM)

From: Dean Stevenson [redacted]
Sent: Wednesday, June 16, 2010 7:55 AM
To: COM EFSEC
Subject: Governor Gregoire must approve Whistling Ridge

Categories: Yellow Category

I disagree with the slanted view of the Friends of the Gorge regarding the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. This project has been studied for seven years and found to pose no wildlife impact and it is located entirely OUTSIDE the Gorge Scenic Area.
I respectfully disagree with Friends of the Gorge's position and ask that you approve Whistling Ridge.

Dean Stevenson
[redacted]

COMMENT LETTER 28
Talburt, Tammy (COM)

WR - DEIS
Public Comment #150

From: David McClain [redacted]
Sent: Wednesday, June 16, 2010 8:09 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Yellow Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would not have negative impacts to the environment. THe project is located on commercial timberland that have been subject to decades of intensive harvesting operations under a sustain yield forestry program regulated by the Washington Department of Natural Resources. I have reviewed the wildlife baseline studies and I have visited the site. There are no significant . sensitive wildlife and plant habitat areas associated with this project area. The ecology of this area is typical of a highly altered timber management property. Timber management operations will continue in this area for decades to come which is also evidence that the area is not currently or will it every evolve to a significant ecological resource area. It is a timber management area for industrial forest practices. Siting a wind farm in this area is an intelligent and appropriate compatible land use which will diversity the economic value of these timber lands and help to preserve these lands for timber production for decades to come. There is no evidence that the installation and operations of the proposed facility will have any significant impacts on sensitive or special status animal or plant species. The data and analysis by qualified third parties indicates that no significant impact will occur.

The Whistling Ridge Wind Farm is also outside of the Columbia River Gorge Natural Scenic Area. The Congressional intent of the Gorge Scenic Act was to allow for ongoing economic activity in areas adjacent to the Scenic Area regardless of the affect that these adjacent areas may have on the view from the scenic area. In other words, there was to be no buffer zones to the buffer zone already established by the Gorge Scenic Area boundary. Also I believe that the construction of the Whistling Ridge Wind Farm would not degrade the scenic beauty of the Columbia River Gorge National Scenic Area. As a point of law, EFSEC does not have the authorization to establish new exclusion zones such as buffers to the Gorge Scenic Area without additional authorization from either the legislature or the US Congress. Visual Impact on the Columbia River Gorge National Scenic Area should be an issue of consideration in any Environmental Impact Statement review, but the determination of significance of any impact is not capricious or arbitrary, it must be based on the rules that are in place today. Development outside of and adjacent to the Columbia River Gorge National Scenic Area is allowed under the law and as such visual impacts to the National Scenic Area are allowed because the proposed facility is not located within the Scenic Area.

I support renewable energy. I also supported and participated in the creation of Columbia River Gorge National Scenic Area which is national scenic treasure. The creation of the Scenic Area involved a significant public involvement process that carefully consider the location of the boundary of the Scenic Area. The potential for wind energy development in the Columbia River Gorge area was a consideration when those of us who put pen to paper and drew the boundary participated in the creation of the Scenic Area. This boundary was established to buffer the significant resources of the Scenic Area and the legislation that created the.Columbia River Gorge National Scenic Area clearly consider potential affects from development outside of the boundary and determined that such

development would not be subject to the Scenic Act. It is not EFSEC's role to substitute its judgment for that of the US Congress on this issue.

EFSEC must recommend that Governor Gregoire approve this project.

Sincerely,

David W. McClain

COMMENT LETTER 29

WR - DEIS
Public Comment #151

Talburt, Tammy (COM)

From: dean johnson [redacted]
Sent: Wednesday, June 16, 2010 8:28 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Yellow Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. EFSEC should recommend that Governor Gregoire allow this project.
This proposal is on a ridgeline because that is where it is WINDY. The project would disturb a small area of SOMEONE'S PRIVATE PROPERTY.

I support renewable energy.

dean johnson
[redacted]

COMMENT LETTER 30

WR - DEIS
Public Comment #153

Talburt, Tammy (COM)

From: Donna Enz [redacted]
Sent: Wednesday, June 16, 2010 8:57 AM
To: COM EFSEC
Subject: Whistling Ridge Energy Project

Categories: Yellow Category

We are asking that you don't make the Whistling Ridge Energy Project in Skamania County WA a testing ground for impacts on coniferous forests. The potential for devastating impacts to this area are real. This is not an appropriate site for a large scale wind project.

The 426 foot turbines will be seen in the center of the Columbia River Gorge National Scenic Area during the day and also at night because of the red blinking lights on the top of the turbines.

SDS has *understated* the visual affect on their maps which are meant to appeal to the public for support.

Land values in the surrounding area will decrease because of the visual pollution of 426 foot wind turbines and the noise, which studies have shown is a potential health hazard.

We ask you to please reject this SDS project.

Dan and Donna Enz
Gorge residents

COMMENT LETTER 31

WR - DEIS
Public Comment #154

Talburt, Tammy (COM)

From: Steve Bloom [redacted]
Sent: Wednesday, June 16, 2010 9:18 AM
To: COM EFSEC
Subject: Governor Gregoire must allow Whistling Ridge

Categories: Yellow Category

I am writing to support the wind project at Whistling Ridge.
This is an industrial forested area and has been subject to harvesting for decades and will continue in that capacity.
It is not sensitive habitat and it will not become sensitive habitat--it is industrial timber lands. There are no sensitive species and no sensitive habitat in or adjacent to the lands in question, so the impact of the wind farm will be insignificant.
The NIMBYs are concerned with the project being "near" the Columbia Scenic Gorge area. But, it isn't within the Gorge Area. And, thus, isn't subject by attack by the Friends of the Gorge on that account.
With the mess in the Gulf and President Obama's speech last night, we have to support non-fossil clean renewable sustainable energy like the Whistling Ridge wind project.

Steve Bloom

Steve Bloom
[redacted]

COMMENT LETTER 32

WR - DEIS
Public Comment #157

Talburt, Tammy (COM)

From: Victor Roberge [redacted]
Sent: Wednesday, June 16, 2010 10:07 AM
To: COM EFSEC
Subject: sds wind turbines/opposed

Categories: Yellow Category

i am completely opposed to any wind turbines that can be seen from the scenic gorge area. i am specifically opposed to the sds wind farms proposed. they harm wild life and destroy property values in surrounding areas, but they would also harm the scenic beauty of our area and along with that tourism that we depend on for our livings. please do not allow this company to destroy more of the gorge than it already has. victor roberge, 1600 jeanette rd, hood river or. 97031

COMMENT LETTER 33

WR - DEIS
Public Comment #159

Talburt, Tammy (COM)

From: Marlene Woodward [redacted]
Sent: Wednesday, June 16, 2010 11:34 AM
To: COM EFSEC
Subject: whistling redige project

Categories: Yellow Category

EFSEC
Washington State

We are writing in opposition to the Whistling Ridge Wind Energy Project. We live in Husum, Washington which is in the impact area of the project. We oppose the project for a number of reasons:

- Visual impact – Not only will it be an eyesore for residents of this area, it will also negatively impact tourism.
- Noise – The noise impact will be detrimental to the rural environment
- Impact on raptors - The wind turbines will negatively impact raptor habitat – some of which are listed as endangered species

We oppose the industrialization of rural areas especially an area that is designated as a national scenic area.

From an economic perspective, the wind farm is supposed to generate power for 20,000 homes. This seems like very few homes for the cost, environmental impact, and degradation of a rural landscape. What would the cost be of conservation efforts to save the equivalent about of energy? We would assume that it would cost far less to save an equivalent amount of power by practicing state of the art energy conservation measures than by generating new energy using wind turbines. Let's look at the real costs of wind power!

We are residents of the Columbia Gorge and we oppose this project.

Marlene and Thomas Woodward
[redacted]

COMMENT LETTER 34

WR - DEIS
Public Comment #161

Talburt, Tammy (COM)

From: Thomas Stevenson [redacted]
Sent: Wednesday, June 16, 2010 12:40 PM
To: COM EFSEC
Subject: Governor Gregoire should support Whistling Ridge

Categories: Yellow Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause NO significant negative impacts to sensitive wildlife and plant habitat and would not degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire support this project.
This proposal is not likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, even though this project is proposed along a forested ridgeline in the foothills of the Cascade Mountains. Whistling Ridge has been studied for seven years and found to pose no wildlife impacts.
Whistling Ridge is located outside the National Scenic Area and should not be subject to NSA concerns. Few if any turbines will be visible and this area of the Columbia River Gorge should be available to produce clean renewable energy.

I support renewable energy and I support the Whistling Ridge development adjacent to the Columbia River Gorge National Scenic Area.

I SUPPORT WHISTLING RIDGE AND WIND ENERGY IN THE GORGE.

Thomas Stevenson
[redacted]

COMMENT LETTER 35
Talburt, Tammy (COM)

WR - DEIS
Public Comment #163

From: Charles Hinman [redacted]
Sent: Wednesday, June 16, 2010 5:19 PM
To: COM EFSEC
Subject: Governor Gregoire must approve Whistling Ridge

Categories: Yellow Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. I support the proposed project because it will provide alternative energy so necessary should we hope to one day not have to rely on fossil fuels for our power. The EFSEC should recommend that Governor Gregoire approve this project.

Some other reasons that I support this proposal are that it will provide a broader tax base for the community benefitting all property owners and even benefitting those who rent their residences. Additionally, by lowering property taxes for individuals it would make special levies for schools, park districts and libraries more palatable to residents who otherise might feel overtaxed.

Also, this project will provide jobs to many locals who have taken classes at Columbia Gorge Community College specific to the wind energy field in hopes that they could remain in the area and find a family wage job.

I was happy to learn that the US Department of Fish and Wildlife has found that there would be no significant impact on wildlife as a result of this project.

The turbines and the handfull of lights from this development would be visible from the deck of my home which faces due west but these lights are minimal compared to the lights from downtown Hood River and the Heights of Hood River that are also in my viewscape. In other words OKIMBY..... OK in my backyard

I support renewable energy and I support this wind energy development.

Sincerely,

Charles Hinman
[redacted]

COMMENT LETTER 36

Talburt, Tammy (COM)

From: Dawn Stover [redacted]
Sent: Wednesday, June 16, 2010 5:52 PM
To: COM EFSEC
Subject: Comments on Whistling Ridge wind project DEIS
Attachments: BPA&EFSEC.doc; ATT4820280.htm; BPA_wind_map_2010.pdf; ATT4820281.htm; Countywindprojects6-7-10.pdf; ATT4820282.htm; WEST cumulative impacts 2010.pdf; ATT4820283.htm; Review of WEST Cum Impacts Analysis_051810.doc; ATT4820284.htm; wind farm impacts on vultures.pdf; ATT4820285.htm; Big Horn Wildlife Monitoring Study Final Report 061008_final.doc; ATT4820286.htm; Big Horn mortality_Smallwood.pdf; ATT4820287.htm; BENTEKStudy_How_Less_Became_More.pdf; ATT4820288.htm

Categories: Yellow Category

Please see attached.

June 16, 2010

BPA
Public Affairs Office – DKE-7
P.O. Box 14428
Portland, Oregon 97293-4428

EFSEC
905 Plum Street SE
Olympia, Washington 98504-3172

To Whom It May Concern:

I am writing to comment on the Whistling Ridge Energy Project Draft Environmental Impact Statement (DEIS). Please include my comments in the public record, and include my name on the mailing list for all future notices and decisions.

I have lived in the area of this proposed project for 18 years and have followed wind energy developments closely for most of that time, both here in the Columbia Gorge and nationally. I serve as an environmental representative on the technical advisory committees of three wind power projects in the area. I have participated in field visits to wind projects all over the West. I have a degree in biology and have read a great deal of the scientific literature pertaining to wildlife-turbine interactions. As someone who is well informed about both wind power and ecology, I have a number of concerns regarding the DEIS prepared for the Whistling Ridge Energy Project.

1. The evaluation of cumulative impacts is inadequate.

Under SEPA, EFSEC is required to consider whether multiple incremental impacts when considered together may cumulatively result in a significant adverse impact. WAC 197-11-792(2)(c)(iii). Unfortunately, the cumulative impacts analysis done for the Whistling Ridge DEIS only considered the impacts of 10 existing wind projects and three proposed wind projects. In fact, there are at least a dozen major wind projects constructed or proposed in Klickitat County alone, and more than 40 major wind projects constructed or proposed along the Columbia River east of Whistling Ridge.

The pace and scale of wind turbine construction in this region has been unprecedented. Only five years ago, an EIS prepared by Klickitat County (which lies immediately to the north and east of the Whistling Ridge site) predicted the construction of four major wind projects, with a total installed capacity of 1,000 megawatts, over a 20-year period. In actuality, 10 major wind projects with a total installed capacity of more than 1,100 megawatts have already been constructed in Klickitat County, and permits are pending for another 500 megawatts. In other words, Klickitat County has seen twice as much wind development in five years as was predicted for 20 years.

Besides the many projects in Klickitat County, the BPA's interconnection queue shows approximately 35 additional projects in other nearby counties that are either permitted or awaiting permits. Other projects are proposed but not yet shown in the BPA queue. From Whistling Ridge to Walla Walla, wind developers are erecting (or proposing to erect) strings of turbines that stretch for more than 100 miles along the ridges on both sides of the Columbia River.[1]

In Klickitat County, almost every inch of ridge-top land above the Columbia from Dallesport eastward is already under lease to wind developers.[2] Additional projects are proposed but not yet shown on this map because permit applications have not been filed.

The environmental impacts analysis for Whistling Ridge must consider the regional impacts of more than 40 major projects within the Columbia Plateau ecoregion. The scale and sprawl of this wind development has significant cumulative impacts on wildlife, habitat, scenic values and other natural resources.

The notion that projects in eastern Klickitat County are "too far away...to result in cumulative impacts" is mistaken. Many birds and bats travel long distances during migration, foraging, and other components of their life cycle. Also, genetic exchanges between individuals of any given species are essential for maintaining population viability.

More important, the notion that projects are too far away to have cumulative impacts is mistaken because significant adverse impacts typically occur at the population level, rather than at the level of individual animals affected by a particular wind project. While different wind projects may affect different individuals, the cumulative effect of combined mortalities at many contiguous sites can be population-level impacts—and perhaps even local extinctions over time.

The DEIS erred in relying on a cumulative impacts analysis published in 2007 for the Mid-Atlantic Highlands. Not only is the Mid-Atlantic region completely different from the Whistling Ridge site in habitat and species composition, but the 2007 study was published before the pace of wind development began to rapidly accelerate. It is inappropriate to base any cumulative impacts analysis for Whistling Ridge on a study done under very different circumstances and in a very different place.

It is also inappropriate to dismiss the cumulative impacts of wind turbines on wildlife because of other man-made effects such as mortalities from buildings and cats. These mortalities don't necessarily affect the same species as wind turbines do: For example, cats do not kill golden eagles, and skyscrapers do not kill species that make their homes

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[1] **Current and Proposed Wind Project Interconnections to BPA Transmission Facilities**, Bonneville Power Administration, last updated May 10, 2010, *http://www.transmission.bpa.gov/PlanProj/Wind/documents/BPA_wind_map_2010.pdf*

[2] **Klickitat County Wind Projects**, Klickitat County, last updated June 7, 2010, *http://klickitatcounty.org/Planning/default.asp?fCategoryIDSelected=1258566697*

in remote rural areas. More important, these man-made impacts do not justify placing additional pressures on sensitive bird and bat populations from new man-made structures in more remote areas where wind projects may be the leading source of avian and bat fatalities. They merely illustrate the importance of minimizing any additional mortalities caused by wind projects. Two wrongs do not make a right.

The DEIS provides no evidence to substantiate the applicant's assertion that the proposed Whistling Ridge wind project will not cause mortality to birds and bats in sufficient quantities to affect population viability. The analysis does not include any reasonable estimates of current population levels of sensitive species, nor of the threshold population levels required to maintain viability.

2. The WEST report prepared for the Klickitat County Planning Department is not applicable to the proposed Whistling Ridge Energy Project, and cannot be relied on to evaluate cumulative impacts.

The report prepared by Western EcoSystems Technology, Inc. (WEST) purports to be a cumulative impacts analysis for Klickitat County.[3] Unfortunately, this report sheds little light on the cumulative impacts of wind power development on wildlife in Klickitat County, and it is even less relevant to a project proposed for Skamania County.

As the WEST report's title suggests, the Columbia Plateau Ecoregion is located in eastern Washington and Oregon, which have completely different plant and animal communities than the western Washington site proposed for the Whistling Ridge wind project. All of the projects evaluated in the WEST report are located in arid and un-forested lands, whereas Whistling Ridge is located in a coniferous forest that receives much more precipitation and has a much different plant and animal population. Impacts of wind projects on birds and bats are extremely site-specific, and because of that the WEST study has little applicability to the Whistling Ridge proposal. It is no more applicable than studies from the Altamont Pass Wind Resources Area in California, where significant population-level impacts on birds have been documented; or from the forested Mountaineer wind project in Appalachia, where significant population-level impacts on bats have been documented.

The WEST report contains fatality monitoring data from 12 projects around the Columbia Plateau Ecoregion. Only *one* of those projects, Big Horn, is actually located in Klickitat County—and the results from Big Horn show much higher raptor fatality rates than anywhere else in the Pacific Northwest. In other words, the WEST report underestimates the impacts of wind projects in Klickitat County by merging the Big Horn data with results from less lethal projects elsewhere in the region.

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[3] **Avian, Bat and Habitat Cumulative Impacts Associated with Wind Energy Development in the Columbia Plateau Ecoregion of Eastern Washington and Oregon**, Prepared for Klickitat County Planning Department by Gregory D. Johnson and Wallace P. Erickson, Western EcoSystems Technology, Inc., February 2010

The WEST report also looked at 24 projects in the Pacific Northwest for which pre-construction estimates of avian use are available. Here too, the results from Klickitat County show a much higher likelihood of avian impacts than elsewhere in the region. Of the 24 projects evaluated in the report, the seven projects located in Klickitat County had much higher estimated use by both raptors and by birds of all types. For example, the highest raptor use estimated anywhere in our region is at the Linden Ranch in Klickitat County. Raptor use there is estimated to be 2.5 times the average for the Columbia Plateau ecoregion.

In other words, the WEST report does *not* give an accurate picture of cumulative impacts from expanding wind power here in Klickitat County, much less any indications of cumulative impacts to be expected in Skamania County. To the contrary, the WEST report uses data from projects in other parts of Oregon and eastern Washington to underestimate how many birds—especially raptors—are likely to be killed here.

The WEST report has another fundamental flaw. To arrive at a prediction of cumulative fatalities, the report's authors averaged existing fatalities in the region and then compared those averages with estimates of regional population size based on breeding bird surveys provided by the Partners in Flight North American Landbird Conservation Plan. However, the Partners in Flight estimates include relatively large standard errors, and are not accurate enough to serve as reliable population indicators. The estimates used in the WEST report were designed for detecting long-term population trends but not for estimating population size.

As Dr. K. Shawn Smallwood, an ecologist who is one of the nation's leading experts on the interactions between wildlife and wind turbines, points out in a review of the WEST report, the estimates from Partners in Flight are "unsuitable for the use that Johnson and Erickson made of them."[4] Other researchers have pointed out this flaw but WEST continues to rely on these unsuitable estimates.

Smallwood further writes: "No studies or monitoring programs have been designed or implemented in the US to document wind energy-related population declines of any bird species. Most fatality monitoring programs have been much too brief to document declines, lasting one or two years. All monitoring programs have been too crude to document declines, and the majority of post-construction studies have not been designed to estimate population size of any bird species. Therefore, Johnson and Erickson's statement about wind energy impacts was misleading."

3. The DEIS underestimates the impacts of wind projects on long-lived raptor species.

Research on wildlife-turbine interactions in the Pacific Northwest and elsewhere has focused almost exclusively on estimating mortality rates. Although studies dealing with

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[4] **Review of Cumulative Impacts Analysis of Wind Energy Expansion on the Columbia Plateau**, K. Shawn Smallwood, May 18, 2010.

impacts on rare and endangered species are scarce, there is growing evidence that wind projects increase the extinction probability of long-lived species through incremental increases in mortality rates. In other words, while wind turbines may kill a relatively small number of individual birds during any given year, for rare and endangered species this increase can quickly add up to population extinction. A recently published study found that even though wind projects may cause only slight reductions in the survival of birds living in an area associated with wind turbines, those reductions can strongly impact the population viability of long-lived species—and can greatly reduce the time to extinction for those species.[5]

That is the situation we are currently seeing in Klickitat County with species such as ferruginous hawks. Wind projects have already killed at least three ferruginous hawks locally, and there are very few of these animals remaining. There have been no studies in Skamania County, Klickitat County, or anywhere else in the Pacific Northwest to determine the long-term impact of wind projects. Such studies are necessary in order to determine the cumulative impacts of continued industrial wind energy development at the scale now being proposed for Klickitat County.

As mentioned above, wind projects pose a threat to long-lived raptors that are already rare or endangered. There are ways to mitigate this problem, as pointed out in the scientific study cited above: "Unlike other non-natural causes of mortality difficult to eradicate or control, wind-farm fatalities can be lowered by powering down or removing risky turbines and/or farms, and by placing them outside areas critical for endangered birds."

The applicant has provided insufficient evidence to determine that the project will not have any impact on species viability. Currently, the Whistling Ridge proposal includes no provisions for temporary or permanent shutdowns of problem turbines, nor does it place turbines at a reasonable distance from important bird areas such as Spotted Owl Special Emphasis Areas. These provisions must be included to ensure that long-lived raptors and other species of concern are not driven to extinction locally.

In response to unavoidable impacts to wildlife, the applicant proposes "mitigations" including raptor nest surveys, post-construction monitoring studies, and the formation of a Technical Advisory Committee to oversee these activities. None of these actions qualify as mitigation measures. Mitigations are measures that remedy a problem. The applicant is merely proposing to study the problem, not to remedy it.

Mitigation cannot be left to a Technical Advisory Committee that is organized and overseen by the developer. I have served on several Technical Advisory Committees, and

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[5] **Large Scale Risk-Assessment of Wind-Farms on Population Viability of a Globally Endangered Long-Lived Raptor Species.** Martina Carrete, José A. Sánchez-Zapata, José R. Benítez, Manuel Lobón, and José A. Donázar in *Biological Conservation* 142:2954-2961, 2009.

while such committees may recommend mitigation measures they are not typically empowered to require implementation of any of these measures.

4. Pre-construction estimates of avian and bat fatalities have not proved reliable.

Although no scientists have done a thorough comparison of pre-construction and post-construction mortality estimates, there is plenty of anecdotal evidence that post-construction mortalities often greatly exceed pre-construction estimates made using the same methodology as has been employed for the Whistling Ridge wind project.

For example, the Environmental Impact Statement (EIS) prepared prior to adoption of the Energy Overlay Zone in Klickitat County grossly underestimated the level of wildlife fatalities likely to result from wind development. At all of the wind projects in Klickitat County where monitoring has been completed or is under way, reports prepared by wildlife consultants show that fatalities of raptors and bats are far in excess of what was anticipated by the EIS. Whistling Ridge is using the same consultants and methodology as Klickitat County for its pre-construction fatality estimates.

At Big Horn, the first large wind project built in Klickitat County, the developer's wildlife consultants did a full year of monitoring at 100 percent of the turbines, which makes this one of the most comprehensively monitored wind projects anywhere in the United States. The results of that monitoring study show that raptor fatalities are at least eight times higher than what the developer, PPM/Iberdrola, projected.[6]

An independent study of Big Horn's monitoring results written by Dr. Smallwood concluded that raptor fatalities are up to 16 times higher than predicted prior to construction.[7] Big Horn also kills twice as many bats as anticipated, according to fatality monitoring reports. Monitoring studies at other wind projects in Klickitat County are not yet completed, but the preliminary results from those projects suggest even higher fatality rates.

The above-cited independent scientific analysis based on the results from Big Horn (the only project in Klickitat County where fatality monitoring has been completed) reported a conservative estimate of 243 raptor fatalities annually in Klickitat County. That estimate of 243 raptor fatalities is for a level of development that does not exceed 1,000 megawatts. At its current rate of wind development, Klickitat County is likely to reach a level of 2,000 megawatts or more within the next year or so. For raptors in Klickitat County, these numbers are rapidly approaching population-level impacts. "There is probably no other human source of mortality that comes close to these levels," writes Dr. Smallwood.

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[6] **Big Horn Wind Power Project Wildlife Fatality Monitoring Study 2006-2007.** Prepared for PPM Energy and Big Horn Wind Project Technical Advisory Committee by Northwest Wildlife Consultants, Inc., 2008.

[7] **Avian and Bat Mortality at the Big Horn Wind Energy Project, Klickitat County, Washington.** K. Shawn Smallwood, 2008.

5. The DEIS underestimates potential impacts on northern spotted owls and other avian species.

The proposed project falls within critical habitat for the northern spotted owl, a species that is not only endangered but has continued to decline since the adoption of the Washington Department of Natural Resources' Habitat Conservation Plan for the species. This species has continued to decline on federal lands, which makes the state's HCP more important than ever. There are only an estimated 500 northern spotted owl pairs remaining in all of Washington state.

Even as the state's Habitat Conservation Plan is failing miserably, the applicant is proposing to undermine that plan by allowing commercial-scale energy development within a Spotted Owl Special Emphasis Area. A commercial wind energy project is *not* appropriate for habitat that is designated as a nesting, roosting and foraging area for a federally endangered species.

In materials distributed to the public prior to the mid-June 2010 hearings, SDS Lumber writes: "After years of timber harvest, there's no suitable habitat for the bird." It is ironic that the applicant is pointing the finger at its own destructive timber practices to justify further risk to northern spotted owls.

Regardless of whether spotted owls are currently nesting on or near this property, as they did in recent history, this area is designated as prime potential habitat for the species. The fact that Washington's Habitat Conservation Plan for spotted owls is not increasing the numbers of reproductive pairs makes it all the more important to restore this species' habitat—not to damage it even further.

The Environmental Impact Statement commissioned by Klickitat County for its Energy Overlay Zone stated (on page 2-15 of the Final EIS) that "forested areas host higher concentrations of owl and other sensitive species habitats."[8] The EIS recommended that areas with high concentrations of forested habitats be excluded from the Energy Overlay Zone because of their "higher potential for use by sensitive species and avian species likely to be impacted by wind turbines." This sensitive forested habitat is exactly what is being proposed for development at Whistling Ridge.

Spotted owls are not the only species likely to be significantly impacted by the proposal. Klickitat County's Energy Overlay EIS also found high use of forested habitats by other raptors. The SDS map for the proposed project shows ridge-top locations for turbines, and these are typically the worst possible locations from an avian perspective—i.e., likely to result in the highest number of bird collisions.

6. The DEIS fails to assess compliance with state and federal laws protecting bald eagles, golden eagles, migratory birds, and endangered species.

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[8] **Klickitat County Energy Overlay Final Environmental Impact Statement**, September 2004.

There are reports of bald eagles and bald eagle nests at the proposed wind site. Yet there is no evidence that the proposed project will be in compliance with the state's Bald Eagle Protection Act, RCW chapter 77.12, and regulations associated with this act.

Nor is there any evidence that the proposed project will be in compliance with the federal Bald and Golden Eagle Protection Act, 16 USC § 668-668(d). This act prohibits any person, association, partnership or corporation from taking a bald or golden eagle at any time or by any manner without a permit. A permit may be issued only if the take would be compatible with the preservation of the species.

There is no evidence in the DEIS that the proposed project will be in compliance with the federal Migratory Bird Treaty Act (MBTA), 16 USC §§ 703-712. The MBTA requires that the U.S. Fish & Wildlife Service take enforcement against "any person, association, partnership or corporation" that "by any means or in any manner" pursues, hunts, takes, captures, kills, or attempts to take, capture or kill a migratory bird or any part, nest or eggs of any migratory bird. Under the MBTA, a corporation may take or kill a migratory bird only if the U.S. Fish & Wildlife Service determines that the take or kill is compatible with migratory bird treaties. This determination must include an evaluation of the bird's species abundance and distribution, as well as its migratory and breeding habits. The killing of a single migratory bird is sufficient to create criminal liability, and does not need to be intentional.

There is no evidence in the DEIS that the proposed project will be in compliance with the federal Endangered Species Act (ESA) of 1973, 16 USC §§ 1531-1544. Under the ESA, "take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Section 9 of the ESA prohibits any actions that would "take" an endangered species, as well as actions that would cause an act constituting a "take." The Ninth Circuit has held that "a habitat modification which significantly impairs the breeding and sheltering of a protected species amounts to 'harm' under the ESA.

It seems quite possible that the proposed Whistling Ridge wind project may kill a bald eagle, a migratory bird, or an endangered species. The DEIS must evaluate the likelihood of each of these possibilities, and whether Incidental Take Permits are required from the U.S. Fish & Wildlife Service. A recent court ruling in West Virginia has made it clear that such permits are required under federal law when a wind project is likely to kill any individual animals protected by the Endangered Species Act.

7. The DEIS erred in its analysis of the regional need for new sources of renewable energy.

The DEIS cites the Draft Sixth Northwest Power Plan released in September 2009 by the Northwest Power and Conservation Council. What the DEIS fails to quantify is that this 20-year energy plan for our region concluded that, although population and energy demands will continue to grow in the Pacific Northwest, we can meet 80 percent of expected future energy demands through conservation efforts and improved energy

efficiency. Conservation efforts not only have less environmental impact than building new energy sources, they are also considerably less expensive.

Only about 20 percent of future needs must come from new sources of energy, according to the Council. And shown above, with 40 wind projects already constructed or proposed for this region, there are plenty of new sources to meet these needs. There is no demonstrated need for Whistling Ridge.

The dirty little secret of wind power in the Columbia Plateau Ecoregion is that most of the electricity being generated here by wind turbines is not needed or used in the Pacific Northwest. Instead it is sold to utilities in California. There is *regional* need for new power sources; there is simply a *California* demand for electricity generated in Washington and Oregon.

On page 3-91 of the DEIS, the applicant claims that the Klickitat County Energy Overlay Zone Final EIS "recently evaluated the projected energy demand in Klickitat County, Washington, the county immediately adjacent to Skamania County." (In fact, this evaluation is already more than six years old). The DEIS then mentions the EIS projection that "four wind power projects with total generating capacity of 1,000 MW" will be developed in Klickitat County by 2024.

In fact, Klickitat County has already approved more than a dozen projects, with a total generating capacity of almost 2,000 megawatts. Rather than suggesting that more energy is needed regionally, this rapid development of wind power in Klickitat County indicates that more than enough wind power is already under development to meet the region's energy needs.

8. The DEIS fails to estimate the direct and cumulative impacts of this project on the Northwest power grid.

The breaktaking pace of wind development along the Columbia River has created serious challenges for BPA and the regional energy grid. There are limits to the amount of wind power that can be integrated into the grid, and we are already at or near these limits. BPA has expressed concerns about how it can integrate more than 6,000 megawatts of wind power into the grid, yet the DEIS fails to analyze these constraints and how they will be affected by the construction of yet another wind project.

Adding more wind power capacity to the grid requires not only new transmission lines but also new storage capability, because wind is an intermittent power source. Typically wind projects operate at only about 30 percent of their total generating capacity, which means that 70 percent of the time a backup power source must be available.

The DEIS has failed to analyze the environmental impacts of the proposed backup power source for Whistling Ridge. For example, if hydropower will be the backup, the DEIS must consider the indirect impacts of this project on fish, irrigation, navigation and other drawdown impacts.

If backup power will be provided by a natural-gas-fired power plant, the impacts of that power plant should be considered along with the impacts of the wind project. Williams is proposing a new gas line for the Whistling Ridge area, and the substation and transmission inter-tie lines proposed for the Whistling Ridge area could signal the advent of additional power plants in the area. These must be evaluated along with impacts of the infrastructure currently being proposed.

A recent study in Colorado found that wind power's supposed carbon emissions benefits are not being realized, because of the requirement for conventionally-generated backup power.[9] Because all coal-fired power plants and some natural-gas-fired power plants produce greater emissions when they act as backup systems for wind power, thanks to inefficiencies associated with cycling on and off, the benefits of wind power in reducing carbon emissions are reduced.

Contrary to what the DEIS states, there is no evidence that the Whistling Ridge project will have a beneficial impact on air quality in the Columbia Gorge vicinity. No fossil-fuel-fired projects will be taken offline as a result. In fact, backup power from fossil-fuel-fired projects may be required for those times when the wind is not blowing.

Thank you for the opportunity to comment on this project.

Sincerely,

Dawn Stover
[redacted]

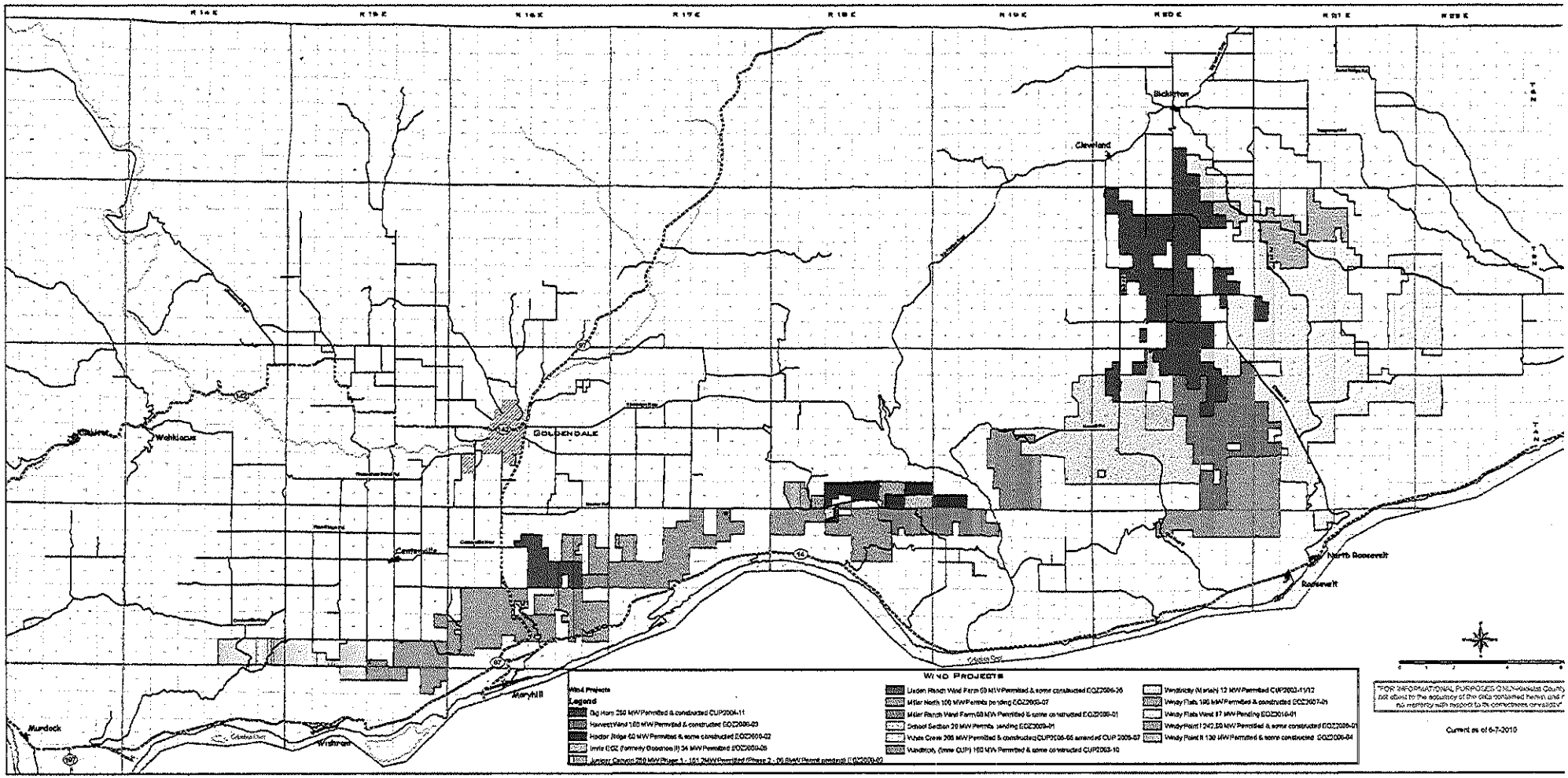
[9] **How Less Became More...Wind, Power and Unintended Consequences in the Colorado Energy Market**, Prepared by Bentek Energy LLC for the Independent Petroleum Association of Mountain States, April 16, 2010.

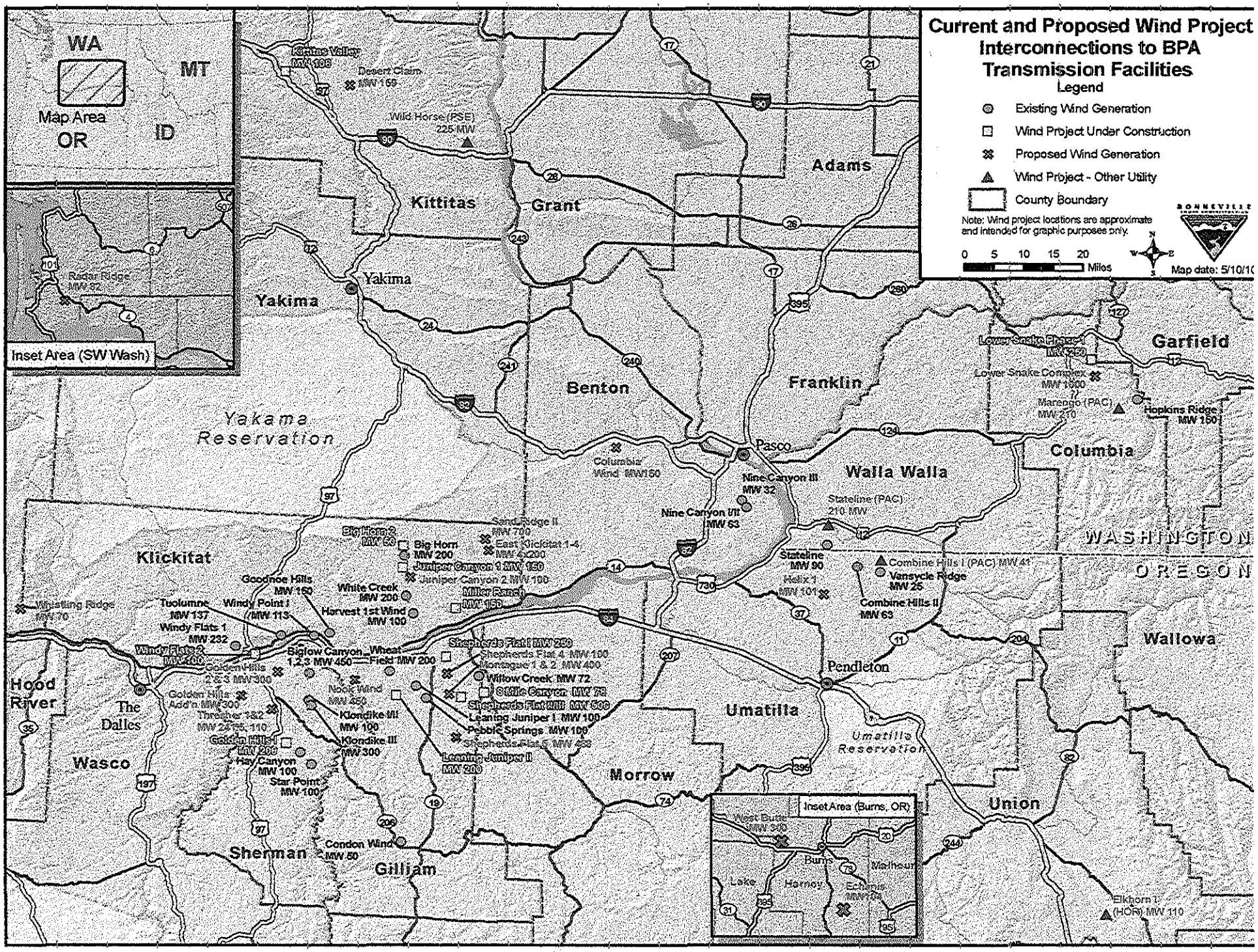
Dawn Stover

[redacted]

WR - DEIS
Public Comment #204

Klickitat County Wind Projects




Current and Proposed Wind Project Interconnections to BPA Transmission Facilities
Legend
Existing Wind Generation
Wind Project Under Construction
Proposed Wind Generation
Wind Project - Other Utility
County Boundary
Note: Wind project locations are approximate and intended for graphic purposes only.
0 5 10 15 20 Miles
Map date: 5/10/10
WA
MT
OR
ID
Map Area
Inset Area (SW Wash)
Inset Area (Burns, OR)
Kittitas Valley MW 108
Desert Claim MW 169
Wild Horse (PSE) 225 MW
Radar Ridge MW 82
Yakima
Kittitas
Grant
Adams
Yakima Reservation
Benton
Franklin
Columbia
Garfield
Walla Walla
Lower Snake Phase 1 MW 300
Lower Snake Complex MW 1000
Marengo (PAC) MW 210
Hopkins Ridge MW 150
Columbia Wind MW150
Pasco
Nine Canyon III MW 32
Nine Canyon I/II MW 63
Stateline (PAC) 210 MW
Stateline MW 90
Combine Hills I (PAC) MW 41
Vansycle Ridge MW 25
Combine Hills II MW 63
Helix I MW 101
Sand Ridge II MW 700
Big Horn 2 MW 50
Big Horn MW 200
East Kicktat 1-4 MW 4,200
Juniper Canyon 1 MW 150
Juniper Canyon 2 MW 100
Miller Ranch MW 165
White Creek MW 200
Harvest 1st Wind MW 100
Goodnoe Hills MW 150
Windy Point I MW 113
Tuolumne MW 137
Windy Flats 1 MW 232
Windy Flats 2 MW 500
Whistling Ridge MW 70
Klickitat
Big Horn Wheat Field MW 200
Shepherds Flat I MW 259
Shepherds Flat 4 MW 100
Montague 1 & 2 MW 400
Willow Creek MW 72
S Mile Canyon MW 78
Shepherds Flat III MW 500
Leaning Juniper I MW 100
Pebble Springs MW 100
Shepherds Flat 5 MW 433
Leaning Juniper II MW 200
Nolin Wind MW 350
Klondike I/II MW 100
Klondike III MW 300
Golden Hills 2&3 MW 300
Golden Hills Add'n MW 300
Thresher 1&2 MW 24?5, 110
Golden Hills I MW 200
Hay Canyon MW 100
Star Point MW 100
Condon Wind MW 50
Hood River
The Dalles
Wasco
Sherman
Gilliam
Morrow
Umatilla
Umatilla Reservation
Pendleton
Wallowa
Union
WASHINGTON
OREGON
West Butte MW 300
Burns
Lake
Harney
Malheur
Echanis MW 104
Elkhorn I (HOR) MW 110

From: Dawn Stover [redacted]
Sent: Tuesday, July 27, 2010 11:18 AM
To: Montano,Andrew M - KEC-4; stephen.posner@commerce.wa.gov
Subject: Whistling Ridge DEIS comments from Dawn Stover

Attachments: BPAEFSEC2.doc; ATT00001.htm
Hi Andrew and Stephen,

I am submitting my expanded comments by email. I tried using the BPA online system earlier but it didn't work for me.

Thanks for your assistance.
Dawn

July 27, 2010

BPA
Public Affairs Office – DKE-7
P.O. Box 14428
Portland, Oregon 97293-4428

EFSEC
905 Plum Street SE
Olympia, Washington 98504-3172

To Whom It May Concern:

I am writing to comment on the Whistling Ridge Energy Project Draft Environmental Impact Statement (DEIS). Please include my comments in the public record, and include my name on the mailing list for all future notices and decisions.

I have lived in the area of this proposed project for 18 years and have followed wind energy developments closely for most of that time, both here in the Columbia Gorge and nationally. I serve as an environmental representative on the technical advisory committees of three wind power projects in the area. I have participated in field visits to wind projects all over the West. I have a degree in biology and have read a great deal of the scientific literature pertaining to wildlife-turbine interactions. As someone who is well informed about both wind power and ecology, I have a number of concerns regarding the DEIS prepared for the Whistling Ridge Energy Project.

1. The evaluation of cumulative impacts is inadequate.

Under SEPA, EFSEC is required to consider whether multiple incremental impacts when considered together may cumulatively result in a significant adverse impact. WAC 197-11-792(2)(c)(iii). Unfortunately, the cumulative impacts analysis done for the Whistling Ridge DEIS only considered the impacts of 10 existing wind projects and three proposed wind projects. In fact, there are at least 15 major wind projects constructed or proposed in Klickitat County alone, and more than 45 major wind projects constructed or proposed along the Columbia River east of Whistling Ridge.

The pace and scale of wind turbine construction in this region has been unprecedented. Only five years ago, an EIS prepared by Klickitat County (which lies immediately to the north and east of the Whistling Ridge site) predicted the construction of four major wind projects, with a total installed capacity of 1,000 megawatts, over a 20-year period. In actuality, 10 major wind projects with a total installed capacity of more than 1,100 megawatts have already been constructed in Klickitat County, and permits are pending for another 500 megawatts. In other words, Klickitat County has seen twice as much wind development in five years as was predicted for 20 years.

Besides the many projects in Klickitat County, the BPA's interconnection queue shows approximately 35 additional projects in other nearby counties that are either permitted or awaiting permits. Other projects are proposed but not yet shown in the BPA queue. From Whistling Ridge to Walla Walla, wind developers are erecting (or proposing to erect) strings of turbines that stretch for more than 100 miles along the ridges on both sides of the Columbia River.[1]

In Klickitat County, almost every inch of ridge-top land above the Columbia from Dallesport eastward is already under lease to wind developers.[2] Additional projects are proposed but not yet shown on this map because permit applications have not been filed.

The environmental impacts analysis for Whistling Ridge must consider the regional impacts of more than 40 major projects within the Columbia Plateau ecoregion. The scale and sprawl of this wind development has significant cumulative impacts on wildlife, habitat, scenic values and other natural resources.

The notion that projects in eastern Klickitat County are "too far away…to result in cumulative impacts" is mistaken. Many birds and bats travel long distances during migration, foraging, and other components of their life cycle. Also, genetic exchanges between individuals of any given species are essential for maintaining population viability.

More important, the notion that projects are too far away to have cumulative impacts is mistaken because significant adverse impacts typically occur at the population level, rather than at the level of individual animals affected by a particular wind project. While different wind projects may affect different individuals, the cumulative effect of combined mortalities at many contiguous sites can be population-level impacts—and perhaps even local extinctions over time.

The DEIS erred in relying on a cumulative impacts analysis published in 2007 for the Mid-Atlantic Highlands. Not only is the Mid-Atlantic region completely different from the Whistling Ridge site in habitat and species composition, but the 2007 study was published before the pace of wind development began to rapidly accelerate. It is inappropriate to base any cumulative impacts analysis for Whistling Ridge on a study done under very different circumstances and in a very different place.

It is also inappropriate to dismiss the cumulative impacts of wind turbines on wildlife because of other man-made effects such as mortalities from buildings and cats. These mortalities don't necessarily affect the same species as wind turbines do: For example, cats do not kill golden eagles, and skyscrapers do not kill species that make their homes

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[1] **Current and Proposed Wind Project Interconnections to BPA Transmission Facilities**, Bonneville Power Administration, last updated May 10, 2010, *http://www.transmission.bpa.gov/PlanProj/Wind/documents/BPA_wind_map_2010.pdf*

[2] **Klickitat County Wind Projects**, Klickitat County, last updated June 7, 2010, *http://klickitatcounty.org/Planning/default.asp?fCategoryIDSelected=1258566697*

in remote rural areas. More important, these man-made impacts do not justify placing additional pressures on sensitive bird and bat populations from new man-made structures in more remote areas where wind projects may be the leading source of avian and bat fatalities. They merely illustrate the importance of minimizing any additional mortalities caused by wind projects. Two wrongs do not make a right.

The DEIS provides no evidence to substantiate the applicant's assertion that the proposed Whistling Ridge wind project will not cause mortality to birds and bats in sufficient quantities to affect population viability. The analysis does not include any reasonable estimates of current population levels of sensitive species, nor of the threshold population levels required to maintain viability.

2. The DEIS fails to address the potential expansion of the Whistling Ridge project onto Washington Department of Natural Resources public lands in Klickitat County.

The applicant has previously indicated plans to expand the project into Klickitat County, and applied for a lease from DNR to do so. These plans should be evaluated as part of this project, rather than piecemealed for later consideration.

3. The WEST report prepared for the Klickitat County Planning Department is not applicable to the proposed Whistling Ridge Energy Project, and cannot be relied upon to evaluate cumulative impacts.

The report prepared by Western EcoSystems Technology, Inc. (WEST) purports to be a cumulative impacts analysis for Klickitat County.[3] Unfortunately, this report sheds little light on the cumulative impacts of wind power development on wildlife in Klickitat County, and it is even less relevant to a project proposed for Skamania County.

As the WEST report's title suggests, the Columbia Plateau Ecoregion is located in eastern Washington and Oregon, which have completely different plant and animal communities than the western Washington site proposed for the Whistling Ridge wind project. All of the projects evaluated in the WEST report are located in arid and un-forested lands, whereas Whistling Ridge is located in a coniferous forest that receives much more precipitation and has a much different plant and animal population. Impacts of wind projects on birds and bats are extremely site-specific, and because of that the WEST study has little applicability to the Whistling Ridge proposal. It is no more applicable than studies from the Altamont Pass Wind Resources Area in California, where significant population-level impacts on birds have been documented; or from the forested

[3] **Avian, Bat and Habitat Cumulative Impacts Associated with Wind Energy Development in the Columbia Plateau Ecoregion of Eastern Washington and Oregon**, Prepared for Klickitat County Planning Department by Gregory D. Johnson and Wallace P. Erickson, Western EcoSystems Technology, Inc., February 2010

Mountaineer wind project in Appalachia, where significant population-level impacts on bats have been documented.

The WEST report contains fatality monitoring data from 12 projects around the Columbia Plateau Ecoregion. Only *one* of those projects, Big Horn, is actually located in Klickitat County—and the results from Big Horn show much higher raptor fatality rates than anywhere else in the Pacific Northwest. In other words, the WEST report underestimates the impacts of wind projects in Klickitat County by merging the Big Horn data with results from less lethal projects elsewhere in the region.

The WEST report also looked at 24 projects in the Pacific Northwest for which pre-construction estimates of avian use are available. Here too, the results from Klickitat County show a much higher likelihood of avian impacts than elsewhere in the region. Of the 24 projects evaluated in the report, the seven projects located in Klickitat County had much higher estimated use by both raptors and by birds of all types. For example, the highest raptor use estimated anywhere in our region is at the Linden Ranch in Klickitat County. Raptor use there is estimated to be 2.5 times the average for the Columbia Plateau ecoregion.

In other words, the WEST report does *not* give an accurate picture of cumulative impacts from expanding wind power here in Klickitat County, much less any indications of cumulative impacts to be expected in Skamania County. To the contrary, the WEST report uses data from projects in other parts of Oregon and eastern Washington to underestimate how many birds—especially raptors—are likely to be killed here.

The WEST report has another fundamental flaw. To arrive at a prediction of cumulative fatalities, the report's authors averaged existing fatalities in the region and then compared those averages with estimates of regional population size based on breeding bird surveys provided by the Partners in Flight North American Landbird Conservation Plan. However, the Partners in Flight estimates include relatively large standard errors, and are not accurate enough to serve as reliable population indicators. The estimates used in the WEST report were designed for detecting long-term population trends but not for estimating population size.

As Dr. K. Shawn Smallwood, an ecologist who is one of the nation's leading experts on the interactions between wildlife and wind turbines, points out in a review of the WEST report, the estimates from Partners in Flight are "unsuitable for the use that Johnson and Erickson made of them." [4] Other researchers have pointed out this flaw but WEST continues to rely on these unsuitable estimates.

Smallwood further writes: "No studies or monitoring programs have been designed or implemented in the US to document wind energy-related population declines of any bird species. Most fatality monitoring programs have been much too brief to document

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[4] **Review of Cumulative Impacts Analysis of Wind Energy Expansion on the Columbia Plateau**, K. Shawn Smallwood, May 18, 2010.

declines, lasting one or two years. All monitoring programs have been too crude to document declines, and the majority of post-construction studies have not been designed to estimate population size of any bird species. Therefore, Johnson and Erickson's statement about wind energy impacts was misleading."

There is no peer-reviewed science in the DEIS submitted by the applicant. Instead the applicant relies on WEST, a wind industry contractor whose work has not been independently reviewed.

4. The DEIS underestimates the impacts of wind projects on long-lived raptor species.

Research on wildlife-turbine interactions in the Pacific Northwest and elsewhere has focused almost exclusively on estimating mortality rates. Although studies dealing with impacts on rare and endangered species are scarce, there is growing evidence that wind projects increase the extinction probability of long-lived species through incremental increases in mortality rates. In other words, while wind turbines may kill a relatively small number of individual birds during any given year, for rare and endangered species this increase can quickly add up to population extinction. A recently published study found that even though wind projects may cause only slight reductions in the survival of birds living in an area associated with wind turbines, those reductions can strongly impact the population viability of long-lived species—and can greatly reduce the time to extinction for those species.[5]

That is the situation we are currently seeing in Klickitat County with species such as ferruginous hawks. Wind projects have already killed at least three ferruginous hawks locally, and there are very few of these animals remaining. There have been no studies in Skamania County, Klickitat County, or anywhere else in the Pacific Northwest to determine the long-term impact of wind projects. Such studies are necessary in order to determine the cumulative impacts of continued industrial wind energy development at the scale now being proposed for Klickitat County.

As mentioned above, wind projects pose a threat to long-lived raptors that are already rare or endangered. There are ways to mitigate this problem, as pointed out in the scientific study cited above: "Unlike other non-natural causes of mortality difficult to eradicate or control, wind-farm fatalities can be lowered by powering down or removing risky turbines and/or farms, and by placing them outside areas critical for endangered birds."

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[5] **Large Scale Risk-Assessment of Wind-Farms on Population Viability of a Globally Endangered Long-Lived Raptor Species.** Martina Carrete, José A. Sánchez-Zapata, José R. Benítez, Manuel Lobón, and José A. Donázar in *Biological Conservation* 142:2954-2961, 2009.

The applicant claims there will be no population-level impacts on any species but has provided has provided insufficient evidence to support this assertion. Currently, the Whistling Ridge proposal includes no provisions for temporary or permanent shutdowns of problem turbines, nor does it place turbines at a reasonable distance from important bird areas such as Spotted Owl Special Emphasis Areas. These provisions must be included to ensure that long-lived raptors and other species of concern are not driven to extinction locally.

In response to unavoidable impacts to wildlife, the applicant proposes "mitigations" including raptor nest surveys, post-construction monitoring studies, and the formation of a Technical Advisory Committee to oversee these activities. None of these actions qualify as mitigation measures. Mitigations are measures that remedy a problem. The applicant is merely proposing to study the problem, not to remedy it.

Mitigation cannot be left to a Technical Advisory Committee that is organized and overseen by the developer. I have served on several Technical Advisory Committees, and while such committees may recommend mitigation measures they are not typically empowered to require implementation of any of these measures.

5. Pre-construction estimates of avian and bat fatalities have not proved reliable.

Although no scientists have done a thorough comparison of pre-construction and post-construction mortality estimates, there is plenty of anecdotal evidence that post-construction mortalities often greatly exceed pre-construction estimates made using the same methodology as has been employed for the Whistling Ridge wind project.

For example, the Environmental Impact Statement (EIS) prepared prior to adoption of the Energy Overlay Zone in Klickitat County grossly underestimated the level of wildlife fatalities likely to result from wind development. At all of the wind projects in Klickitat County where monitoring has been completed or is under way, reports prepared by wildlife consultants show that fatalities of raptors and bats are far in excess of what was anticipated by the EIS. Whistling Ridge is using the same consultants and methodology as Klickitat County for its pre-construction fatality estimates.

At Big Horn, the first large wind project built in Klickitat County, the developer's wildlife consultants did a full year of monitoring at 100 percent of the turbines, which makes this one of the most comprehensively monitored wind projects anywhere in the United States. The results of that monitoring study show that raptor fatalities are at least eight times higher than what the developer, PPM/Iberdrola, projected.[6]

An independent study of Big Horn's monitoring results written by Dr. Smallwood concluded that raptor fatalities are up to 16 times higher than predicted prior to

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[6] **Big Horn Wind Power Project Wildlife Fatality Monitoring Study 2006-2007.** Prepared for PPM Energy and Big Horn Wind Project Technical Advisory Committee by Northwest Wildlife Consultants, Inc., 2008.

construction.[7] Big Horn also kills twice as many bats as anticipated, according to fatality monitoring reports. Monitoring studies at other wind projects in Klickitat County are not yet completed, but the preliminary results from those projects suggest even higher fatality rates.

The above-cited independent scientific analysis based on the results from Big Horn (the first of only two projects in Klickitat County where fatality monitoring has been completed) reported a conservative estimate of 243 raptor fatalities annually in Klickitat County. That estimate of 243 raptor fatalities is for a level of development that does not exceed 1,000 megawatts. At its current rate of wind development, Klickitat County is likely to reach a level of 2,000 megawatts or more within the next year or so. For raptors in Klickitat County, these numbers are rapidly approaching population-level impacts. "There is probably no other human source of mortality that comes close to these levels," writes Dr. Smallwood.

At the second project in Klickitat County where monitoring has been completed, Goodnoe, the results are similar.[8] The final monitoring report for Goodnoe calculated fatalities of 0.34 raptors per year per turbine, or 0.17 raptors per megawatt per turbine, or 16 fatalities per year for the project. Only one project reviewed in the WEST report had a higher raptor fatality rate than the one found for Goodnoe. The Goodnoe project is killing far more raptors than predicted by pre-construction surveys.

6. The DEIS underestimates potential impacts on northern spotted owls and other avian species.

The proposed project falls within critical habitat for the northern spotted owl, a species that is not only endangered but has continued to decline since the adoption of the Washington Department of Natural Resources' Habitat Conservation Plan for the species. This species has continued to decline on federal lands, which makes the state's HCP more important than ever. There are only an estimated 500 northern spotted owl pairs remaining in all of Washington state.

Even as the state's Habitat Conservation Plan is failing miserably, the applicant is proposing to undermine that plan by allowing commercial-scale energy development within a Spotted Owl Special Emphasis Area. A commercial wind energy project is *not* appropriate for habitat that is designated as a nesting, roosting and foraging area for a federally endangered species.

In materials distributed to the public prior to the mid-June 2010 hearings, SDS Lumber writes: "After years of timber harvest, there's no suitable habitat for the bird." It is ironic that

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[7] **Avian and Bat Mortality at the Big Horn Wind Energy Project, Klickitat County, Washington.** K. Shawn Smallwood, 2008.

[8] **Goodnoe Hills Wind Project Avian Mortality Monitoring Report**, Prepared for PacifiCorp by URS Corporation, March 16, 2010.

the applicant is pointing the finger at its own destructive timber practices to justify further risk to northern spotted owls.

Regardless of whether spotted owls are currently nesting on or near this property, as they did in recent history, this area is designated as prime potential habitat for the species. The fact that Washington's Habitat Conservation Plan for spotted owls is not increasing the numbers of reproductive pairs makes it all the more important to restore this species' habitat—not to damage it even further.

The Environmental Impact Statement commissioned by Klickitat County for its Energy Overlay Zone stated (on page 2-15 of the Final EIS) that "forested areas host higher concentrations of owl and other sensitive species habitats."[9] The EIS recommended that areas with high concentrations of forested habitats be excluded from the Energy Overlay Zone because of their "higher potential for use by sensitive species and avian species likely to be impacted by wind turbines." This sensitive forested habitat is exactly what is being proposed for development at Whistling Ridge.

Spotted owls are not the only species likely to be significantly impacted by the proposal. Klickitat County's Energy Overlay EIS also found high use of forested habitats by other raptors. The SDS map for the proposed project shows ridge-top locations for turbines, and these are typically the worst possible locations from an avian perspective—i.e., likely to result in the highest number of bird collisions.

7. The DEIS fails to assess compliance with state and federal laws protecting bald eagles, golden eagles, migratory birds, and endangered species.

There are reports of bald eagles and bald eagle nests at the proposed wind site. Yet there is no evidence that the proposed project will be in compliance with the state's Bald Eagle Protection Act, RCW chapter 77.12, and regulations associated with this act.

Nor is there any evidence that the proposed project will be in compliance with the federal Bald and Golden Eagle Protection Act, 16 USC § 668-668(d). This act prohibits any person, association, partnership or corporation from taking a bald or golden eagle at any time or by any manner without a permit. A permit may be issued only if the take would be compatible with the preservation of the species.

There is no evidence in the DEIS that the proposed project will be in compliance with the federal Migratory Bird Treaty Act (MBTA), 16 USC §§ 703-712. The MBTA requires that the U.S. Fish & Wildlife Service take enforcement against "any person, association, partnership or corporation" that "by any means or in any manner" pursues, hunts, takes, captures, kills, or attempts to take, capture or kill a migratory bird or any part, nest or eggs of any migratory bird. Under the MBTA, a corporation may take or kill a migratory bird only if the U.S. Fish & Wildlife Service determines that the take or kill is compatible with migratory

[9] **Klickitat County Energy Overlay Final Environmental Impact Statement**, September 2004.

bird treaties. This determination must include an evaluation of the bird's species abundance and distribution, as well as its migratory and breeding habits. The killing of a single migratory bird is sufficient to create criminal liability, and does not need to be intentional.

There is no evidence in the DEIS that the proposed project will be in compliance with the federal Endangered Species Act (ESA) of 1973, 16 USC §§ 1531-1544. Under the ESA, "take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Section 9 of the ESA prohibits any actions that would "take" an endangered species, as well as actions that would cause an act constituting a "take." The Ninth Circuit has held that "a habitat modification which significantly impairs the breeding and sheltering of a protected species amounts to 'harm' under the ESA.

It seems quite possible that the proposed Whistling Ridge wind project may kill a bald eagle, a migratory bird, or an endangered species. The DEIS must evaluate the likelihood of each of these possibilities, and whether Incidental Take Permits are required from the U.S. Fish & Wildlife Service. A recent court ruling in West Virginia has made it clear that such permits are required under federal law when a wind project is likely to kill any individual animals protected by the Endangered Species Act.

8. The DEIS erred in its analysis of the regional need for new sources of renewable energy.

The DEIS cites the Draft Sixth Northwest Power Plan released in September 2009 by the Northwest Power and Conservation Council. What the DEIS fails to quantify is that this 20-year energy plan for our region concluded that, although population and energy demands will continue to grow in the Pacific Northwest, we can meet more than 80 percent of expected future energy demands through conservation efforts and improved energy efficiency. Conservation efforts not only have less environmental impact than building new energy sources, they are also considerably less expensive.

Less than 20 percent of future needs must come from new sources of energy, according to the Council. And shown above, with 40 wind projects already constructed or proposed for this region, there are plenty of new sources to meet these needs. There is no demonstrated need for Whistling Ridge.

The dirty little secret of wind power in the Columbia Plateau Ecoregion is that most of the electricity being generated here by wind turbines is not needed or used in the Pacific Northwest. Instead it is sold to utilities in California. There is no *regional* need for new power sources; there is simply a *California* demand for electricity generated in Washington and Oregon.

On page 3-91 of the DEIS, the applicant claims that the Klickitat County Energy Overlay Zone Final EIS "recently evaluated the projected energy demand in Klickitat County, Washington, the county immediately adjacent to Skamania County." (In fact, this evaluation is already more than six years old). The DEIS then mentions the EIS

projection that “four wind power projects with total generating capacity of 1,000 MW” will be developed in Klickitat County by 2024.

In fact, Klickitat County has already approved more than a dozen projects, with a total generating capacity of almost 2,000 megawatts. Rather than suggesting that more energy is needed regionally, this rapid development of wind power in Klickitat County indicates that more than enough wind power is already under development to meet the region’s energy needs.

Existing wind projects in this region are already producing so much surplus power that there are times when these projects must be turned off to protect the regional grid. For example, see these recent articles on the surpluses in the Columbia River corridor:
http://green.blogs.nytimes.com/2010/07/07/sudden-surplus-calls-for-quick-thinking/
http://www.oregonlive.com/business/index.ssf/2010/06/swollen_columbia_river_churns.html

9. The DEIS fails to estimate the direct and cumulative impacts of this project on the Northwest power grid.

The breaktaking pace of wind development along the Columbia River has created serious challenges for BPA and the regional energy grid. There are limits to the amount of wind power that can be integrated into the grid, and we are already at or near these limits. BPA has expressed concerns about how it can integrate more than 6,000 megawatts of wind power into the grid, yet the DEIS fails to analyze these constraints and how they will be affected by the construction of yet another wind project.

Adding more wind power capacity to the grid requires not only new transmission lines but also new storage capability, because wind is an intermittent power source. Typically wind projects operate at only about 30 percent of their total generating capacity, which means that 70 percent of the time a backup power source must be available.

The DEIS has failed to analyze the environmental impacts of the proposed backup power source for Whistling Ridge. For example, if hydropower will be the backup, the DEIS must consider the indirect impacts of this project on fish, irrigation, navigation and other drawdown impacts.

The applicant has hinted at possible plans to construct a natural-gas-fired power plant, perhaps as a backup power source for when the wind is not blowing at Whistling Ridge. The applicant should be required to disclose those plans now, so that the impacts of a natural-gas-fired power plant can be considered along with the impacts of the wind project.

Also, Williams is proposing a new gas line for the Whistling Ridge area, and the substation and transmission inter-tie lines proposed for the Whistling Ridge area could

signal the advent of additional power plants in the area. These must be evaluated along with impacts of the infrastructure currently being proposed.

A recent study in Colorado found that wind power's supposed carbon emissions benefits are not being realized, because of the requirement for conventionally-generated backup power.[10] Because all coal-fired power plants and some natural-gas-fired power plants produce greater emissions when they act as backup systems for wind power, thanks to inefficiencies associated with cycling on and off, the benefits of wind power in reducing carbon emissions are reduced.

Contrary to what the DEIS states, there is no evidence that the Whistling Ridge project will have a beneficial impact on air quality in the Columbia Gorge vicinity. No fossil-fuel-fired projects will be taken offline as a result. In fact, backup power from fossil-fuel-fired projects may be required for those times when the wind is not blowing.

10. The DEIS failed to evaluate the potential health effects of wind turbines on local residents.

There is ample evidence that low-frequency noises, shadow flicker, and nighttime lighting associated with wind turbines can be injurious to the physical and mental health of people living in the vicinity of turbines.[11] While many or even most people might not find noises, lights or flickers annoying or even noticeable, they can be severe—and in some cases life-changing—for a minority of the population. Regardless of whether these impacts affect everyone, they can affect some people, and must be evaluated in that light.

11. The DEIS failed to evaluate alternatives to the proposal.

SEPA and NEPA require consideration of alternatives. The applicant owns tens of thousands of acres of land, including other sites that would be more appropriate for wind power development than Whistling Ridge. The DEIS must evaluate potential alternatives, including alternative sites as well as alternative turbine layout configurations.

12. The DEIS overwhelms the public with quantity but not quality.

I am grateful for the extended comment period. Nevertheless, it is not reasonable to expect members of the general public to be able to digest and respond intelligently within just a few weeks to a record that is thousands of pages long and years in the making.

Despite this huge volume of material, there is very little scientific literature cited in the DEIS, and even less that is peer-reviewed science. The applicant has cherry-picked a few

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[10] **How Less Became More…Wind, Power and Unintended Consequences in the Colorado Energy Market**, Prepared by Bentek Energy LLC for the Independent Petroleum Association of Mountain States, April 16, 2010.

[11] "Summary of Recent Research on Adverse Health Effects of Wind Turbines," Compiled by Keith Stelling, October 20, 2009.

statistics and extrapolations from industry-sponsored reports and ignored the independent science and actual mortality studies that suggest major cumulative impacts are likely for wildlife given the pace and scope of wind power development in this region.

Thank you for the opportunity to comment on this project.

Sincerely,

Dawn Stover

COMMENT LETTER 37
Talburt, Tammy (COM)

WR - DEIS
Public Comment #165

From: BOBBY DUNCAN [redacted]
Sent: Wednesday, June 16, 2010 7:22 PM
To: COM EFSEC
Subject: Opinion on Whistling Ridge Wind Farm.

Categories: Yellow Category

To BPA Public Affairs
Office,

June 16, 2010

I, Robert P. Duncan and my wife Jacqueline B. Duncan are in favor of the wind farm in Skamania county. We have traveled the mountains of Italy, Spain, and California and found no ill effects of the view or the esoteric feeling of the mountains. Besides the jobs and revenue that it will generate, the project improves fire access roads in the farm areas making it safer and easier for our firemen in case of a major fire. It also decreases the carbon footprint that a coal fired plant would use to produce 75 MW of power which our growing population state needs.

We are sorry we cannot attend and let our voices be heard.

Thank You
R.P. Duncan and J.B. Duncan

[redacted]

COMMENT LETTER 38

WR - DEIS
Public Comment #166

Talburt, Tammy (COM)

From: Rogers, Lee [redacted]
Sent: Wednesday, June 16, 2010 9:52 PM
To: COM EFSEC
Subject: Whistling Ridge Energy Project

Categories: Yellow Category

I am a resident of the community of Mill A in Skamania County, Washington - having moved to this community in 1976 and lived here since then (except for 5 years while teaching at Pepperdine University in California -- now retired from teaching). My home is located just west of the proposed Whistling Ridge Energy Project.
I appreciate what Broughton Lumber Company and its parent SDS Lumber Company have done for many of our communities here in Skamania County over many years, and I consider the Whistling Ridge Energy Project to be yet another way that SDS will be of great benefit to the citizens in our area -- furnishing much-needed jobs and boosting our local economy, and also beneficial to our entire country in their effort to help provide more electricity for all of us.
Wind-generators are an excellent method of energy production and will do much to help our country decrease our dependence on foreign oil. They are clean, efficient, and are even better than "renewable" since they do not consume anything (no wood, coal, etc.)
I strongly support the Whistling Ridge Energy Project, and I encourage EFSEC and BPA to approve it.

Sincerely,

Lee Rogers

[redacted]

COMMENT LETTER 39

WR - DEIS
Public Comment #167

Talburt, Tammy (COM)

From: Liz Kingslien [redacted]
Sent: Thursday, June 17, 2010 8:10 AM
To: COM EFSEC
Subject: SDS Whistling Ridge Wind Power Project

Categories: Yellow Category

Dear Council Members,

I am a native Oregonian and my father was a native Oregonian logger and logging road builder. I now live in Lyle, WA in the Columbia Gorge. Although I am supportive of alternate energy, I am more supportive of keeping the gorge as pristine as possible. When I saw the before and after photos that SDS had in their brochure I couldn't believe they thought these photos would incline people toward their position. It is obvious to me that the wind towers would be eyesores.

We recently went to Yellowstone Park. As we drove through I thanked the people of vision who created and preserved the park's naturalness.
We must do the same for what's left of the natural beauty of the gorge.

My husband is a consultant in the lumber industry and we understand the difficulties the industry is having at this time. But the economic success of the few cannot be the only impetus to allow this project.
There is only one Columbia Gorge, we cannot allow its beauty to be compromised.

I am unable to attend either of the meetings, but I would like to register my opposition to this project.

Thank you,
Liz Kingslien
[redacted]

COMMENT LETTER 40

WR - DEIS
Public Comment #170

Talburt, Tammy (COM)

From: John Chaimanis [redacted]
Sent: Thursday, June 17, 2010 12:11 PM
To: COM EFSEC
Subject: Governor Gregoire must ALLOW Whistling Ridge

Categories: Yellow Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause NO significant negative impacts to sensitive wildlife and plant habitat and would not degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire ACCEPT this project.

This proposal NOT is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because this project is proposed along an actively forested ridgeline in the foothills of the Cascade Mountains. The project would enhance the use of the land and result in direct and indirect positive impacts to our economy. Collisions with turbine blades are a minor concern compared to the impacts of fossil generation.

Siting Columbia River Gorge would not degrade the scenic value of the Gorge. The turbines and their blinking lights may be slightly visible from several designated key viewing areas within the National Scenic Area, including Interstate 84, the Historic Columbia River Highway, Columbia River, Cook-Underwood Road, and Panorama Point; however they are not within the scenic area itself. The project is a compliment to the ongoing sustainable foresting operations.

Furthermore, the useful life of turbines is expected to be 20 - 25 years. At which point a decommissioning and dismantling would effectively render their impact entirely unnoticeable.

We have a short time in to impact our dire global situation, and we must REPLACE other HARMFUL POLLUTING means of producing energy.

I support renewable energy, adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure. The rules governing the scenic area should not creep into managing surrounding areas.

John Chaimanis
na
[redacted]

COMMENT LETTER 41

WR - DEIS
Public Comment #171

Talburt, Tammy (COM)

From: eric shetterly [redacted]
Sent: Thursday, June 17, 2010 12:55 PM
To: COM EFSEC
Subject: Whistling Ridge Energy Project

Categories: Yellow Category

Gentlemen:

I want to take a few minutes to register my support for the subject project as proposed by SDS Lumber Company.

Although I occasionally drive-by the SDS mill in Bingen, I am not and have never been connected with SDS in any way whatsoever: not as an employee, contractor, supplier, by marriage, friendship or in any other fashion.

Neither do I stand to gain or profit in any way by SDS's development of the proposed wind energy project.

There can be no conceivable, legitimate reason for this project not to be given your support and authorization to move forward as soon as possible. I very much hope that final approval will be forthcoming.

Sincerely,
Kenneth E Shetterly
[redacted]

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COMMENT LETTER 42

WR - DEIS
Public Comment #172

Talburt, Tammy (COM)

From: Ellynne Kutschera [redacted]
Sent: Thursday, June 17, 2010 12:59 PM
To: COM EFSEC
Subject: No Whistling Ridge, Governor Gregoire

Categories: Yellow Category

While I am a supporter of renewable energy, all the environmental choices we make need to be careful ones, considering all impacts. The Whistling Ridge Energy Project, along the Skamania and Klickitat county line is a mix of positive and negative impacts - the negative effects on wildlife and on the environmental well-being of the Gorge outweigh the benefits. I am aware that the potentially affected listed and sensitive species include northern spotted owl, western gray squirrel, northern goshawk, several species of bats, multiple migratory bird species, mule deer, black-tailed deer, and elk. I sincerely hope the decision-makers involved will listen to reason and choose alternatives, preserving what undisturbed areas we have left!

Thank you.

Ellynne Kutschera
[redacted]

COMMENT LETTER 43

WR - DEIS
Public Comment #173

Talburt, Tammy (COM)

From: pamela marley [redacted]
Sent: Thursday, June 17, 2010 3:20 PM
To: COM EFSEC
Subject: Whistling Ridge Energy Project

Categories: Yellow Category

EFSEC:

I am writing to express my support of the Whistling Ridge Energy Project plans. I am a long-time resident of Skamania County and have watched as residents struggled through economic hard times for many, many years, whether related to timber, owls, or tourism. Other Gorge counties are benefiting from the Gorge's abundant wind supply and, as an opponent of nuclear power and also a salmon recovery advocate, I very much favor the clean energy wind farms provide. I have read that agriculture and wind farming are actually quite compatible land uses, and I also think that, with appropriate planning, a fully operational wind farm could serve as an educational tourist attraction as we move toward sustainable alternative energy sources. This particular project does not significantly impact the natural beauty or public enjoyment of this scenic wonderland as many other proposals have and offers Skamania County a long-overdue boost.

Thank you for considering my comments.

Pamela Marley

Talburt, Tammy (COM)

From: Don McGuire [redacted]
Sent: Thursday, June 17, 2010 4:20 PM
To: COM EFSEC
Subject: Governor Gregoire MUST APPROVE Whistling Ridge

Categories: Yellow Category

I am writing in support of the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project WILL NOT cause negative impacts to sensitive wildlife. As proposed, this project will not degrade the scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire APPROVE this project.
The project would cause minimal or NO disturbance to areas of forested habitat.
In addition, locating 426-foot-tall turbines on the ridge line of the Columbia River Gorge would help power the values of the Gorge. The turbines may even be visible from some viewing areas within the National Scenic Area. The project would introduce industrial development into the natural, forested landscape and ENHANCE views in the National Scenic Area.

I support renewable energy and I am in favor of industrial wind energy development within, and adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Don McGuire
[redacted]

Talburt, Tammy (COM)

From: Richard Potter [redacted]
Sent: Thursday, June 17, 2010 4:40 PM
To: COM EFSEC
Subject: Governor Gregoire must approve Whistling Ridge

Categories: Yellow Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line.
The DEIS is complete, comprehensive and no further anaylsis is requried.
I support the Whistling Ridge Energy project because:
1. This project will create much needed green, renewable energy 2. Becasue this project is in my backyard. I have been an Underwood, Washington resident for over 15 years.
3. It will create much needed incremental tax revenue for the county and school districts.
I support renewable energy, and the Whistling Ridge Energy Project.

Sincerely,

Richard Potter
[redacted]

Richard Potter
[redacted]

COMMENT LETTER 46

WR - DEIS
Public Comment #176

Talburt, Tammy (COM)

From: Vince Ready [redacted]
Sent: Thursday, June 17, 2010 8:40 PM
To: COM EFSEC
Subject: FW: Whistling Ridge Wind Farm - Public Comment

Categories: Yellow Category

Dear WA EFSEC,

I am writing to express opposition to the proposal to site a large-scale wind farm on Saddleback Mountain in a location that is in the heart of the Columbia Gorge, and will be visible from several key viewing areas which are established in the Gorge National Scenic Act. This wind farm, if built, would not only have scenic impact, but also would potentially have adverse long-term impact on bird habitat and wildlife in the region. No other wind farm project to date has been sited in such a densely forested area in proximity to endangered species – including the Northern Spotted Owl and Northern Goshawk.

I have not had an opportunity to carefully review this proposal, but due to the short public comment period, I want to go on record and express that my wife Jodi and I oppose this project and urge you to recommend denial to Governor Gregoire because Whistling Ridge is environmentally irresponsible and would harm the Columbia River Gorge.

Thank you for taking our input into consideration.

Sincerely,

Vince Ready

Vincent L. Ready

[redacted]

COMMENT LETTER 47

Talburt, Tammy (COM)

From:	Patrick Cummings [redacted]
Sent:	Friday, June 18, 2010 9:32 AM
To:	COM EFSEC
Subject:	Governor Gregoire must ALLOW Whistling Ridge
Categories:	Yellow Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. Studies have shown that the proposed project would have no negative impact on wildlife and plant habitat and would not affect the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire approve this project.

I support renewable energy, and reducing our reliance on foreign oil, particularly given the current situation in the Gulf of Mexico. This project is an important step in the right direction for the state of Washington and for the Gorge's energy independence.

Patrick Cummings
[redacted]

COMMENT LETTER 48

WR - DEIS
Public Comment #179

[redacted]

EFSEC

905 Plumb Street SE
Olympia, WA 98504-3172
Email: efsec@commerce.wa.gov

I support the Whistling Ridge Energy Project. I believe America needs to move ahead with clean energy solutions which don't depend on oil.

I hope you will also support this project.

Thank you
Cal Edwards

Talburt, Tammy (COM)

From: Cal Edwards [redacted]
Sent: Friday, June 18, 2010 11:08 AM
To: COM EFSEC
Subject: Whistling Ridge Energy Project
Attachments: whistling ridge.docx

Categories: Yellow Category

Asking for your support in the attachment.

COMMENT LETTER 49

WR - DEIS
Public Comment #181

Talburt, Tammy (COM)

From: Brian Barrett [redacted]
Sent: Friday, June 18, 2010 12:17 PM
To: COM EFSEC
Subject: RE: Whistling Ridge abomination

Importance: High

Categories: Yellow Category

I have lived in the Gorge for about 10 years and am a big fan of wind power in general. In fact, I LIKE the new array of wind generators out near Maryhill (outside the National Scenic Area). But the reality of the Whistling Ridge project in a residential and nationally protected area will be the following:

No change in electrical costs for average taxpayers*.
A paltry number of construction jobs, most of them temporary and many of those requiring imported specialized labor.
Death to thousands of various wild animals (birds and mammals--especially our best friends, BATS/mosquito mowers, which are abundant in the fecund Cascades).
Audible annoyance/deleterious health effects on humans and their domesticated animals.
A giant scar on the Gorge land/river-scape (this includes the National Scenic Area).
Huge profits (surplus electricity sold back to the electricity brokers for resale to CALIFORNIA/Seattle) for the Stevenson Empire.

The only long-term benefit here is decades of easy money for one entity: Stevenson Empire. Oops, almost forgot the other beneficiaries: electricity brokers who sell to California and Washington's big municipal users.

I am tired of 800# gorillas, such as the Stevensons, throwing their weight around so indiscriminantly around here to the detriment of average and below-average locals. Don't the Stevensons have enough wealth already? How much is enough for them? Somebody please make them stop!

***Talk is cheap. If the Stevensons truly cared about the local community, decades ago they would have spent serious money on a construction solution (such as an overpass for the Bingen lumber mill) to the audibly and psychologically disturbing train horn and noise which plagues Bingen and Hood River residents several times per day and night!

Just say "NO" to:

Death and malaise to thousands of beautiful and beneficial animals.
No economic benefits to the majority of local residents.
Greed of already extremely wealthy land owners and (literal) power brokers.

Sincerely,
Brian Barrett
[redacted]

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COMMENT LETTER 50

WR - DEIS
Public Comment #182

Talburt, Tammy (COM)

From: Victor Benveniste [redacted]
Sent: Friday, June 18, 2010 4:41 PM
To: COM EFSEC
Subject: Whistling Ridge Project

Categories: Yellow Category

The choices are limited:
- Proceed with the project and other similar wind farms.
- Increase the energy production from oil, gas, nuclear, and coal and accept the ensuing environmental devastation.
- Do without the energy. One wonders how many of the NIMBY opponents are willing to forego cooling and heating their homes to avoid seeing the windmills in their distant view !

It seems that a mild esthetic impact (although I personally find windmills aesthetically pleasing) and the loss of some bird population is a far lesser evil than pollution of air and water. The loss of life and treasure associated with the various wars we engage in to protect the supplies of fossil fuels is an additional matter of concern.

Victor and Sharon Benveniste
[redacted]

COMMENT LETTER 51

WR - DEIS
Public Comment #183

Talburt, Tammy (COM)

From: dcrow [redacted]
Sent: Saturday, June 19, 2010 9:05 AM
To: COM EFSEC
Subject: Whistling Ridge Energy Project. Underwood, WA.

Categories: Yellow Category

June 19, 2010

Sirs.

I am writing in opposition to the proposal by Whistling Ridge Energy LLC to construct up to 50 turbines along 2,000 foot-tall ridgeline on the boundary of the Columbia River Gorge National Scenic Area near White Salmon Washington. Approximately 384 acres would be developed for the wind turbine foundations, connecting roadways and overhead and underground transmission lines. Each turbine would be more than 420 feet tall and equipped with blinking lights.

The proposed wind turbines would cover more than 1,000 acres of highly visible ridgelines and would be seen from several designated key viewing areas in the Gorge including Interstate 84, the Historic Columbia River Highway, Columbia River, Cook-Underwood Road, and Panorama Point. The project would also be highly visible from communities and cities such as Mill A, Underwood, Hood River, and White Salmon.

All wind developments should be sited east of the eastern boundary of the National Scenic Area (Maryhill and the Deschutes River) or in other areas not visible from the NSA. We need alternative energy sources, but here the cost in loss of other assets is too great!

Sincerely,

Douglas M. Crow
[redacted]

WR - DEIS
Public Comment #189

Talburt, Tammy (COM)

From: dcrow [redacted]
Sent: Saturday, June 19, 2010 2:46 PM
To: COM EFSEC
Subject: Whistling Ridge Energy Project. Underwood, WA.

Categories: Yellow Category

June 19, 2010

Sirs.

I am writing in opposition to the proposal by Whistling Ridge Energy LLC to construct up to 50 turbines along 2,000 foot-tall ridgeline on the boundary of the Columbia River Gorge National Scenic Area near White Salmon Washington. Approximately 384 acres would be developed for the wind turbine foundations, connecting roadways and overhead and underground transmission lines. Each turbine would be more than 420 feet tall and equipped with blinking lights.

The proposed wind turbines would cover more than 1,000 acres of highly visible ridgelines and would be seen from several designated key viewing areas in the Gorge including Interstate 84, the Historic Columbia River Highway, Columbia River, Cook-Underwood Road, and Panorama Point. The project would also be highly visible from communities and cities such as Mill A, Underwood, Hood River, and White Salmon.

All wind developments should be sited east of the eastern boundary of the National Scenic Area (Maryhill and the Deschutes River) or in other areas not visible from the NSA. We need alternative energy sources, but here the cost in loss of other assets is too great!

Sincerely,

Douglas M. Crow
[redacted]

COMMENT LETTER 52

WR - DEIS
Public Comment #184

Talburt, Tammy (COM)

From: Kenneth Conaway [redacted]
Sent: Saturday, June 19, 2010 9:54 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Yellow Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project will not cause significant negative impacts to sensitive wildlife and plant habitat and will not degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire approve this project.
This proposal is not likely to have any different or greater wildlife impacts than any other wind energy facility proposed in the State of Washington. The project will not permanently disturb any areas of forested habitat and will not result in direct or indirect impacts to the multiple wildlife species. None of the listed or sensitive species including the northern spotted owl, western gray squirrel, northern goshawk, several species of bats, multiple migratory bird species, mule deer, black-tailed deer, or elk will suffer detrimental effects from this project.

I support renewable energy, and I support industrial-scale wind energy development wherevever it can help us become energy self sufficient.

Kenneth Conaway
[redacted]

COMMENT LETTER 53
Talburt, Tammy (COM)

WR - DEIS
Public Comment #185

From: Barbara King [redacted]
Sent: Saturday, June 19, 2010 11:14 AM
To: COM EFSEC
Subject: Governor Gregoire must approve Whistling Ridge

Categories: Yellow Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would substantially improve the economic conditions in these two counties without causing negative impacts to sensitive wildlife and plant habitat or impacting the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire approve this project.

This proposal is unlikely to have any different and greater wildlife impact than any other wind energy facility proposed in the State of Washington, perhaps even less because this project is proposed along an already cleared for utility access low ridgeline in the foothills of the Cascade Mountains. Locating the turbines on this ridge line where there are already existing electrical towers would cause no additional impact to the scenic value of the Gorge than the already existing utility works, and therefore no significant additional energy development into the forested landscape.

I support renewable energy, and encourage EFSEC to recommend that Governor Gregoire approve this project.

Barbara King
[redacted]

COMMENT LETTER 54

WR - DEIS
Public Comment #186

Talburt, Tammy (COM)

From: Doug Miley [redacted]
Sent: Saturday, June 19, 2010 11:39 AM
To: COM EFSEC
Subject: Whistling Ridge Energy project

Categories: Yellow Category

I would like to express my support for the Whistling Ridge Energy Project. Solar, wind, and bio-fuels are our energy future. We NEED to start thinking clean renewable energy instead of the old model of "polluting", "limited resource", "harmful to the environment" types of energy. I know the Gorge is a special place and needs to be preserved but I see wind energy doing just that. Windmills are far less harmful than the polluting coal-fired Boardman plant that spews dangerous pollutants into our air and water that ultimately affects the quality of life here in the Gorge.

Thanks you,
Douglas Miley
[redacted]

COMMENT LETTER 55

Talburt, Tammy (COM)

From: Ann Frodel [redacted]
Sent: Saturday, June 19, 2010 12:54 PM
To: COM EFSEC
Subject: Whistling Ridge Wind Farm

Categories: Yellow Category

Dear Washington State Energy Facility Site Evaluation Council,

Please consider the scenic impact of the proposed turbines and that they would be highly visible from several viewing areas in the Columbia River Gorge. We own a Bed and Breakfast here in Hood River and our view would change from a lovely night time star light sky with low household lighting to hundreds of flashing pulsating lights day and night. One reason so many folks come here from all over the world is to enjoy the mountain, rivers and special views our area has to offer. The National Geographic continually recognizes Hood River and the Gorge as one of the most beautiful and special places to visit. Exert below, but wind turbines over 400 ft tall, blades 230 across and flashing lights 24/7 would completely be in direct contrast to the natural beauty that draws in 640,000 tourists a year to the Gorge.

Mount Hood
Oregon

From *National Geographic Traveler*
Written by Aaron Dalton

The European settlers and fortune-seekers who made their way West along the Oregon Trail in the mid-19th century faced a difficult choice when they arrived at the steep valley known today as the Columbia River Gorge—the only sea-level pass through the north-south Cascade mountain range. They could try to float their wagons and possessions down the river on rafts through dangerous rapids. Or they could attempt the overland route through the Cascade mountains on the Barlow Road, a dirt track so steep that it could only be traversed with great difficulty. Some intrepid Barlow Road travelers resorted to cutting down trees and lashing them to the backs of the wagons to slow their descent. The good news: The scenery in the Columbia River Gorge and the Cascade Range are just as spectacular today, but the roads have improved considerably.

Overview

Drivers can get an excellent sense of the history, beauty, and diverse charms of the Columbia River Gorge region by starting in Portland and tracing a roughly triangular route east alongside the Columbia River, south up the slopes of Mount Hood, and then back west following the Sandy River through a picturesque landscape of small villages.
http://traveler.nationalgeographic.com/print/drives/mount-hood

From Travel Oregon…..

http://www.traveloregon.com/Explore-Oregon/Portland-Metro/Trips-We-Love/Hood-River-Valley.aspx

Hood River Valley – Small town charm and big time flavor- great trip for scenery.

'Located a scenic sixty miles East of Portland, Hood River and the surrounding valley offer up the bounty of a century of fruit growing and the taste of a dynamic wine-growing region, producing a variety of wines."

The local economy depends on the tourist dollar and many tourists come to enjoy the view.

The wind turbines are also detrimental to the birds, big horn sheep and wild life and the endangered species in the area.

For these reasons we hope you do not allow, the Whistling Ridge Project as there are plenty of other locations suitable for winds farms in eastern Washington and Oregon.

Ann Frodel

COMMENT LETTER 56

WR - DEIS
Public Comment #188

Talburt, Tammy (COM)

From: David Peterson [redacted]
Sent: Saturday, June 19, 2010 2:06 PM
To: COM EFSEC
Cc: Soma Sexton
Subject: Whistling Ridge Wind Farm project on the Underwood Bluff

Categories: Yellow Category

Dear Madam/Sir:

Let me be known that I am strongly opposed to the wind farm being proposed for the Underwood Bluff in Washington. It is directly across the Columbia River from where I reside and I feel it would seriously detract from the natural beauty of our Columbia River Gorge. This is not a suitable site for this project and represents a special interest not the greater good.

Best Regards,

David Peterson
[redacted]

Talburt, Tammy (COM)

From: Kim Gilmer [redacted]
Sent: Sunday, June 20, 2010 3:04 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Blue Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

The Columbia River Gorge is the only federally designated scenic area in the U.S. While I'm in total support of renewable energy, placing wind turbines where they are visible within the scenic area is in my mind completely contrary to the purpose of designating this as a scenic area.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because this project is proposed along a forested ridgeline in the foothills of the Cascade Mountains. The project would permanently disturb large areas of forested habitat and result in direct and indirect impacts to multiple wildlife species through habitat loss and displacement, direct collisions with turbine blades, and other factors. The potentially affected listed and sensitive species include northern spotted owl, western gray squirrel, northern goshawk, several species of bats, multiple migratory bird species, mule deer, black-tailed deer, and elk.
In addition, locating 426-foot-tall turbines on the ridge line of the Columbia River Gorge would degrade the scenic value of the Gorge. The turbines and their blinking lights would be highly visible from several designated key viewing areas within the National Scenic Area, including Interstate 84, the Historic Columbia River Highway, Columbia River, Cook-Underwood Road, and Panorama Point. The project would introduce industrial development into the natural, forested landscape and indefinitely alter views in the National Scenic Area.

I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Kim Gilmer
[redacted]

COMMENT LETTER 58

Talburt, Tammy (COM)

From: james trenter [redacted]
Sent: Sunday, June 20, 2010 5:51 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

Categories: Yellow Category

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. EFSEC should recommend that Governor Gregoire approve this project.
This proposal is likely to have greater impact than any other wind energy facility proposed in the State of Washington to create jobs to a state with an above average unemployment rate.
The project would provide industrial development and infrastructure into an area that needs jobs, devekopment, and green energy.

I support renewable energy and beleive this project will be a short-term and long-term economic boost to this area.
Sincerely

James Trenter

james trenter
[redacted]

COMMENT LETTER 59

WR - DEIS
Public Comment #193

Talburt, Tammy (COM)

From: John Bryan [redacted]
Sent: Monday, June 21, 2010 4:24 PM
To: COM EFSEC
Subject: Whistling Ridge Wind Farm

Categories: Yellow Category

Gentlemen:

I am a renewable energy enthusiast yet I feel I need to speak out about this project. In eastern Oregon there are prolific wind generators located in some key areas of strong wind. All that I have seen so far, are located in grassland areas with virtually no trees nearby. This locating factor reduces the possibility of damage to wildlife because most of the wildlife is lower flying, if at all, having little habitat from 100 feet up. However, to locate 50 wind generators in the middle of a forested area really exposes a great deal of habitat to almost 6000 feet of turbulent rotors, which they will not survive. Please do not allow the dollar signs and the green speak to move us one step forward yet 3 steps back. This is a good project but quite simply, the wrong place. Jobs and financial support into the community are always good reasons for these projects to be justified, However as we have learned with the casino issues, not always the primary issues to consider.

Thank you,

John Bryan

[redacted]

COMMENT LETTER 60

WR - DEIS
Public Comment #194

Whistling Ridge Energy Project
Public Comment 6/16/2010

Thank you for the opportunity to comment on the DEIS for Whistling Ridge. After reading though this document, I was struck by the generic and generally outdated content. I understand the need to plagiarize other EIS's to lessen preparation efforts; however, it does worry me that this project is not being looked at for the uniqueness of this site, and the natural and scenic resources. Besides that general comment, some specifics are:

1) Under "affected environment", "surface water", there is no mention of the unnamed stream west (and down slope) of the A1-A7 turbine group. This stream initiates as a spring and flows year round, and eventually empties into the Columbia River. In addition, it flows through World Stewardship Nature Preserve Land (soon to be purchased by Columbia Land Trust). Please add this consideration to your study.
2) Under "groundwater", the same unnamed stream mentioned above has been overlooked since it does originate at groundwater. Please add this to your study.
3) There was very little discussion on the flashing red lights. My understanding is that these are fairly bright and regular flashes, which besides being disturbing to local residents could also trigger health issues. Please add this consideration to your study.
4) There is no reference to Dr. Pierpont's studies on the health effects of wind turbine sounds, and a response to this new science by the applicant. It is not sufficient to say "not a problem", when current scientific studies indicate the need for larger setbacks to avoid these issues. All of the "noise" documentation is generally positive, educational, and/or based on county defined noise ordinances, all of which do not comprehend continuous operation of noise producing machinery. It is also interesting to me the shear amount of documentation in the DEIS on noise, causing me to believe that this can be a problem and really needs more than an academic dissertation on sound. The most recent science should be considered in the study.
5) The study did not use the noise levels defined by the manufacturer of the proposed towers and the generating station, which are larger and noisier than those discussed. It is unacceptable and reckless to conclude the noise would be within EFSEC limits, if this group does not assess the actual towers and the generator facility to be used. Please update your report for the maximum anticipated noise levels, cumulative effects of multiple towers coupled with power generation/transfer and their impact to the surrounding community.
6) Regarding land use and the National Scenic Area. We all understand that regulations, boundaries, etc. do not preclude development of this type of project, however can you honestly say that the lawmakers and NSA visionaries understood (many, many years ago) that 400+ tall manmade, noisy, intrusive, structures would be created and erected. Can you honestly and with good conscience, ignore the basic intent of the National Scenic Act: "Preserve our nation's natural scenic resources", by siting loopholes, ordinance weakness, and the limits of our written language. Remember, this is permanent (30+years) and a resource that can never, never be reclaimed to its current grandeur. Please try to justify this project (as a whole or in parts) given this basic concept of natural scenic area preservation. If you knowingly and willingly ignore preservation of a scenic area, you will spoil our treasure just as oil is spoiling Florida beaches now. Please consider a reconfiguration of the project, at a minimum to eliminate the most visible turbines, specifically the "A1-A7" array.
7) More recent studies on bat and raptor deaths caused by wind turbines indicate a significantly higher number than expected. Klickitas County has recently begun a new study because many more deaths were occurring than promised by the boiler plate information in their EIS. Please update your study to consider recent results.

8) There does not seem to be mention or analysis of that land being designated as "Deer and Elk Winter Range"? I was unable to get a map from WDFW in this short time, but I do know that the land immediately south of the project is designated winter range preserve. If this project is or is not in the preserve, what would be the impacts to elk and deer movement, how will they react to the "strings" of turbines, operational noise, construction, etc? If you believe that this wildlife will simply "go around", what is the impact and how will the applicant mitigate the impact to the surrounding communities now in the path of ranging wildlife? What would be the impact to the surrounding communities when the predators (e.g. cougars) follow the new path, and how will we be protected?
9) Regarding impacts to property values: it is inappropriate to merely list/itemize the results of studies, without considering the details. For example, if these studies did not have any homes as close to the projects as this will be, those studies are not applicable. If the studies did not have homes and property of comparable value (i.e. shacks verses million dollar homes), then the studies are not applicable. If these areas did not have property of comparable value, then the studies are not applicable. If the areas understudy do not have comparable "visual" appeal (i.e. in the scenic area), then the studies are not applicable. I expect, due to the locations of the referenced studies, that they are generally not comparable to this situation. Your DEIS needs to be updated with property value studies that represent this project and this neighborhood, for undeveloped land, developed land, and land with homes.
10) Regarding "future developments", the "Middle Mountain Wind Project" should be updated to indicate that the Hood River County Commissioners have determined the project to be not feasible due to local discontent and the results of an independent study concluding the project would be financially unacceptable, contrary to the financial payback reported by their applicant. You might also consider adding the decision regarding the Seven Mile project; impacts to the local community and the scenic area also could not be justified.

I know that you are tired, and a bit numb to the comments so far and yet to come, but I request that you review each as if you lived here. As if you come to the Gorge to enjoy the natural scenery, as if it was in your back yard. Remember, this project is in everyone's back yard, it is a National Scenic Area.

Thank you

Mike Eastwick
[redacted]

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100004 - Eastwick

Thank you for the opportunity to comment on the DEIS for Whistling Ridge. After reading though this document, first I was struck by the generic, boiler plate, and generally outdated content. I understand the need to plagiarize other EIS's to lessen preparation efforts; however, it does worry me that this project is not being looked at for the uniqueness of this site, and the natural and scenic resources. Besides that general comment, some specifics are: 1) Under "affected environment", "surface water", there is no mention of the unnamed stream west (and down slope) of the A1-A7 turbine group. This stream initiates as a spring and flows year round, and eventually empties into the Columbia River. In addition, it flows through World Stewardship Nature Preserve Land (soon to be purchased by Columbia Land Trust). Please add this consideration to your study. 2) Under "groundwater", the same unnamed stream mentioned above has been overlooked since it does originate at groundwater. Please add this to your study. 3) There was very little discussion on the flashing red lights. My understanding is that these are fairly bright and regular flashes, which besides being disturbing to local residents could also trigger health issues. Please add this consideration to your study. 4) There is no see reference to Dr. Pierpont's studies on the health effects of wind turbine sounds, and a response to this new science by the applicant. It is not sufficient to say "not a problem", when current scientific studies indicate the need for larger setbacks to avoid these issues. All of the "noise" documentation is generally positive, educational, and/or based on county defined noise ordinances, all of which do not comprehend continuous operation of noise producing machinery. It is also interesting to me the shear amount of documentation in the DEIS on noise, causing me to believe that this can be a problem and really needs more than an academic dissertation on sound. The most recent science should be considered in the study. 5) The study did not use the noise levels defined by the manufacturer of the proposed towers, which are larger and noisier than those discussed. It is unacceptable and reckless to conclude the noise would be within limits, if you do not look the actual towers to be used. Please update your report for the maximum anticipated noise levels, cummulative effects of multiple towers, and their impact to the surrounding community. 6) Regarding land use and the National Scenic Area. We all understand that regulations, boundaries, etc. do not preclude development of this type of project, however can you honestly say that the lawmakers and NSA creators understood (many, many years ago) that 400+ tall manmade, noisily, ugly, structures would be created and erected. Can you honestly and with good conscience, ignore the basic intent of the National Scenic Act: "Preserve our nation's scenic resources", by siting loopholes, ordinance weakness, and the limits of our written language. Remember, this is permanent (30+years) and a resource that can never, never be reclaimed to its current grandeur. Please try to justify this project (as a whole or in parts) given this basic concept of scenic area preservation. If you knowingly and willingly ignore preservation of a scenic area, you might as well spill billions of gallons of oil onto the pristine shores of Florida and other southern states. 7) More recent studies on bat and raptor deaths caused by wind turbines indicate a significantly higher number than expected. Klickitas County has recently begun a new study because many more deaths were occurring than promised by

the boiler plate information in their EIS. Please update your study to consider recent results. 8) There does not seem to be mention or analysis of that land being designated as "Deer and Elk Winter Range"? I was unable to get a map from WDFW in this short time, but I do know that the land immediately south of the project is designated winter range preserve. If this project is or is not in the preserve, what would be the impacts to elk and deer movement, how will they react to the "strings" of turbines, operational noise, construction, etc. If you believe that this wildlife will simply "go around", what is the impact and how will the applicant mitigate the impact to the surrounding communities now in the path of ranging wildlife? What would be the impact to the surrounding communities when the predators (e.g. cougars) follow the new path, and how will we be protected? 9) Regarding impacts to property values: it is inappropriate to merely list/itemize the results of studies, without considering the details. For example, if these studies did not have any homes as close to the projects as this will be, those studies are not applicable. If the studies did not have homes and property of comparable value (ie. shacks verses million dollar homes), then the studies are not applicable. If the areas understudy do not have comparable "visual" appeal (ie. in the scenic area), then the studies are not applicable. I submit that the studies mentioned are generally not comparable to this situation. Your DEIS needs to be updated with property value studies that represent this project and this neighborhood. If you knowingly ignore the potential impact to property values (similar to power lines), you can expect law suits demanding compensation. 10) Regarding "future developments", the "Middle Mountain Wind Project" should be updated to indicate that the Hood River County Commissioners have determined the project to be not feasible due to local discontent and the results of an independent study concluding the project would be financially unacceptable, contrary to the financial payback reported by their applicant. You might also consider adding the decision regarding the Seven Mile project; impacts to the local community and the scenic area cannot be justified. I know that you are tired, and a bit numb to the comments so far and yet to come, but I request that you review each as if you lived here. As if you come to the Gorge to enjoy the natural scenery, as if it was in your back yard. Remember, this project is in everyone's back yard, a National Scenic Area. Thank you

Testimony of Todd Myers
Executive Director, WindWorks! Northwest
EFSEC/BPA Draft EIS Hearing
Whistling Ridge Energy Project
Underwood, Washington
June 16, 2010

Mr. Chairman and Members of the Council. My name is Todd Myers and I serve as the Executive Director of WindWorks! Northwest, a wind power advocacy group with over 300 supporters. Our address is [redacted], Washington.

I have two comments on the Draft Environmental Impact Statement. I will first address the discussion of project alternatives under 2.3.2. Second, I will touch on the Draft EIS' discussion of visual impacts in 3.9.3.

The Draft EIS is correct in its assessment of the Whistling Ridge Energy Project as an "'integrated whole,' as a single power plant, not pieces of a whole, where some turbines may be eliminated." The project, at 75 megawatts, is the smallest project proposed or operating in Washington State. No exception.

The economic viability of the project hinges on SDS being able to complete the project as designed – at 75 megawatts.

Those who suggest that they can support the project if "only" seven turbines are removed are, in effect, telling you that the project should not proceed. It reminds me of the used car dealer who claims that he's offering you a great deal while acknowledging that the auto lacks a small item: a transmission.

In the interest of fair evaluation, the proposed project before you must be considered as an "integrated whole." Given the economies of scale and utility demand for renewable power, this project, if it is to proceed at all, cannot be downsized.

The Draft EIS offers a thorough and commendable discussion of visual impacts. One area where the document falls short is in assessing the value of the visual amenities that Whistling Ridge *currently* provides to the Gorge area.

The project opponents assert that SDS, by building a windfarm on its property will spoil the value of their property. This concern should can only be fully analyzed if both sides of the coin are examined.

It would be helpful to this discussion if the Draft EIS estimated the financial value of the visual amenity that SDS currently provides – a value, that members of SOSA and the Agri-Tourism Association now enjoy for free. We can only imagine how the authors of the EIS would calculate the value of this free amenity that is so dear to SDS' neighbors.

Would any of them pay to keep things as they are? And, since when does a neighbors' property rights extend to everything he or she can see from their boundaries? Since when was the Scenic Act written to control what can be seen from within the boundaries of the Scenic Area?

Mr. Chairman and Members of the Council, I commend you and BPA for commissioning an excellent environmental document, which provides a rock solid foundation on which to inform your ultimate action on the Whistling Ridge Wind Energy Project.

COMMENT LETTER 62

WR - DEIS
Public Comment #196

Washington State Energy Facility Site Evaluation Council
COMMENT FORM
Whistling Ridge Draft Environmental Impact Statement
Public Hearing and Comment Opportunity

Name: Shelley Bates

Address: [redacted]

Email Address: [redacted]

[X] **Add me to the Mailing list/Email list**

Please write any comments you have with respect to the

Leave this sheet in the Comment Box today, or mail it to:
EFSEC, PO Box 43172, Olympia, WA 98504-3172.
Comment letters must be postmarked by Monday, July 19, 2010.

I oppose the construction of an industrial installation of wind turbines on Underwood mountain, Whistling Ridge.

As a small business owner I am concerned with the negative impact on our tourism-based business, White Salmon Boatworks. Many people come to our town for the natural beauty. The installation will be harmful to the visual ambiance of our region. This project is too large.

Shelley S Bates

Use the back of this form if you need more room for your comments.

For more information about EFSEC's review of these project changes, please contact:
Stephen Posner, Compliance Manager, PO Box 43172, Olympia, WA 98504-3172,
call (360) 956-2063, or e-mail efsec@cted.wa.gov.

COMMENT LETTER 63

WR - DEIS
Public Comment #197

Washington State Energy Facility Site Evaluation Council
COMMENT FORM
Whistling Ridge Draft Environmental Impact Statement
Public Hearing and Comment Opportunity

Name: DON HOGARTY

Address: [redacted]

(Please include your Zip!)

Email Address: _____

☐ **Add me to the Mailing list/Email list**

Please write any comments you have with respect to the

Leave this sheet in the Comment Box today, or mail it to:
EFSEC, PO Box 43172, Olympia, WA 98504-3172.
Comment letters must be postmarked by Monday, July 19, 2010.

I'VE SPENT SEVERAL WINTERS IN DESERT HOT SPRINGS / PALM SPRINGS AREA AND NOT ONCE HAVE I SEEN ANY BIRD KILL FROM THE WIND TURBINE WIND FARMS.

Use the back of this form if you need more room for your comments.

For more information about EFSEC's review of these project changes, please contact:
Stephen Posner, Compliance Manager, PO Box 43172, Olympia, WA 98504-3172,
call (360) 956-2063, or e-mail efsec@cted.wa.gov.

Points to Consider
Wind Farm Start-up

June 16, 2010

I previously worked for a company that did wind farm start-up and have the following information for residents to consider:.

TRANSPORATION: Trucks transporting wind mills and turbines are regulated and permitted by the State DOT. Segments of each turbine is considered and 'oversized load' in both length and width. They can only be transported during certain times of the day, and require a pilot car in the front as well as the back of the transported section. One of the major concerns you will have to consider is the logistical barriers of the actual transport to the generator site. The turning radius of these oversized loads is in excess of standard tractor-trailers. Narrow and/or winding road will prohibit navigation of these over-sized loads.

ROADS: It is my belief that current roads may be inadequate due to actual road bed construction which was designed to accommodate residential vehicular traffic (need fortified road beds, wider surface areas, and gradual road curves to accommodate the over sized loads).

The actual weight of each over sized truck load could be more than double the normal weight of a tractor trailer.

CONSTRUCTION: To construct 50 wind turbines you will have to accommodate several hundred oversized trucks, cranes, transformers and substations, etc.

The actual construction of each wind turbine requires a concrete foundation which would ultimately require hundreds of cement truck deliveries on a 24-hour basis, 7 days per week. Once construction commences you can not stop the pouring process.

EIS: It was mentioned that new or improved roads would not be required to the generating site.

It is my understanding that the initial draft EIS referenced road construction needs while the new EIS eliminated that segment all together - because it was deemed insignificant. To that I would like to suggest the following:

- That you provide the community with an honest assessment of the impact that transportation of machinery and equipment will have on the community such as traffic noise, traffic flow interruption and generation of dirt/dust.
- Staging of trucks and other equipment if there is an interruption in access to the construction site. Is there an alternate route in the project plan or is it just a single access road to the site?

Dave Querry
[redacted]

COMMENT LETTER 65

RECEIVED
JUN 21 2010
ENERGY FACILITY SITE EVALUATION COUNCIL

WR - DEIS
Public Comment #199

16 June 2010

Underwood, Wa,

Dear EF SEC

My name is Helen Paules and I live permanently full time in Underwood. I have lived here 28 years. I am writing this letter to you to tell you of my support of the proposed Whistling Ridge Energy project. I have no business or personal connections to anyone connected to this project. I have no financial loss or gain from this project. But I do use Electricity and I support any alternative energy production. Even our President last night said we must become less dependent on current technology. I believe this project is a benefit to the county. Incidentally I live 1½ miles distant from the proposed project.

Thank you

Dr Helen Paules

[redacted]

COMMENT LETTER 66

WR - DEIS
Public Comment #267

Michelle, Kayce (COM)

From: Kelley Beamer [redacted]
Sent: Thursday, July 15, 2010 4:28 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area.

Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Kelley Beamer
[redacted]

Michelle, Kayce (COM)

From: Frances Hannah [redacted]
Sent: Thursday, July 15, 2010 4:33 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

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I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Frances Hannah
[redacted]

WR - DEIS
Public Comment #269

Michelle, Kayce (COM)

From: Carolyn Eckel [redacted]
Sent: Thursday, July 15, 2010 4:35 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Carolyn Eckel
[redacted]

WR - DEIS
Public Comment #270

Michelle, Kayce (COM)

From: Bob Welsh [redacted]
Sent: Thursday, July 15, 2010 4:37 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area.

Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Bob Welsh
[redacted]

Michelle, Kayce (COM)

From: Susan Shawn [redacted]
Sent: Thursday, July 15, 2010 4:38 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Susan Shawn
[redacted]

Michelle, Kayce (COM)

From: Bill Price [redacted]
Sent: Thursday, July 15, 2010 5:09 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Bill Price
[redacted]

Michelle, Kayce (COM)

From: Arran Thomson [redacted]
Sent: Thursday, July 15, 2010 5:11 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Arran Thomson
[redacted]

Michelle, Kayce (COM)

From: Todd Sargent [redacted]
Sent: Thursday, July 15, 2010 5:22 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Todd Sargent
[redacted]

WR - DEIS
Public Comment #275

Michelle, Kayce (COM)

From: Tim Wuest [redacted]
Sent: Thursday, July 15, 2010 5:22 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area.

Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Tim Wuest
[redacted]

Michelle, Kayce (COM)

From: Shauna Wirth [redacted]
Sent: Thursday, July 15, 2010 5:46 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Shauna Wirth
[redacted]

Michelle, Kayce (COM)

From: Paul Torrence [redacted]
Sent: Thursday, July 15, 2010 6:09 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Paul Torrence
[redacted]

Michelle, Kayce (COM)

From: Sandra Sellevaag [redacted]
Sent: Thursday, July 15, 2010 6:33 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridge line in the foothills of the Cascade Mountains. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area.

Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the Environmental Impact Statement to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Sandra Sellevaag
[redacted]

WR - DEIS
Public Comment #281

Michelle, Kayce (COM)

From: Chris Edwardsen [redacted]
Sent: Thursday, July 15, 2010 6:37 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Chris Edwardsen
[redacted]

Michelle, Kayce (COM)

From: J.G. Zettergren [redacted]
Sent: Thursday, July 15, 2010 6:43 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

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Judy Zettergren, Ph.D.
Gorge Supporter and land owner

J.G. Zettergren
[redacted]

WR - DEIS
Public Comment #283

Michelle, Kayce (COM)

From: Richard Stellner [redacted]
Sent: Thursday, July 15, 2010 6:51 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I want to express my concerns on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

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Richard Stellner
[redacted]

Michelle, Kayce (COM)

From: Diane Morris [redacted]
Sent: Thursday, July 15, 2010 7:25 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Diane Morris
[redacted]

WR - DEIS
Public Comment #285

Michelle, Kayce (COM)

From: Robert Sullivan [redacted]
Sent: Thursday, July 15, 2010 7:25 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

While the Whistling Ridge Project may follow the letter of the law in regards the restrictions on development in the Gorge Scenic Area, it does not follow the spirit of the regulations. The Gorge was set aside as a national scenic treasure and siting of the energy project within the sight lines from within the Scenic Area violates the intent of the Act. Alternatives must be considered. The National Geographic has ranked the Columbia River Gorge as number 6 among the most scenic areas in the world.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Robert Sullivan
[redacted]

WR - DEIS
Public Comment #287

Michelle, Kayce (COM)

From: Cyndi Ellis [redacted]
Sent: Thursday, July 15, 2010 8:24 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Cyndi Ellis
[redacted]

WR - DEIS
Public Comment #288

Michelle, Kayce (COM)

From: Lorna Hewitt [redacted]
Sent: Thursday, July 15, 2010 8:35 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Lorna Hewitt
[redacted]

WR - DEIS
Public Comment #289

Michelle, Kayce (COM)

From: Sandy Bushberg [redacted]
Sent: Thursday, July 15, 2010 8:36 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area.

It is becoming abundantly clear over the many years that wind turbines have been used in large scale farms, that there is a great deal more negative impacts than previously considered. The Columbia River Gorge National Scenic Area is one of a few remaining geographic gems in the world. There are NO good reasons to alter this magnificent area for economic, energy or political purposes.

Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Sandy Bushberg
[redacted]

Michelle, Kayce (COM)

From: Robert Henry [redacted]
Sent: Thursday, July 15, 2010 8:39 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Robert Henry
[redacted]

WR - DEIS
Public Comment #291

Michelle, Kayce (COM)

From: Robert Kelley [redacted]
Sent: Thursday, July 15, 2010 8:39 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Robert Kelley
[redacted]

WR - DEIS
Public Comment #292

Michelle, Kayce (COM)

From: Frank Mele [redacted]
Sent: Thursday, July 15, 2010 9:03 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Frank Mele
[redacted]

WR - DEIS
Public Comment #293

Michelle, Kayce (COM)

From: Trudy Maney [redacted]
Sent: Thursday, July 15, 2010 9:12 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area.

Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Trudy Maney
[redacted]

WR - DEIS
Public Comment #295

Michelle, Kayce (COM)

From: Nicole Jergovic [redacted]
Sent: Thursday, July 15, 2010 10:07 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Nicole Jergovic
[redacted]

Michelle, Kayce (COM)

From: Neal Keefer [redacted]
Sent: Thursday, July 15, 2010 11:07 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Neal Keefer
[redacted]

WR - DEIS
Public Comment #297

Michelle, Kayce (COM)

From: Bruce Cantwell [redacted]
Sent: Thursday, July 15, 2010 11:49 PM
To: COM EFSEC
Subject: Gorge May Not Be Best Site for Whistling Ridge Energy Project

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Bruce Cantwell
[redacted]

WR - DEIS
Public Comment #299

Michelle, Kayce (COM)

From: john knipe [redacted]
Sent: Friday, July 16, 2010 4:32 AM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

john knipe
[redacted]

WR - DEIS
Public Comment #302

Michelle, Kayce (COM)

From: Linda Browning [redacted]
Sent: Friday, July 16, 2010 6:39 AM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Linda Browning
[redacted]

WR - DEIS
Public Comment #303

Michelle, Kayce (COM)

From: Jenny Pompilio MD [redacted]
Sent: Friday, July 16, 2010 8:10 AM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Jenny Pompilio MD
[redacted]

WR - DEIS
Public Comment #304

Michelle, Kayce (COM)

From: Evelyn Bishop [redacted]
Sent: Friday, July 16, 2010 8:20 AM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Evelyn Bishop
[redacted]

WR - DEIS
Public Comment #305

Michelle, Kayce (COM)

From: mary vranizan [redacted]
Sent: Friday, July 16, 2010 8:30 AM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

mary vranizan
[redacted]

WR - DEIS
Public Comment #306

Michelle, Kayce (COM)

From: Heather Scott [redacted]
Sent: Friday, July 16, 2010 8:56 AM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Sincerely,
Heather Scott

Heather Scott
[redacted]

WR - DEIS
Public Comment #307

Michelle, Kayce (COM)

From: Judy West [redacted]
Sent: Friday, July 16, 2010 9:21 AM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Judy West
[redacted]

Michelle, Kayce (COM)

From: Leslie Underwood [redacted]
Sent: Friday, July 16, 2010 10:38 AM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Leslie Underwood
[redacted]

WR - DEIS
Public Comment #311

Michelle, Kayce (COM)

From: Julie Pittenger-Stanley [redacted]
Sent: Friday, July 16, 2010 11:15 AM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

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Julie Pittenger-Stanley
[redacted]

WR - DEIS
Public Comment #314

Michelle, Kayce (COM)

From: Charlotte Nuessle [redacted]
Sent: Friday, July 16, 2010 1:37 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Charlotte Nuessle
[redacted]

Michelle, Kayce (COM)

From: Stuart Emmons [redacted]
Sent: Friday, July 16, 2010 3:21 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Stuart Emmons
[redacted]

Michelle, Kayce (COM)

From: Steve Hocker [redacted]
Sent: Friday, July 16, 2010 3:37 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Steve Hocker
Elliot Hocker
Noah Hocker
Nathan Hocker

[redacted]

Michelle, Kayce (COM)

From: Planet Glassberg [redacted]
Sent: Friday, July 16, 2010 4:02 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Planet Glassberg
[redacted]

Michelle, Kayce (COM)

From: Gregory Shepherd [redacted]
Sent: Friday, July 16, 2010 9:59 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. Just because an area is windy doesn't mean it should be farmed for wind. This project could seriously impact the local tourist economy through its negative environmental and scenic impacts.

Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Gregory Shepherd
[redacted]

Michelle, Kayce (COM)

From: Glenn Johndohl [redacted]
Sent: Saturday, July 17, 2010 10:22 AM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Glenn Johndohl
[redacted]

Michelle, Kayce (COM)

From: rebecca schorzman [redacted]
Sent: Saturday, July 17, 2010 12:29 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

rebecca schorzman
[redacted]

Michelle, Kayce (COM)

From: Sally Bryant [redacted]
Sent: Saturday, July 17, 2010 1:23 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Sally Bryant
[redacted]

WR - DEIS
Public Comment #341

Talburt, Tammy (COM)

From: Steven Miesen [redacted]
Sent: Sunday, July 18, 2010 10:09 AM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

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Steven Miesen
[redacted]

Talburt, Tammy (COM)

From: Sylvia Groce [redacted]
Sent: Sunday, July 18, 2010 10:55 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

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Sylvia Groce
[redacted]

Talburt, Tammy (COM)

From: Barbara Tombleson [redacted]
Sent: Sunday, July 18, 2010 5:32 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

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Barbara Tombleson
[redacted]

WR - DEIS
Public Comment #345

Michelle, Kayce (COM)

From: Carl Schnoor [redacted]
Sent: Monday, July 19, 2010 7:44 AM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

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Carl Schnoor
[redacted]

Michelle, Kayce (COM)

From: Susan Peterson [redacted]
Sent: Monday, July 19, 2010 8:56 AM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

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Susan Peterson
[redacted]

WR - DEIS
Public Comment #347

Michelle, Kayce (COM)

From: Mirra Meyer [redacted]
Sent: Monday, July 19, 2010 9:19 AM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

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Mirra Meyer
[redacted]

Talburt, Tammy (COM)

From: Charlie Webster [redacted]
Sent: Wednesday, July 21, 2010 4:24 AM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Charlie Webster
[redacted]

COMMENT LETTER 67

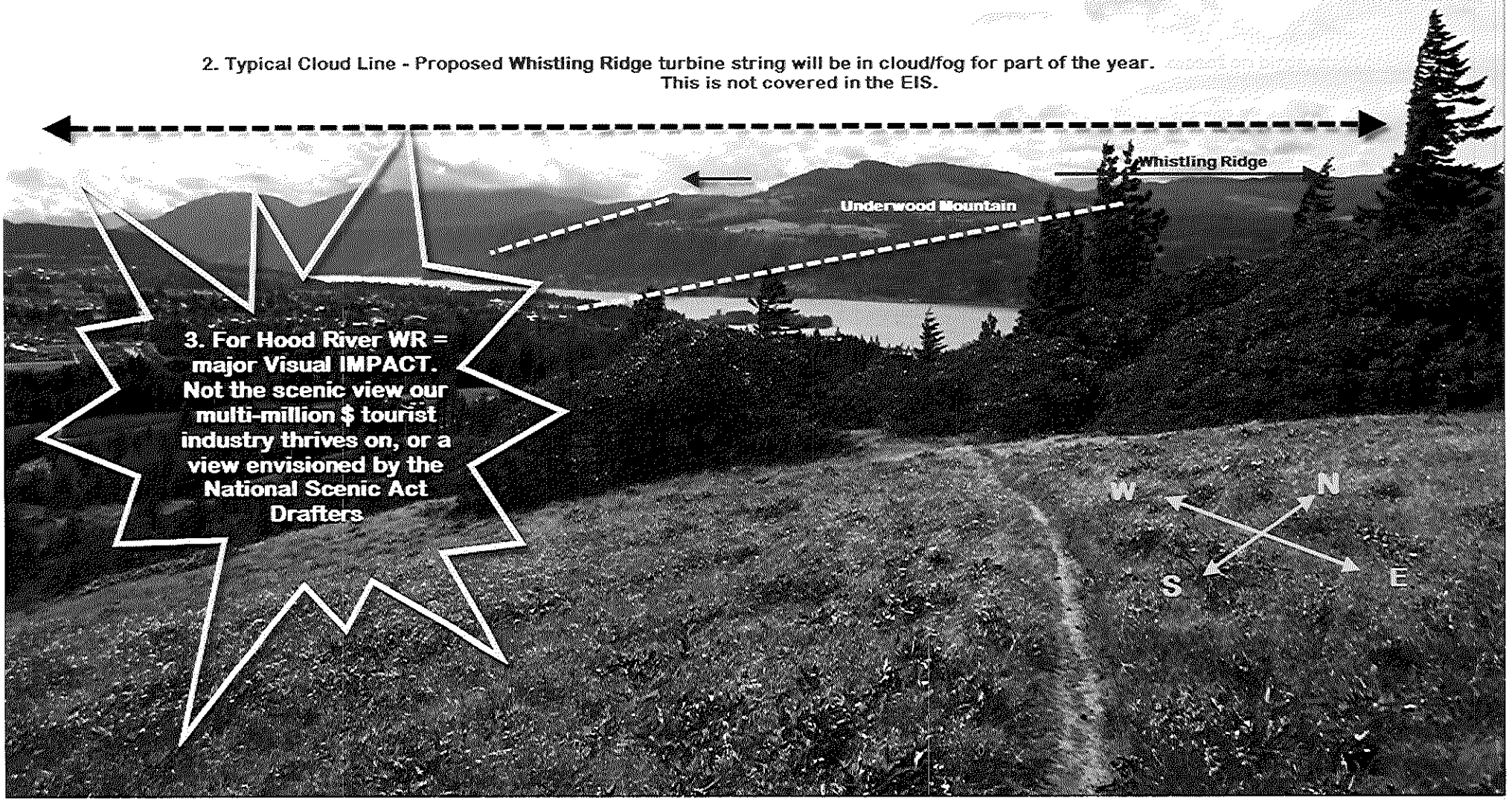
[redacted]

Comments for WA EFSEC hearing on
Whistling Ridge Energy Project,
Stevenson, WA 6/17/2010

WR - DEIS
Public Comment #200

1. Please hold another hearing, give us more than 3 WEEKS to analyize 1500 pages of technical material.

2. Typical Cloud Line - Proposed Whistling Ridge turbine string will be in cloud/fog for part of the year.
This is not covered in the EIS.

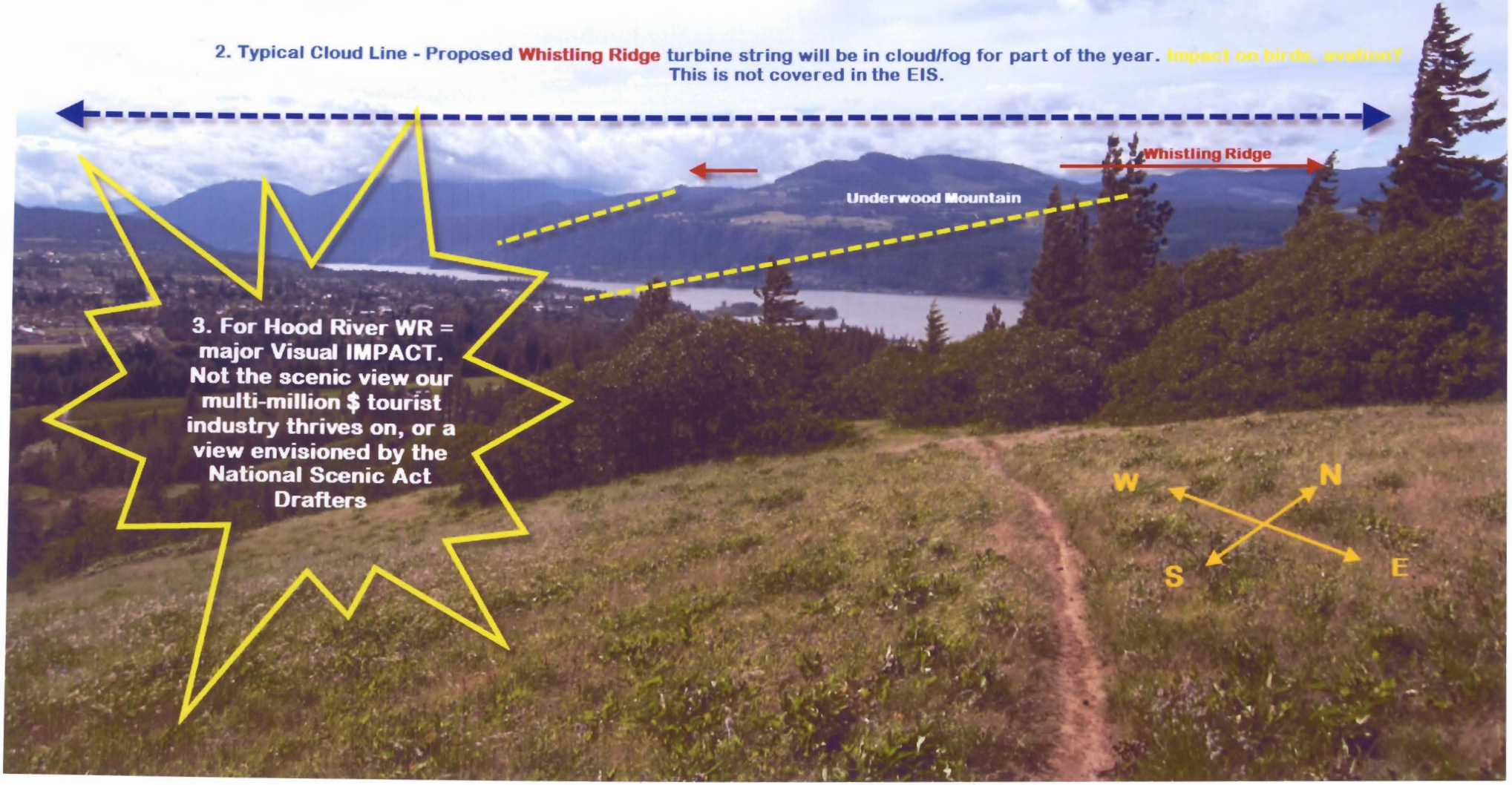


[redacted]

Comments for WA EFSEC hearing on
Whistling Ridge Energy Project,
Stevenson, WA 6/17/2010

1. Please hold another hearing, give us more than 3 WEEKS to analyize 1500 pages of technical material.

2. Typical Cloud Line - Proposed **Whistling Ridge** turbine string will be in cloud/fog for part of the year. Impact on birds, avation? This is not covered in the EIS.



Dan Spatz Mailing [redacted] 201

COMMENT LETTER 68 E-mail: [redacted]

Good evening, and thank you for this opportunity to comment. My name is Dan Spatz, and I reside at [redacted]. I've lived in the Columbia Gorge since 1967. Although I hold certain official capacities, I'm speaking tonight solely as a private individual. I'm a landowner and taxpayer in The Dalles and also in the Snowden area of Klickitat County, where my property – the place where I grew up -- has a view looking toward the Whistling Ridge project location.

I'm here to speak in favor of this project, for two reasons:

1) Global climate change is a reality, and renewable energy is part of the solution. As a society, we want to have our cake and eat it too: we want to reduce our carbon footprint, but we often oppose new sources of energy necessary to achieve that goal. We cannot conserve our way out of the climate change crisis. If we are to maintain our current standard of living, we will need radically different alternatives to fossil fuels on a grand scale, whether this means nuclear power, wind, solar, geothermal, tidal, wave energy, or most likely a combination of all of the above in concert with energy-efficient design. As we build out wind energy in more remote locations, we will inevitably face the need to develop wind power closer to places where people already live. While some may object to the visual appearance of wind turbines, I submit that these are far more attractive than strip-mining coal and tar shales, and drilling for deep-water oil in places like the Gulf of Mexico or Arctic National Wildlife Refuge. Wind energy is clean energy, and for that reason alone we should welcome the project before us.
2) I object to the contention that proximity to the Columbia Gorge National Scenic Area should prove a barrier to this project. The project is located outside the national scenic area boundary. The intent of Congress in drafting the scenic area legislation in 1986 was to enhance environmental protection and economic development within the Columbia Gorge. While we still face the need to precisely define certain scenic area boundaries and achieve a necessary mechanism for modifying those boundaries over time, it is very clear that the intent of Congress was not to restrict developments proposed outside the current scenic area boundary. This principle has already been demonstrated in Klickitat and Sherman counties, where wind farms are already visible from within the national scenic area, and the precedent so established should also apply elsewhere in regions adjoining but not included within the national scenic area proper. Yes, there will be some visual impact. But in keeping with my first point, as a society we cannot have our cake and eat it, too. Wind turbines or Gulf Coast oil spills? Not to over-simplify our options, but as a society we will be asked to make precisely this same choice many times, in many places, in the long decades ahead as we confront the global climate change crisis. We might as well face reality now. I vote for wind turbines.

COMMENT LETTER 69

WR - DEIS
Public Comment #202

I WAS IN SPAIN IN 2008 AND SAW MANY WINDFARMS--I FOUND THEIR MOVEMENT ENCHANTING AND A THING OF BEAUTY.

AMERICA IS A GREAT COUNTRY--AND A FORTUNATE ONE, BUT WE ARE AT A CROSSROADS REGARDING FUTURE ENERGY SOURCES.

I AM GLAD TO SEE SKAMANIA COUNTY TAKING A LEADERSHIP ROLE IN WIND POWER AND THE GREEN TECHNOLOGIES OF THE FUTURE.

SOMEDAY, FUTURE SKAMANIANS WILL LOOK BACK IN PRIDE AND SAY WE WERE AMONG THE FIRST TO RECOGNIZE THE NEW ENERGY WORLD, PUT ASIDE OUR PERSONAL DIFFERENCES, AND WENT WITH WHAT IS BEST FOR THE GREATER GOOD.

THANK YOU

Harold L Gailey

HAROLD L GAILEY

[redacted]

I wish to state my support for the Whistling Ridge Energy Project. This project will help reach the goal mandated by the voters of our state to make renewable energy a greater part of the state's energy consumption. It will help Skamania County continue to provide the services that we, the residents, demand and expect. It will also provide some much needed, high-paying stable employment opportunities for residents of the Columbia River Gorge.

I believe that we must, as citizens of this planet, accept our responsibility to find ways to utilize clean, renewable resources to meet our energy demands. As a nation we may have to make some sacrifices that will enable us to exploit the renewable energy resources that are available to us. We can no longer expect the rest of the world to provide us with cheap energy. We can no longer accept the damages to our planet caused by continued use of fossil fuels. We must move forward to develop new technologies that reduce our impact on the environment.

In my view, the potential benefits of this project outweigh any detrimental impact on the region.

John Hardham
[redacted]

Washington State Energy Facility Site Evaluation Council
COMMENT FORM
Whistling Ridge Draft Environmental Impact Statement
Public Hearing and Comment Opportunity

Name: JON OHLSON

Address: [redacted]
(Please include your Zip!)

Email Address: [redacted]

☐ **Add me to the Mailing list/Email list**

Please write any comments you have with respect to the

Leave this sheet in the Comment Box today, or mail it to:
EFSEC, PO Box 43172, Olympia, WA 98504-3172.
Comment letters must be postmarked by Monday, July 19, 2010.

I SUPPORT THE WHISTLING RIDGE WIND PROJECT. RENEWABLE ENERGY HAS STRONG FOUNDATION IN AMERICAS FUTURE ENERGY NEEDS. NEVER MORE SO THAN TODAY CONSIDERING OUR FOSSIL FUEL CRISIS IN THE GULF & OVER SEAS. OPOSITION TO THIS PROJECT FROM VARIOUS GROUPS ON THE GROUNDS OF IMPACT TO THE SCENIC AREA IS REDICULOUS. IT IS LOCATED OUTSIDE COL.G.S.A BOUNDRY LINES AND THEY HAVE NO RIGHT TO DICTATE LAND USE ON PRIVATE PROPERTY. WE NEED THE ECONOMIC BOOST THIS PROJECT WILL PROVIDE FOR SKAMANIA CNTY. - JOBS/SCHOOLS/TOURISM

Use the back of this form if you need more room for your comments.

For more information about EFSEC's review of these project changes, please contact:
Stephen Posner, Compliance Manager, PO Box 43172, Olympia, WA 98504-3172,
call (360) 956-2063, or e-mail efsec@cted.wa.gov.

COMMENT LETTER 72

WR - DEIS
Public Comment #206

Comments

Whistling Ridge Energy Project

Washington Energy Siting Council (EFSEC) Bonneville Power Administration (BPA)

Frank Backus

1. I am in favor of this wind project.
2. Environmental Impact Statement found no significant negative Impacts that would preclude the development of this wind project. Not fauna, flora nor scenic impacts.
3. This project is outside the boundary of the National Scenic Area.
4. Washington Voter have spoken, utilities are required to provide renewable energy to their customers. Here it is!!!
5. This project is compatible with the forestry zone of the surrounding property and it is compatible with the neighboring lands that are zoned agriculture.
6. This project will have a major role in securing the economic stability of Skamania County and of the SDS family of companies.

Frank Backus

Washington State Energy Facility Site Evaluation Council
COMMENT FORM
Whistling Ridge Draft Environmental Impact Statement
Public Hearing and Comment Opportunity

Name: Laurie Balmath

Address: [redacted]
(Please include your Zip!)

Email Address: [redacted]

☐ **Add me to the Mailing list/Email list**

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Wind power is important however every possible location is not the right location for windmills. Every windy ridge is not the right place for a windfarm. It is not necessary to put this wind power development in. there are too many people and livestock and wildlife in this area. The impact to the Scenic Area is too great. We may need more energy from sources other than oil. We may need to do more research on conservation however THIS windfarm is not crucial to solving the energy crises. The harm to the scenic area and local residents is too great.

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Jeff Tea(?) WOFW

COMMENT LETTER 74

WR - DEIS
Public Comment #208

1. Whistling Ridge comments, Stevenson , 6-17-10
2.
3.
4. I am opposed to this Project as DEIS written

It is hard for me to believe that the parties responsible for drafting this DEIS can be objective and impartial for this proposal. EFSEC is an agency known for siting energy facilities and the BPA is an agency which deals with power generation and distribution of that power. Nothing Personal, ~~[illegible]~~ It is your duty to be objective.

2. This DEIS is insufficient in that an appropriate EIS has a list of alternatives. This one only lists one action item and mentions ~~several times~~ throughout the document that it is one of the alternatives. How can the proposed action also be an alternative? The only alternative stated is the No Action Alternative. The applicant says that he cannot go below 70mW and is trying to disquise his unwillingness to minimize this project by saying that public utilities seeking to fulfill their RPS requirements need a minimum of this kind of output "...to be attractive." In one area it states that this project has to be defined as an "integrated whole" to be worthwhile yet in the design/mitigation measures ~~[illegible]~~ under Biological Resources that "Micrositing of turbines and associated facilities would allow any sensitive resources discovered during construction to be avoided." You can't have it both way.s

3. Pg. 1-7 states that "No other federal agencies have been identified as cooperating agencies for this EIS at this time." Cooperating, hmmm, is that because the NPS and FS have made concerned negative comments about this proposal as it now is written. Also, why have the Yakama Nation not been involved in the DEIS when they, as a sovereign nation, have legitimate cultural resource concerns. Any EIS is required to ensure that there are no impacts to cultural resources. On page 1-8 it states that "Other federal, state or local agencies also may have permitting or other approval authority for the proposed Whistling Ridge Energy Program. Those agencies may use this EIS in order to fulfill NEPA or SEPA responsibilities." Those agencies have an obligation to the public to do their own due diligence and evaluations, not depend on the project proponent's potentially biased data.

4. This DEIS states that the BPA substation would cover "4.25 acres and be sufficient for future installation of equipment if required for future development." What kind of future development----50 more wind turbines? I am concerned with scope creep. With the national and state mandates on "going green" I can see how once they are in, it would be much easier to expand the number of turbines. I don't want to see this project look like the ~~Goldendale~~ Klickitat projects,

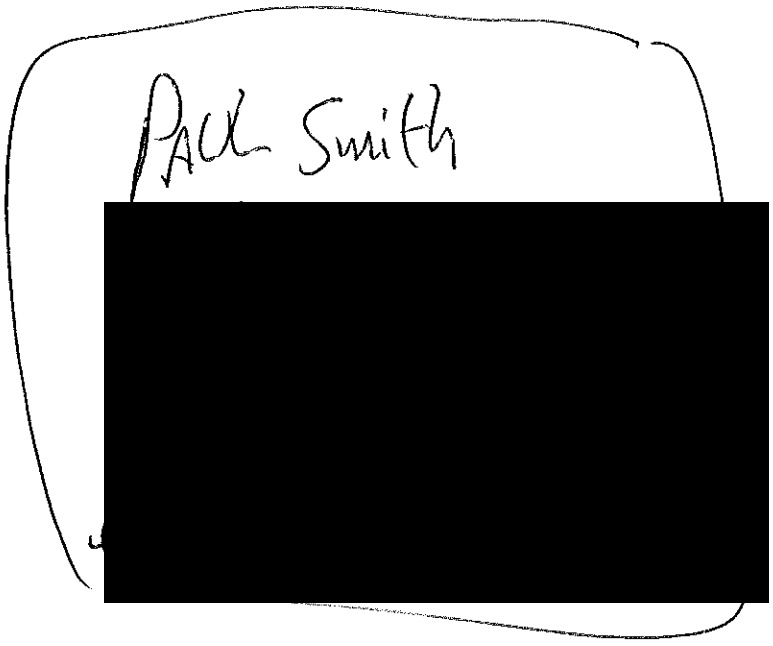
5. People come from all over the world to enjoy the majestic natural vistas the CRG has to offer, not man made ones. I don't think very many people would like to see wind turbines at Yosemite, Yellowstone or the Grand Canyon. Neither should they at this National Scenic Area, one of only 2 in the whole United states of America.

6. This EIS is whoefully insufficient in its evaluations of wildlife. It does a poor job of covering bat evaluations, lacks significant bird/bat dispersal data and has no mention of large animal. It is so bold as to state, "For potential iimpacts to big game species(deer and elk), coordination with WDFW will occur IF APPROPRIATE. It is a know wintering ground for Elk. Also what about cougar, bobcat, coyotes and all the other ~~so-call-big~~ game? It states that it will "Convene a Technical Advisory Committee to evaluate mitigation and monitoring programs for ~~for~~ impacts to wildlife and habitat----why is this not already in place?

This project is proposed at a right time in our local and national energy needs but placed in the wrong place. The space Needle is around 605ft. tall, these turbines could all be 426 ft. high. There is no way this project could be defined as "visually subordinate." If I want to see the Space needle, which also has a red light on top, I will go to Seattle. I don't want to see 50 space needles from ~~inside the national scenic area~~.

KVAs in the CRG.

Thank you.



Washington State Energy Facility Site Evaluation Council
COMMENT FORM
Whistling Ridge Draft Environmental Impact Statement
Public Hearing and Comment Opportunity

Name: MARY A. HALVORSON

Address: [redacted]
(Please include your Zip!)

Email Address: [redacted]

☒ **Add me to the Mailing list/Email list**

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WHAT GARRANTEE DOES YOU GIVE THAT LOCAL PEOPLE WILL BE HIRED FOR BOTH CONSTRUCTION AND EMPLOYMENT?

~~STOP~~ LAWSUITS. ~~PLEASE~~

THIS WOULD NOT BE 1ST COMPANY TO COME HERE AND PROMISE JOBS - THEN NOT BE ABLE TO BUILD OR NO PERMITS ARE ISSUED.

DO YOU HAVE PERMITS?

NEXT MEETING PEOPLE OUTSIDE OF THE AREA SHOULD NOT BE ABLE TO HAVE AN OPINION OR COMMENT ON WHAT HAPPENS IN OUR AREA! AS WASHOUGAL OVER TIME LIMIT MAN. OR PORTLAND OR HOOD RIVER!

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Stephen Posner, Compliance Manager, PO Box 43172, Olympia, WA 98504-3172,
call (360) 956-2063, or e-mail efsec@cted.wa.gov.

AS THERE IS BIG GAME THERE - WILL HUNTING STILL BE ALLOWED - My HUSBAND WOULD LIKE TO KNOW?

FRIENDS OF THE GORGE HAS WAY TOO MUCH TIME ON THEIR HANDS WINDMILLS HAVE IMPACT ON VIEWS - WHAT ABOUT WHITE SALMON AND THE LOGGER HANGERS ON CLIFF!

BIRDS MORTALITY! LESS CLOSE THE AIRPORT IN PORTLAND.

Why does Portland get to decide what goes in the gorge because it ruins their view, when we see only lights across the river?

And why should windows in a tunnel come before much needed jobs? THIS WAS A PLAN UP THE RIVER.

IF THERE IS ANOTHER MEETING IT SHOULD BE PEOPLE OF SKAMANIA County PEOPLE ONLY AS THEY ARE THE ONES IMPACTED.

COMMENT LETTER 76

WR - DEIS
Public Comment #210

June 17, 2010
[redacted]

Washington Energy Facility Site Evaluation Council
905 Plum Street SE
Olympia, Washington, 98504-3172

Re: Whistling Ridge Energy Project May 2010 Draft Environmental Impact Statement

Members of the Council,

The horrifying, large-scale oil contamination event in the Gulf has increased the pressure to develop viable, alternative sources of energy. Wind-generated power, popularly advertised as being "clean" or "green," is, however, not without drawbacks. The in-toto, as well as individual problems associated with wind turbines and large turbine arrays may, under certain circumstances and locations, outweigh their benefits.
at particular

Regardless of opinion regarding this proposed project, there must be unbiased, objective documents that permit the public access to information and to guide decision-makers to their tasks as well. The inattention to detail, lack of thoroughness, and to the appearance of fairness is very discouraging to see, especially in print. This EIS was created, with time to spare, compared to the time we have been allotted to review it and to prepare comment.

1. During a brief review of the referenced document, I was startled to note the appearance throughout, of a distinct bias. Right off the bat, in section 1.2.3.3, a discourse of almost a full page of text – five paragraphs worth – is entitled "Business Needs of the Applicant." No-one's "business need" is appropriate material for discussion in any EIS document, for what, I hope, are obvious reasons. (Only in a totalitarian regime is the "need" or desire of an individual more important than large-scale human, wildlife and scenic resources.) The only material in this section that is relevant- that dealing with the large number of temporary construction jobs that would result, and the small number of permanent jobs after project completion belongs elsewhere.

2. In view of the fact that no studies have been conducted in the US that determine what effect wind turbines have upon forest-dwelling species of wildlife, it is inappropriate and misleading to repeatedly state that 'No impacts are anticipated....." Frequent statements of conclusion appear throughout the document; some are nebulous, speculative, inaccurate or contradict the material provided in the previous text or appendices and add to the appearance of bias.

On page 3-77, it is confidently stated that "Operation of the project would result in no further impacts to habitats on the project site" despite a statement on Page 3-81 that "Because data on impacts to big game as a result of wind project operations is limited, it is difficult to predict the impact of the proposed project on wildlife using priority habitats on the proposed project site." ("Additional coordination with WDFW is ongoing, and would continue to address this resource.")

3. Almost all the mitigation measure introductory statements end with the phrase "...to the extent feasible." It is not always specifically stated who ultimately determines what is "the extent feasible." The appropriate responsible agency, entity or statute should be provided in the text, in the relevant paragraph, so that it can be more easily evaluated. This lack of clarity regarding responsible parties is also seen in Section 3.4.3 "Mitigation Measures"; it also resorts to "the extent feasible" phrase apparently with no one in mind.

4. More research data on human health in connection with wind turbine arrays is available than has ever been in the past, from both Europe and the United States. Unfortunately, it has not been common knowledge and therefore has not been reflected in public policy regulations. There has been testimony dealing with this subject in detail and this body of yet unrecognized information should be a major determinant in wind farm siting decisions. Please acquaint yourselves with the data before moving ahead.

5. The geologic and soils information is troubling even when one has seen the steep hillsides that this project proposes to disturb. Construction will require blasting, which can destabilize fragile habitats, and unpredictable effects may result over large periods of time. The soil types present at or immediately adjacent to the construction sites are not stable and the planned mitigation measures which aim to control erosion and slides may be difficult, if not impossible to achieve, as can be already seen at numerous locations in this portion of the county. Although downplayed in the EIS, significant erosion events will surely degrade water quality and habitat downstream tributaries as well as local aquatic invertebrate populations.

6. The Scenic Area impacts have been discussed by many already. It would be more than unfortunate to allow all of the effort that has so far been expended to maintain the unoccluded foothill views within the designated area to be despoiled by a project of this magnitude, even though it may be located just outside of the Scenic Area. To many, especially in these times, aesthetic values are worth advocating for.

7. The Columbia River flyway could be considered a cultural resource for the avian species. It has likely existed for a longer time than humans have been here and constitutes a known route for both north-south and east-west migrating birds. It is inconceivable that a project that is known to kill birds could be approved for an area located within the flyway.

Larger turbine blades and consequent slower rotation speeds have been reported to minimize bird fatalities, but the fact that Columbia River is the major western flyway in the United States negates this improvement since denser concentrations of birds would be present during migration flights. The rotation speeds mentioned in the document stipulated a wide range and was indicative that the authors were not aware that rotation speed guidelines purporting to offer some protection from bird strikes are available.

8. Although a two-year bird mortality monitoring study after construction is mentioned, no concern for documenting bat mortality is evidenced as no provisions for such are listed on Page 3-82, Section 3.4.82 under Mitigation Measures. This, despite the possiblility that two federal bat Species of Concern, Townsend's big-eared bat and Keen's myotis, are reported to " likely occur in the project area." The bat echolocation studies that were conducted at the project site were unable to determine bat species, but stated that "we expect that the potential risk to bats from turbine operations to be somewhat higher than the rates observed at other western facilities placed in non-forested environments. One estimate from Buffalo Ridge, Minnesota data seta predicted a mortality range from 2.2 to 20.8 individuals per year which, over time, certainly could have an impact upon a species of concern's breeding population numbers. The bat echolocation study consultants, Western EchoSystems Technology, Inc., recommended that "The post-construction monitoring program should be designed to accurately estimate the level of bat mortality." Why is it not included?

9. There is no mention of the requirement for providing alternative power sources for specific megawatt-production wind facilities. These are usually natural gas facilities. In what nearby communities would these be built? They should also be considered part of the cost of a wind facility.

10. I have never seen an EIS, especially for a project of this scope that has no other action alternatives. Although they are mentioned in the text, they must be dealt with as real possibilities, regardless of the fact that the proponent does not wish to spend the additional funds it is claimed they would require.

I plan to submit a lengthier statement dealing with additional issues by the July deadline. Thank you for the opportunity to comment, if only in a cursory manner. I realize that it would take a great deal of your time, but it would be wonderful if a more generous amount of time were allotted to speak, especially on an issue with so many facets of concern.

Sincerely,

Sallie Tucker Jones

COMMENT LETTER 77

June 17, 2010
Testimony of the Columbia Gorge Audubon Society, CGAS, before the Bonneville Power Administration and the Washington EFSEC Regarding the Whistling Ridge Wind Energy Project

Whistling Ridge is not so much about renewable energy development. We all support a renewable energy future for our nation, but this simply is the wrong project, at the wrong place, at the wrong time. The Condit Dam on the White Salmon River is going to be removed. Day-after-day, Condit churns out 8-10 megawatts of power, almost half of the firm power Whistling Ridge would produce. Should we rethink the facility's removal? No! Because it's been determined that salmon recovery is a higher priority than renewable energy from the White Salmon River.

So it is with the Columbia Gorge. The Gorge was set aside by Congress as a special place to be preserved and protected for all future generations. No one anticipated the abomination of 500', gleaming white towers with rotating blades being located on ridges just outside the National Scenic Area boundaries, otherwise the lines would have been drawn differently. If this proposal is permitted along with other proposals in the east Gorge, the iconic landscapes that the Scenic Act purports to protect will become subordinate by day to giant towers with whirling blades and by night to flashing red lights. If the Whistling Ridge project is permitted, then it will be time to ask Congress to redraw the boundaries. The incongruity of industrial wind energy projects up-and-down the Gorge on ridge-tops just beyond the Scenic Area boundary flies in the face of the very intent of Scenic Act itself.

A cheer-leading flier sent out by the project proponent asserts that in a "single year" Whistling Ridge will displace X barrels of oil, X tons of CO2 and X numbers of cars off the road. This is a cruel hoax. Where is the evidence for such an assertion? In fact, for every megawatt of wind energy developed, an off-set of fossil fuel-fired megawatt has to be developed as wind energy's unpredictability destabilizes the electrical grid (Northwest Power Planning Council). With a burgeoning population, naked consumerism and a Wall Street-driven, cowboy economy, we'll need every barrel of oil, every ton of coal and every cubic foot of gas to keep the economy humming. The best evidence we have for this is the Gulf oil "volcano". Even though the Gulf Coast is awash in oil - threatening their very way of life - elected official have lined up to demand that the moratorium on deep-water oil drilling be lifted so that business as usual can continue. Moreover, the Whistling Ridge developer, SDS and its partners, were paid 20 million dollars in public money by BPA to NOT develop a gas-fired project in Bingen. Where was the concern by SDS for CO2 emissions then?

The flyer further asserts that there will be no "harm" to wildlife populations. This also is a hoax. The raptor mortality from wind energy projects developed in Klickitat county is ten times what the EIS predicted ("First Golden Eagle killed by Wind Turbines in WA State", Kathy Durbin, The Columbian). What went so terribly wrong? CGAS believes the cozy relationship between project proponents and EIS preparers is what went wrong. Getting a permit opens the spigots to fat state and federal subsidies, without which projects like Whistling Ridge would be unprofitable to develop.

By comparison, the wind energy industry makes much of birds killed by plate glass windows, cats and vehicle grills, but how many eagles, falcons and hawks are killed by these objects? Wind energy is very selective in its bird mortality and raptors are some of our most threatened bird populations. I would not want to be a raptor trying to negotiate the mid-Columbia landscapes these days, would you? And the US Fish & Wildlife Service wants to reintroduce the California Condor to its former range in the Gorge? What a joke!

At an initial hearing before EFSEC on Whistling Ridge, Wallace Stevenson, owner of SDS, said that his company has always tried to do the "right thing". CGAS assumes that this was said to help persuade EFSEC to render a decision favorable to Whistling Ridge. We would like to balance the record with this: Concurrent with establishing the National Scenic Area, Congress designated the lower White Salmon River under the National Wild and Scenic Rivers Act. The management area boundary included some SDS property, including lands along Spring Creek, a critical area for salmon spawning once they are reintroduced. The Forest Service offered SDS a land exchange so these lands would not be logged and the values for which the river was designated could be preserved. Apparently SDS was unable to get above appraised values for their lands, so the company cut the forest down to include Spring Creek and other areas where hiking trails and picnic areas were planned. Now we ask you, was this the right thing to do?

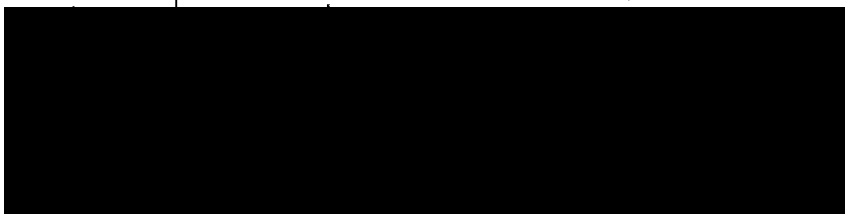
Lastly, the Northwest is not short on renewable energy. It's conveniently overlooked by industrial wind energy proponents, but 10,000 megawatts of high-quality renewable energy is churned out daily by the Columbia River hydro system. And it's come at a high price: Celilo Falls, once the Northwest's cultural and natural history icon, is gone and the world's greatest natural salmon fishery has been driven to near extinction. A sprawling industrial swath of wind turbines now stretches along both sides of the Columbia from Maryhill, WA to Walla Walla. These Columbia River landscapes of "Lewis and Clark" and "Oregon trail" fame have been disfigured and are no longer available to those who aspire to capture the spirit of these storied places. It would seem that we in the Northwest are selling our souls - our incomparable landscapes - to satisfy California's insatiable need for so-called "green" energy.

So, SDS and your sidekick, WindWorks Northwest, don't tell us that now we need to deface the Columbia Gorge to chase a few more "green" megawatts. The region has paid its dues. The wind energy industry, just like the dam builders, will hound out every wind resource to erect their turbines because a pot of money in state and federal subsidies await a secured permit. It is up to thoughtful citizens to insure that some areas are off-limits. Cries of NIMBYism can be heard, but let us not be made to feel guilty by renewable energy wonks, the wind energy industry, and county commissioners who do their bidding, for standing up to protect the last best places.

CGAS will comment further on the deficiencies our Society considers to be in the DEIS in another document within the comment period.

Thank you,

Jill Barker, spokesperson for the Columbia Gorge Audubon



COMMENT LETTER 78

ANN LUEDERS [redacted]

WR - DEIS
Public Comment #213

Please accept my comments below in support of the Whistling Ridge Energy Project:

Eminent Domain: the right of the government to take property from a private owner for public use by virtue of the superior dominion of its sovereignty of all lands within its jurisdictions.

Many times, over many years - the government has used the power of eminent domain to take property. Skamania County witnessed this in 1986 when Congress passed Public Law 99-663: The Columbia River Gorge National Scenic Area Act. This action, in and of itself was not a physical taking for which compensation was paid. It was a legislative action that caused, and continues to cause great economic hardships for individuals and communities within its boundaries.

Twenty four years later - a different sort of **eminent domain** is trying to grasp hold, and take something from Skamania County. Again, it isn't a physical taking - but it is a taking that has the potential to exacerbate economic hardships and impede solid, community friendly developments like the Whistling Ridge Energy Project. This taking is done when special interest groups use financial resources to seed public hearings with naysayers, and in essence - drown out the voice of residents whose communities are most directly affected by the proposed project.

Implementation of the Whistling Ridge Energy Project has many benefits, some not yet known, for Skamania County. The initial economic benefits associated with the project construction, such as local procurements and the 100+ family wage jobs are just the boost that we need. Consider the trickle down effects that will continue at completion of the project - $731,000 in annual tax revenue, small business growth due to increased local spending, which in turn leads to business success, job growth and more.

At this point, many people would like to believe that a growing tourism base will carry us through these dark economic times. Some would even say that tourism can sustain Skamania County. I argue this concept by noting the lack of developable commercial land available within Skamania County. I would further note that while tourism is important to our communities, we need development that provides jobs and increases tax revenues without relying on the ebb and flow of tourists.

Skamania County needs the Whistling Ridge Energy Project to be a success - and SDS can make it happen. Projects such as this, which are environmentally friendly, economically friendly and community friendly spur similar ideas. They almost force existing and new companies to reconsider how they plan to operate in communities that need growth - but hope to maintain the hometown, rural area environment.

As the council continues with the hearing tonight - I would ask that you consider who is sharing their comments for and against this project. Those for the project - I suspect they live here, and have for a long time. I suspect that they have seen what Skamania County once was, what it could be - and how this project will be of great value to our home.

A Lueders

Ann Lueders
[redacted]

RECEIVED
JUN 21 2010
RGY FACILITY SITE
UATION COUNCIL

COMMENT LETTER 79

[redacted]

6-17-10

WR - DEIS
Public Comment #215

Washington Energy Facility Site Evaluation Council
905 Plum Street SE
Olympia, WA 98504-3172

Re: Whistling Ridge Energy Project Draft EIS, May 2010

Council Members:

The Whistling Ridge draft EIS is basically well organized and readable. Nevertheless, it is insufficiently thorough and contains specific inaccuracies and subjective conclusions. Some shortcomings we noted are:

1.) An appropriate EIS should list a range of alternatives. However, the draft lists only one action alternative. More alternatives could be developed by such means as relocating or eliminating problematical turbine sites.

2.) Applicant SDS owns 70,000 acres of land; within this expance, the draft claims that Whistling Ridge is best suited for a wind farm. But considering such large ownership, plus numerous valid concerns associated with Whistling Ridge, the draft should address in detail other potential wind power locations on SDS lands.

3.) Avoidance of negative visual impacts is a primary objective of the Columbia Gorge Scenic Act, a fact that the draft purposely downplays. For example, no wind turbines are now visible from highways within the Scenic Area, but the draft indicates that they are. The draft achieves this misconception by making no distinction between views of turbines from the east end of the gorge outside of the Scenic Area and views from within the Scenic Area itself. Such intentional deception should be removed.

4.) Considering item 3 above, plus information now in the draft (including "Adverse Effects that Cannot be Avoided") and much public testimony about visual concerns, statements like one on page 3-154 are inappropriate and should be excised or restructured; that arbitrary statement claims that: "The project would have only minor to moderate impacts on visual quality as viewed from travel corridors inside the scenic area."

5.) The EIS should clearly state that, should this proposal be approved, it would set a precedent by allowing the first wind farm visible from within the Columbia Gorge Scenic Area.

6.) The draft also does not state, as it should, that this project would be the first such project allowed on Pacific Northwest forest lands. Moreover, the draft should recognize that no comprehensive studies have been made concerning effects of wind turbines upon Pacific Northwest forest dwelling wildlife.

7.) Potential impacts on mammals other than draft-mentioned bats and a single squirrel species should be described in the EIS. What animals are present in what relative numbers, and which are most likely to be driven from or avoid the area because of the turbines?

8.) Estimates of expected turbine-caused avian and bat mortalities should be included by utilizing available information from studies at existing wind farm projects. Such estimates would perhaps be difficult for those bird and bat species that prefer forest habitats. But most bird species that frequent Whistling Ridge (87 species, including the bald eagle and five others of "Special Concern", have been recorded there) are also found around wind farms where mortality studies have already been made. To simply state, as the draft now does, that the turbines would "not affect viability" of bird and bat populations "in the region" is quite inadequate. Cumulative impact data, rather than unfounded beliefs, are necessary in making decisions of the magnitude that this proposal encompasses.

9.) Since Class I Underwood Loam soil has "high potential for erosion from water" (pages 3- 5 and 6), why are at least 8 proposed turbines located on or directly adjacent to that soil type? And at least 18 turbines appear to be positioned on or near Class II soils having a "high landslide hazard rating" (pages 3-7 and 8). Consequently, geotech and/or soils scientists should closely examine those sites of questionable stability. Work of that nature has apparently been brief or lacking. Ultimately the EIS should define turbine proximity to both Class I and II soils and provide detailed plans to avoid and correct erosion, especially where those critical soil types might be involved. Another example of unsubstantiated conclusions sprinkled throughout the draft is this statement on page 1-37: "The proposed action would contribute incrementally, though in a minor way, on cumulative impacts to soil erosion ..... as well as vegetation, terrestrial wildlife species and bird and bat species in the region."

10.) The project would require substantial soil relocation. Spoils sites should therefore be approved by a qualified specialist and their locations identified in the EIS draft.

11.) We have examined previously submitted and forthcoming testimony from Keith Brown PhD regarding public health implications of this proposal. Based upon his solid review of pertinent research, we conclude the EIS cannot assure that health of residents living in the Whistling Ridge vicinity would not be adversely affected by turbine noise. Can the developers of the EIS draft provide such assurance? If not, noise concerns should alone exclude approval of this project. And human health concerns from expected turbine noise should be added to the draft's growing list of "Adverse Effects that Cannot be Avoided."

12.) The draft emphasizes anticipated monetary benefits derived from the project. It should also describe expected government expenses associated with the proposal. Too, the draft should include expected short and long term monetary benefits from continued timber harvest (the No Action alternative) at Whistling Ridge.

13.) Amid the draft's generally lucid narrative is the following mysterious sentence on page 1-9: "The site has a long history of commercial logging and associated absence of native habitat, reducing or eliminating the need to clear additional forest land." Could someone decipher that for us?

Thank you for the opportunity to comment on this draft. Please respond to our comments and concerns in the next version of the EIS.

Columbia Gorge residents,

Willemina Niosi MD
and Jim Hutchison

cc: BPA

TESTIMONY OF JAMES M. HUTCHISON
TO THE WASHINGTON ENERGY SITING COUNCIL
REGARDING SDS WIND POWER APPLICATION

The SDS proposed wind turbine field you are now studying is unique in several respects: It would be the first such project located directly adjacent to the Columbia River Gorge Scenic Area and would introduce turbine towers visible from various locations within the Scenic Area. The Gorge Act, though it did not visualize tall towers that would impact views from the gorge, is very specific about aesthetics. Since the Act's implementation, even single nonconforming houses have generated extensive debate.

Impacts on timber production and wildlife are major concerns related to the proposal. SDS intends to reduce all vegetation to no more than 15 feet high within 150 feet of each turbine. Within the next 350 feet, vegetation would be kept less than 50 feet high. Nearly all timber harvest would thus be permanently eliminated for approximately 18 acres around each turbine. For a 100 turbine field, his would total 1,800 acres, or nearly 3 square miles, of lost timber production. Turbine access roads and appurtenant facilities would multiply this loss several fold.

Numerous wildlife species, not just those threatened or endangered, rely of forest habitats. Bird mortality from wind turbines is fairly well documented, but most such studies have focused on turbines located outside of forest areas. Other wildlife concerns are associated with the SDS proposal; these concerns include seasonal use patterns, travel corridors, habitat alteration or removal, soil loss and associated stream sedimentation, and area abandonment by wildlife due to turbine noise. Many animals, with hearing more acute than ours, can be detrimentally affected by noise. Considering these and related concerns, the Washington Department of Fish and Wildlife's recommendation for a comprehensive cumulative effects analysis should be required for this or any wind turbine application, especially when proposed in a forest setting.

Various kinds of EIS studies are typically prepared and funded by the projects' proponents. However, for this and other wind power projects in Washington, your agency, the Energy Siting Council, prepares the EIS. That approach appears a most questionable use of public funds for this highly contentious proposed gorge project which the Governor may well not approve in the long run.

A Skamania County representative will apparently join the Siting Council to consider the Whistling Ridge turbine proposal. That person should logically be as open-minded and nonbiased as possible. Yet, it should be stressed that Skamania County's Board of Commissioners is already on record as favoring this proposal, plus another controversial proposal by SDS for a large rural resort within the Gorge Scenic Area, plus a big tribe-sponsored gorge gambling casino at Cascade Locks. Perhaps a bit of bias involved there!

This wind power application involves several precedents: No large wind power installations are in or next to the Gorge Scenic Area, and none in the Pacific Northwest

are located on forest lands. Impacts on wildlife and timber harvest in such locations are essentially little studied and unknown. Wind is a legitimate source of power production, but only if it does not conflict overly with other values. In this case, placing multiple wind turbines which would remove hundreds of acres of sustainable tree harvest on forest lands favored by many forms of wildlife immediately adjacent to the Gorge Scenic Area appears substantially unwise.

James M. Hutchison 5-6-09
Retired fish and wildlife biologist
[redacted]

WR - DEIS
Public Comment #216

June 17, 2010

EFSEC
905 Plum Street SE
Olympia, Wa 98504-3172

RE: Whistling Ridge Energy Project
Skamania County, Wa

To whom it may concern:

We are residents of Skamania County, Washington and would like to provide our support for the proposed Whistling Ridge wind power site. Alternative sources of energy are a vital part of our future, and fit with National goals of implementing programs to achieve energy sources. We commend SDS for taking the initiative to research and implement this energy source west of the Cascades. The analysis of mitigation methods to achieve a safe and effective energy source such as wind power have already been implemented in other areas of Washington State, as well as throughout the world. We are hoping to see more of these projects implemented in the future.

Sincerely,

James and Cynthia Shank

[redacted]

RECEIVED
JUN 2 : 2010
ENERGY FACILITY SITE
EVALUATION COUNCIL

WR - DEIS
Public Comment #217

COMMENT LETTER 81

[redacted]

Dear Washington EFSEC

RE: Governor Gregoire **must Support** Whistling Ridge

First and foremost, I wanted to be brief and not waste your time. I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would have significant positive economic impacts without effecting wildlife and plant habitat. In my opinion, this project would **NOT** affect any scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire **approve** this project.

I was born, raised and currently live next to this proposed project site. I have found that many people form an opinion based on untrue facts. I have read and reviewed the draft environmental impact statement, and in doing so have evaluated all the pros and cons of this project. Like any project you have people on both sides and sometimes in the middle. I feel that it is obvious that the pros way outweigh the cons.

This project is a must; and quite frankly a need here in our community! It is good for our economy and for the future need for energy. I am in full support for renewable energy. We need to understand for our future to be successful, this project must go through. SDS Lumber Company has worked hard and has given so much to this community. Most of the people that are opposing this do not live in this area and do not really understand what our needs are right now and what they will be in the future. Thank you for your time.

Ryan Kreps

[redacted]

COMMENT LETTER 82

WR - DEIS
Public Comment #192

Talburt, Tammy (COM)

From:	repar [redacted]
Sent:	Monday, June 21, 2010 11:31 AM
To:	COM EFSEC
Subject:	Repar-Comments-Whistling Ridge
Attachments:	Article_too much BPA elec_11June2010.doc; Article_birds_wind_08June2010.doc; Wind and gas plants_article_Feb2010.doc; Comments_1_DEIS_17June2010.doc
Categories:	Yellow Category

Dear EFSEC,
Attached, please find my e-comments and attachments from the June 18th meeting in Stevenson. Thank you very much. If you have questions or comments, please do not hesitate to contact me./Mary

Mary J. Repar
[redacted]

Mary J. Repar

[redacted]

17 June 2010

EFSEC
905 Plum Street SE
Olympia, WA 98504-3172
e-mail: efsec@commerce.wa.gov

BPA
Public Affairs Office – DKE -7
P.O. Box 14428
Portland, OR 97293-4428
Toll-free comment line: 800.622.4519
FAX: 503.230.3285
503. 230. 4145
www.bpa.gov/comment

Re: Preliminary Comments and Questions on the Whistling Ridge Energy Project Draft Environmental Impact Statement: Cumulative Impacts, Carrying Capacity, Energy Production, Economic Analysis

Dear EFSEC and BPA,

These are my preliminary comments and questions. I will be making further comments during the public comment period.

Let me be blunt: in reading the Cumulative Impact Analysis section in the DEIS, 3.14, p. 3-264, I was perturbed to find that there have not been any cumulative impact analyses done. There are statements made about cumulative impacts but no analyses. **The basic refrain appears to be that, in the past, bad environmental things happened in the project area, bad things will happen in the present because of the project, and this will lead to more bad things happening in the future!** This is not cumulative impact analysis.

The NEPA process must use critical analyses for Federal projects and this one qualifies because of BPA's interest. The **Council on Environmental Quality's Considering Cumulative Effects: Under the National Environmental Policy Act** Handbook gives pretty clear methods on analyzing cumulative effects. Table 5.3, p. 56, Primary and special methods for analyzing cumulative effects, gives seven primary methods and four special methods for analyzing cumulative effects. (I submit the Handbook into the record.) For example, what I did not see in the DEIS was a Trends Analysis, which is #6, in Table 5.3 of the CEQ Handbook—"Trends analysis assesses the status of a resource, ecosystem, and human community over time and usually results in a graphical projection of past or future conditions. **Changes in the occurrence or intensity of stressors over the same period can also be determined. Trends can help the analyst identify cumulative effects problems, establish appropriate**

environmental baselines, or project future cumulative effects. I saw no environmental baselines data in the DEIS. Where is it? With out baseline data, cumulative impacts/effects are very hard to quantify.

Another example, #5, Modeling, under Primary Methods, states "Modeling is a powerful technique for quantifying the cause-and-effect relationships leading to cumulative effects, can take the form of mathematical equations describing cumulative processes such as soil erosion, or may constitute an expert system that computes the effect of various project scenarios base on a program of logical decisions." The strengths of this method are: it "can give unequivocal results; addresses cause-effect relationships; quantification; can integrate time and space." Weaknesses are: "need a lot of data, can be expensive, intractable with many interactions."

Just two examples, and there are many more, from the DEIS, I believe, show its inadequacy, especially in cumulative impacts analysis:

In 3.14.3.4, Vegetation and Wetlands, p. 3-272, the proponent states: "Past and present land development, timber harvest, and agricultural uses have resulted in a **cumulatively significant change** in the composition of vegetation and habitat types in the project vicinity. In general, land development and agricultural uses have resulted in conversion of forested areas to non-forested areas, and timber harvests have resulted in a mosaic of forest ages, with average stand age declining over time from relatively short stand rotations. Changes in stand structure and complexity, patch size, and species distribution also have occurred. Few large, old-growth conifers or late-successional stands exist **[my questions: how many, where are they located, is there a map, etc?]** in the general project vicinity. **Accordingly, past and present uses have resulted in cumulative habitat conversion and an ongoing pattern of habitat fragmentation. [my questions: how much fragmentation, what kind of fragmentation, affecting which species, etc.]** Reasonably foreseeable future actions, such as ongoing land development and timber harvests, **would continue this trend.**" [my emphasis] And, it goes on to say: "Project construction would take place in the context of the existing use of the project vicinity generally for commercial forestry, which includes regular cycles of clearcutting and reforestation. **Nonetheless, by removing trees and other vegetation in the wind project area for the life of the project, development of the Proposed Action would contribute incrementally, though in a relatively minor way, to these cumulative impacts.**" This is not a cumulative impact analysis, wherein all the past, present, and future habitat fragmentation would have to be quantified, and then a cumulative impact analysis done on the project area. And then this project would also have to look at habitat fragmentation in the geographical areas surrounding the project in order to get a total picture of all the habitat fragmentation. Cumulative impacts are not done on a project by project basis with no additive analyses. Regional cumulative impacts matter.

In the same section, p.3-273, Wetlands, the DEIS states: "Incremental losses and degradation of wetlands over time have cumulatively depleted **[my questions: how much, maps, species affected, etc.]** wetland resources in the United States. In the project

vicinity, wetlands likely were previously impacted by construction of a variety of activities, including development of roads and railroads, agricultural activities, and past timber harvests. **[my questions: what are the cumulative impacts on the wetlands from all this past and present activity? How will your project affect these cumulative impacts?]** Reasonably foreseeable future actions **may also affect** wetlands in the project vicinity, but it is expected that these future projects would be required to avoid, minimize, and compensate for any potential impacts to wetlands from filling or other activities as part of project Section 404 permitting requirements. Regardless, because **construction and operation of the proposed wind project would not impact wetlands, implementation of the Proposed Action would not contribute to cumulative impacts to wetlands.**" [my emphasis]

I'm sorry, we're supposed to take their word for it that their project would not impact wetlands??? Where is the cumulative impact analysis of the wetlands in the area?

This is not cumulative impacts analysis. It is wishful thinking. And wishful thinking doesn't get the project okayed. I will be submitting further comments on the cumulative impacts at a later date.

We have not even touched upon **Carrying Capacity Analysis**, which should be applied to a wide range of resources to address cumulative effects. From the CEQ Cumulative Effects handbook: "Cumulative effects are a more complex problem for whole ecosystems, because ecosystems are subject to the widest possible range of direct and indirect effects. Analyzing the cumulative effects on ecosystems requires a better understanding of the interworkings of ecological systems and a more holistic perspective. Specifically, ecosystem analysis entails new indicators of ecological conditions including landscape-scale measures. In addition to these two special methods, analyzing cumulative effects on human communities requires specific economic impact analysis and social impact analysis methods." Where are the special economic impact analyses and social impact analyses for this project? Cumulative economic impacts don't just mean the impacts to the local area. Cumulative economic impacts are and should be regional in nature and it is prudent to ask what the cumulative impacts of this wind farm will be on our region. Will the impacts be harmful or beneficial? No one can answer that because there is no in-depth analysis in the DEIS.

I also have some questions for BPA:

Questions for BPA:

1) Even if there are multiple wind farms integrated into your system, do you have to operate the grid as if there were NO wind farms connected to the grid, since wind can be unpredictable and inconsistent?
2) If there is no wind and the dams cannot let water through because of other issues (i.e., fish protections), do you have to have backup natural gas plants to produce the added electricity that the wind turbines would be providing? (I am assuming that if the wind farms provide X amount of energy to the grid, BPA will sell X amount of energy to make more money, and the people to whom this X amount of

energy is sold would not be happy if they were not getting their X amount of energy, so if the wind is not blowing and the water is not flowing, the energy would have to come from somewhere, wouldn't it?)

3) Does BPA have any plans to build or partner in any natural gas plant projects?
4) How big would these natural gas plants have to be?
5) How is BPA going to back up the real and potential wind energy production from all of these wind farms?
6) Transmission lines:
    - Is BPA going to have to build more transmission lines?
    - Where would these lines have to be built, if they are needed?
    - What kind of lines would have to be built to accommodate all the increased wind energy production?

I would also like to submit the following articles into the record: "Swollen Columbia River churns so much electricity BPA is giving some away," by Ted Sickinger—BPA generating power 144 percent of normal Spring generation—so what to do with all this "extra" power, The Oregonian, June 11, 2010; and, "Birds vs. the wind farms," by Hal Bernton, The Olympian, June 08, 2010—"Based on that information, the wind power turbines currently operating in Oregon and Washington kill more than 6500 birds and more than 3000 bats annually."; and, "Increased Costs are Blowin' in the Wind," by todd Wynn and Eric Low, Cascade Commentary, from Cascade Policy organization, February 17, 2010—"Wind energy on the Pacific Northwest's electricity grid has increased substantially. Often overlooked are the impacts of increasing wind generation on the reliability and affordability of electricity that very well might outweigh any of the promised environmental benefits."

Thank you for this opportunity to submit my comments. I will be making more comments on the entire DEIS at a future date.

Mary Repar

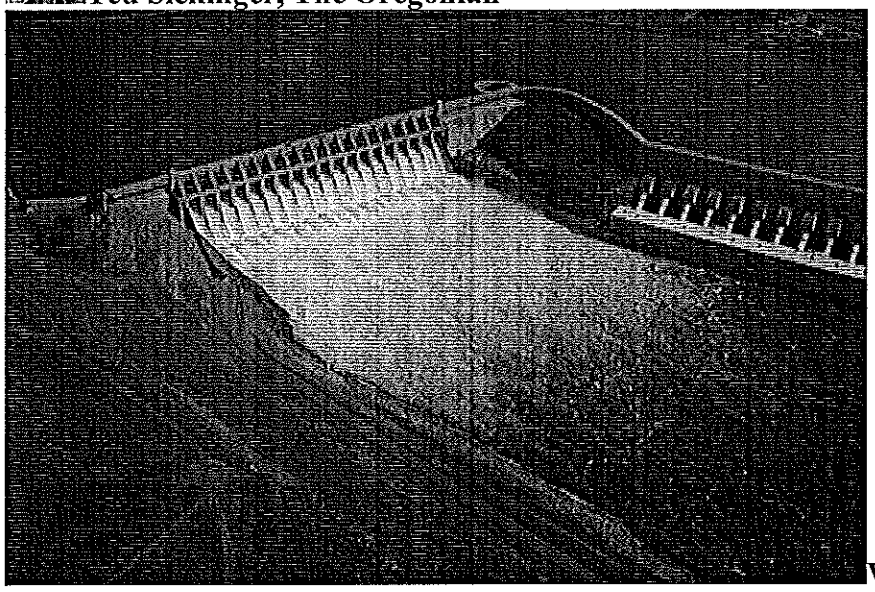
Mary Repar

OregonLive.com
Everything Oregon

Swollen Columbia River churns so much electricity BPA is giving some away

Published: Friday, June 11, 2010, 7:32 PM Updated: Saturday, June 12, 2010, 8:08 AM

Ted Sickinger, The Oregonian

 **View full size**Water shoots back up from the flow deflectors immediately below the spillway at Chief Joseph Dam in Washington. The deflectors help moderate oxygen levels to protect fish when river levels are unusually high.

Winter's snow drought has given way to a temporary flood of late spring runoff, forcing regional managers of the electrical grid to give away power, dial back generation at thermal plants and rapidly fill reservoirs to maintain acceptable conditions for migrating fish.

Robust water flows in the region's rivers are typically a blessing, creating a bounty for electricity generation, irrigation, fish passage and recreation. Indeed, only a month ago, the **Bonneville Power Administration** was issuing dire warnings about summer water shortages.

Those shortages are likely to materialize regardless, as rain now won't substitute for snowmelt in July and August. But early June's onslaught of moisture has temporarily

pushed the Columbia River and its tributaries toward flood stage and taxed the hydro system's flexibility to manage competing interests.

The prevailing pineapple express has pushed precipitation levels to 700 percent of normal in some areas of the Snake River Basin and 170 to 200 percent of normal on the upper Willamette River, said Jim Barton, chief of water management in the Columbia Basin for the **U.S. Army Corps of Engineers**.

Too much rain means too much water over the dams' spillways, and the resulting turbulence leads to excess dissolved oxygen in the water. That's harmful to fish, so the big dam operators in the region -- the Corps and Bureau of Reclamation -- divert as much water as possible into reservoirs or through the dams turbines to generate electricity.

"All the reservoirs are filling or near full, so that makes it challenging," Barton said. "You can only store so much."

Then you generate.

"The more the dams can generate, the less they spill and the less issue with dissolved oxygen," Barton said.

When you create electricity, however, you need to use it, immediately, or risk an imbalance on the grid.

During the last few days, the 31 federally operated hydroelectric dams in the region have been running full tilt, generating an average of 13,000 megawatts of electricity. That's 144 percent of their normal spring generation -- the equivalent of adding four nuclear plants worth of electricity generation to the regional mix.

Complicating the picture is the region's growing fleet of wind turbines, which have been cranking out extra megawatts as the same storm cells dumping rain into the rivers have whipped wind speeds higher.

"You can only run the turbines as fast as you can find a home for the power," said Michael Milstein, a spokesman for the Bonneville Power Administration, which markets the power from the federal dams and one nuclear plant, and integrates the spikey output of the region's wind fleet onto the grid.

To accommodate the surge, the nuclear plant at Hanford has been dialed back to 25 percent of capacity, Milstein said. BPA has also warned wind farm operators that it won't be accepting much, if any, unscheduled power production.

Meanwhile, the agency has been enticing utilities to turn off their own power plants by giving away electricity for free, or near free, at several junctures since Wednesday.

"That's helpful to customers, as it flows through in lower power costs," said Steve

Corson, a spokesman for Portland General Electric.

While the weekend weather is expected to be dry, it takes several days for a slug of moisture to move through the system.

"We expect things to be returning to normal by Monday," Milstein said. "It certainly has been a test of the system."

--Ted Sickinger

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Published June 08, 2010

Birds vs. the wind farms

BY HAL BERNTON

SEATTLE - Biologist Orah Zamora spends her days walking around wind turbines in search of dead birds and bats. Most of her surveys turn up nothing, but every once in a while she finds a carcass that may have been felled by a whirring blade.

"It's like a crime scene, and you try to figure out what happened. Sometimes, it's really obvious because you see a slice mark," Zamora says.

Zamora's monitoring at the Windy Flats project near Goldendale is part of a larger series of surveys to assess how the wind-power boom is impacting birds that must now share air space with the towering turbines.

The surveys, which are financed by the wind industry, indicate that wind power is a relatively minor hazard to birds. But some scientists say it is still too soon to discount the risks posed by the rush to develop Northwest wind power. They are particularly concerned with the plight of hawks, eagles and other raptors, which are large, longlived birds at the top of the food chain.

One survey at Big Horn Wind Farm in Klickitat County estimated that more than 30 raptors were killed during an initial year of operations – more than seven times the number forecast in a pre-construction study. The dead raptors included kestrels , red-tailed hawks, shorteared owls and a ferruginous hawk, which Washington state lists as a threatened species.

"It's just too early to say what this all means," said K. Shawn Smallwood, a California ecologist who has published numerous scientific articles on wind farms and raptor deaths. "The science is just not there yet."

There also is uncertainty about how raptors react to wind-power development, which often carves up foraging grounds with miles of new roads. Some say more studies are needed to determine if some species shy away from these areas or eventually abandon nests near the wind farms.

"Some of these projects are going up in undeveloped areas that were kind of havens for these species," said James Watson, a Washington Department of Fish and Wildlife biologist who has spent 40 years studying raptors. "These turbines are occupying some of the flight space that is their bread and butter."

Zamora works for West Inc., an ecological field-study company that has become a major contractor for the wind-power industry. The company's surveys of turbine operations,

which typically last a year or more, do miss some dead birds that get quickly picked apart by ravens, vultures or coyotes. Statisticians try to account for such removals in coming up with the final survey estimates that have been released for about a dozen Northwest wind farms.

Based on that information, the wind-power turbines currently operating in Oregon and Washington kill more than 6,500 birds and more than 3,000 bats annually.

In an era of climate change and a massive oil spill off the coast of Louisiana, windpower advocates say these deaths are an acceptable trade-off for development of a renewable energy source.

They note that house cats and other man-made hazards cause tens of millions of bird deaths each year.

Bird mortality "at wind farms, compared to other human-related causes of bird mortality, is biologically and statistically insignificant," wrote Mike Sagrillo, a consultant who writes for American Wind Energy Association.

In recent years, some of the biggest Northwest concerns about raptors and windpower development have been in the plateau country of Klickitat County, whose farm fields and grazing lands offer a buffet of chukars, rabbits and other prey to birds that nest in the nearby Columbia River Gorge.

Wind-power developers, after consultations with state biologists, have agreed to relocate some turbines away from canyon edges frequented by raptors, and avoid installing them in some areas used by raptors or near their nets.

"We take the questions and concerns of wildlife impacts very seriously," said Jan Johnson, a spokeswoman for Iberdrola Renewables.

Read more: http://www.theolympian.com/2010/06/08/v-print/1264302/birds-vs-the-wind-farms.html#ixzz0r8EtK7jT

http://www.cascadepolicy.org/2010/02/17/increased-costs-are-blowin%E2%80%99-in-the-wind/

February 17, 2010

Increased Costs Are Blowin' in the Wind

Filed under:

- Carbon Cartel Education Project
- Climate Change
- Commentaries
- Environment

— Todd Wynn

by Todd Wynn and Eric Lowe

Increased Costs Are Blowin' in the Wind

Summary: Wind energy on the Pacific Northwest's electricity grid has increased substantially. Often overlooked are the impacts of increasing wind generation on the reliability and affordability of electricity that very well might outweigh any of the promised environmental benefits.

Download the .pdf here, or click through the break to read the commentary.

Wind energy on the Pacific Northwest's electricity grid has increased substantially over the years, and this is leading to a number of problems. The Bonneville Power Administration (BPA), the Pacific Northwest's federal power marketing authority, is charged with integrating the large influx of wind power into the electricity grid. In 1998, the BPA's wind generation was roughly 25 megawatts (MW). Today, it totals 2,780 MW; and, with the Oregon Renewable Portfolio Standards passed in 2007, over 6,000 MW of wind power is expected to be on-line by 2013. Often overlooked are the impacts of increasing wind generation on the reliability and affordability of electricity that very well might outweigh any of the promised environmental benefits.

The negative aspects of wind power are quite apparent. Obviously, wind is unpredictable and inconsistent, which creates a significant problem for BPA and electric utilities. To prevent brownouts or overloads on the grid, BPA must schedule energy production in advance.

However, the ability to predict when and how hard the wind will blow is extremely limited (usually a two- or three-day window) and often inaccurate.

Because wind power is so unpredictable, every megawatt must be backed up by an equal amount of reliable energy sources in reserve to replace the energy lost when the wind dies down. This means BPA must have a "balancing" reserve equal to or greater than the wind power capacity utilized at any given time. In the Pacific Northwest the backup source traditionally has been federally owned hydroelectric dams, which are shut on and off to respond to fluctuations in wind energy.

According to BPA, the ability of the federal hydro system to serve as a balancing reserve maxes out between 3,000 and 3,500 MW of installed wind generation. **This means that BPA can only back up roughly half of the projected increase in wind power.** In the near future, BPA will be forced to consider other options to establish a satisfactory reserve for integrating the large influx of unreliable energy.

Some efforts to rectify the integration problem include evaluating the feasibility of dynamic scheduling, which means breaking down the periods of time wind generation is scheduled (e.g. from hour-to-hour to 30-minute increments). Additionally, BPA is analyzing better ways to forecast wind speed and is researching storage technologies (such as compressed air or flywheel technology). Such advances are generally far-off, or would fail to address the problem completely. **Therefore, BPA eventually will be forced either to buy additional dispatchable generation capacity from third-party suppliers or to build additional back up capacity.** This leads to additional costs for BPA, the utilities which purchase power from BPA, and ultimately Oregon ratepayers.

Where this additional backup energy comes from is a critical question. PGE has begun the permitting process for a natural-gas fired plant in North-Central Oregon, and plans for a second natural gas plant in 2015 are underway. These plants will become even more necessary as the ability to use hydroelectric dams as backup is strained and wind generation capacity keeps expanding due to legislative mandates.

Building new natural gas facilities to serve as a backup for additional wind sources has several related problems. **First, natural gas is subject to price volatility, similar to buying gasoline at the pump. Uncertainty in production and delivery lead to significant fluctuations in natural gas costs. Further, natural gas facilities produce greenhouse gas emissions, which at least partly negates the purpose of the renewable energy mandates.** Thus, not only are electricity rates increasing because of additional wind generation, but the subsequent increase of natural gas reliance further exacerbates the problem by introducing volatility.

In 2009, BPA requested the Oregon Public Utility Commission (OPUC) to allow an electricity rate increase to reflect the costs of integrating wind. BPA proposed an increase of $2.79 per kilowatt-month, and the OPUC set the final rate increase at $1.29. According to BPA, the associated costs of the $1.29 rate increase broke down as follows: $0.05 for regulatory expenses, $0.26 for load following (e.g. wind forecasting) and $0.98 to correct imbalances (e.g. balancing reserves such as natural gas or hydro).The previous rate of $0.68 per kilowatt-month did not reflect the costs associated with imbalances in wind production. The new rate represents a

doubling of wind integration costs, and this rate will continue to increase as more wind energy is added to the grid. These additional costs are eventually passed on to Oregon ratepayers.

It does not seem wise to promote and force Oregonians to purchase an energy source that has so many associated costs. At best, wind power simply replaces a clean, reliable and affordable source of energy: hydroelectricity. At worst, it invites increased price volatility, increased rates, and the prospect of more greenhouse gas-emitting facilities. **Ultimately, increasing wind generation leads to financial burdens on businesses and individuals across the state that ought to be considered further.** Legislators should not attempt to choose "winners" in emerging energy technologies, nor should they force costly energy sources upon ratepayers. Instead, utilities should allow ratepayers to pay the full cost of renewable energy voluntarily and to expand renewable energy according to ratepayer demand.

Todd Wynn is Climate Change and Energy Policy Analyst at Cascade Policy Institute, Oregon's free market public policy research organization. Eric Lowe is a research associate at Cascade Policy Institute.

COMMENT LETTER 83

Congress of the United States
Washington, DC 20515

WR - DEIS
Public Comment #214

November 18, 2009

Mr. Rory Westberg
Deputy Regional Director
National Park Service
Pacific West Region
909 First Avenue, Fifth Floor
Seattle, WA 98104

Dear Mr. Westberg:

We are writing to express our disappointment in the letter submitted by the National Park Service (NPS) to the Bonneville Power Administration (BPA) regarding the Whistling Ridge Energy Project. This letter mentions the project's proximity to the Lewis and Clark National Historic trail and the Oregon Pioneer National Historic Trail as well as it being adjacent to the Columbia River Gorge National Scenic Area as the basis for the Agency's objections.

However, as you know, the National Trails System Act (NTSA) does not give authority to regulate or restrict private land that is not part of the designated trail. In fact the only mention of scenic protection in the Act is in Section 7 (k) authorizing private parties to donate scenic, recreational or conservation easements that enhance the trail and have the donation considered as a public gift for tax purposes.

Although the letter was clearly outside any authority the NPS has under the NTSA, you went on to make specific demands, including "at minimum removing turbine corridor A1-A1 from further project consideration." The letter also asserts that "the visual quality of the region is specifically protected by designation of the Columbia Gorge National Scenic Area (CRGNSA) in 1986." However, the National Scenic Act does not provide any authority to regulate activities outside the National Scenic Area, which the letter acknowledges itself is the case with this project. The relevant section of the Act states:

Per Section 17. Savings provisions (Sec. 554o)

(a) Nothing in sections 544 to 544p of this title shall....

> *(10) establish protective perimeters or buffer zones around the scenic area or each special management area. The fact that activities or uses inconsistent with the management directives for the scenic area or special management areas can be seen or heard from these areas shall not, of itself, preclude such activities or uses up to the boundaries of the scenic area or special management areas.*

PRINTED ON RECYCLED PAPER

As supporters of the development of new sources of renewable energy, including wind power, we are concerned that the Agency would act outside of its jurisdiction to attempt to obstruct this specific project and our nation's broader goals for renewable energy development. We therefore recommend that the May 18, 2009 letter be retracted and in the future that the Agency confine its public comments to those matters that are within its jurisdiction and are consistent with the laws and policies adopted by the Administration and Congress.

Please feel free to contact either of our offices if you have any questions.

Sincerely,

Brian Baird
Member of Congress

Doc Hastings
Member of Congress

cc: Andrew Montano, Bonneville Power Administration
Skamania County Board of Commissioners
Jason Spadaro, SDS Lumber

COMMITTEE ON SCIENCE AND TECHNOLOGY
Chairman
Subcommittee on Energy and Environment

COMMITTEE ON TRANSPORTATION
AND INFRASTRUCTURE

BRIAN BAIRD
CONGRESS OF THE UNITED STATES
3RD DISTRICT, WASHINGTON

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(360) 695-6292

Olympia Office:
120 Union Avenue SE, Suite 105
Olympia, WA 98501
(360) 352-9768

WEBSITE: http://www.house.gov/baird

May 20, 2009

Regional Forester Mary Wagner
US Forest, Region 6
333 SW First Avenue
PO Box 3623
Portland, OR 97208

Dear Ms. Wagner,

I write to express my disappointment in both the United States Forest Service's (USFS) letter submitted to the Energy Facility Site Evaluation Council (EFSEC) and testimony provided by USFS staff at the hearing held on May 6, 2009, regarding the Whistling Ridge Energy Project.

As you know, the National Scenic Act does not provide any authority to regulate activities outside the National Scenic Area.

Per Section 17. Savings provisions (Sec. 544o)

(a) Nothing in sections 544 to 544p of this title shall...

> *(10) establish protective perimeters or buffer zones around the scenic area or each special management area. The fact that activities or uses inconsistent with the management directives for the scenic area or special management areas can be seen or heard from these areas shall not, of itself, preclude such activities or uses up to the boundaries of the scenic area or special management areas.*

Despite no authority to do so, the USFS, as stated on the last page of its letter, recommends ..."the applicant eliminate turbine locations found to be visible from Scenic Areas KVAs." In addition, it is my understanding USFS staff testified that the Wind Energy project in Klickitat County should never have been permitted.

My concern is two-fold. Not only is this project outside of your agency's jurisdiction, but your actions could have detrimental impacts on the project with, as I see it, very minimal benefit. Let me be clear, I support wind turbine projects such as this. I believe them to be worthwhile and consistent with our nation's goal of generating clean, renewable energy. I question the value of blocking such a project and I question the agency's role in this issue.

printed on recycled

Michelle, Kayce (COM)

From: Posner, Stephen (COM)
Sent: Monday, July 19, 2010 8:05 AM
To: Talburt, Tammy (COM); Michelle, Kayce (COM)
Subject: FW: Congressman Baird submits November 2009 Letter for public record
Attachments: Letter to Mr Rory Westberg.pdf

Please add as a comment letter on the DEIS. Thanks.

From: Parker (Love), Kelly [mailto:Kelly.Parker@mail.house.gov]
Sent: Friday, July 16, 2010 1:39 PM
To: ammontano@bpa.gov; Posner, Stephen (COM)
Cc: Hoss, Schuyler (GOV); Pincheira, Kimberly (Cantwell); Phillips, Page (Murray); Parker (Love), Kelly
Subject: Congressman Baird submits November 2009 Letter for public record

<<Letter to Mr Rory Westberg.pdf>>

Greetings:

The Congressman has asked I submit to the BPA and EFSEC his November 18th 2009 letter addressed to the NPS (National Park Service) to clearly state his objection to federal agencies asserting their authority in the matter of the Whistling Ridge Wind Energy Project.

If you have questions or need to clarify our request to have the letter included in the public record, please feel free to give me a call. I appreciate the time sensitivity as your deadline for public comments nears.

Thank you. Kelly

Kelly Love Parker

District Director

Congressman Brian Baird

750 Anderson #B Vancouver, WA 98661

(360) 695-6292

Congress of the United States
Washington, DC 20515

November 18, 2009

Mr. Rory Westberg
Deputy Regional Director
National Park Service
Pacific West Region
909 First Avenue, Fifth Floor
Seattle, WA 98104

Dear Mr. Westberg:

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As supporters of the development of new sources of renewable energy, including wind power, we are concerned that the Agency would act outside of its jurisdiction to attempt to obstruct this specific project and our nation's broader goals for renewable energy development. We therefore recommend that the May 18, 2009 letter be retracted and in the future that the Agency confine its public comments to those matters that are within its jurisdiction and are consistent with the laws and policies adopted by the Administration and Congress.

Please feel free to contact either of our offices if you have any questions.

Sincerely,

Brian Baird
Member of Congress

Doc Hastings
Member of Congress

cc: Andrew Montano, Bonneville Power Administration
Skamania County Board of Commissioners
Jason Spadaro, SDS Lumber

Talburt, Tammy (COM)

From: Michelle, Kayce (COM)
Sent: Thursday, July 22, 2010 12:01 PM
To: Talburt, Tammy (COM)
Subject: FW: Congressman Baird submits November 2009 Letter for public record
Attachments: Letter to Mr Rory Westberg.pdf

Tammy, did you already add this as a comment? If not, let me know and I will print it out.

From: Posner, Stephen (COM)
Sent: Monday, July 19, 2010 8:05 AM
To: Talburt, Tammy (COM); Michelle, Kayce (COM)
Subject: FW: Congressman Baird submits November 2009 Letter for public record

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Sent: Friday, July 16, 2010 1:39 PM
To: ammontano@bpa.gov; Posner, Stephen (COM)
Cc: Hoss, Schuyler (GOV); Pincheira, Kimberly (Cantwell); Phillips, Page (Murray); Parker (Love), Kelly
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District Director

Congressman Brian Baird

750 Anderson #B Vancouver, WA 98661

(360) 695-6292

Montano,Andrew M - KEC-4

From: Parker (Love), Kelly [Kelly.Parker@mail.house.gov]
Sent: Friday, July 16, 2010 1:39 PM
To: Montano,Andrew M - KEC-4; stephen.posner@commerce.wa.gov
Cc: Schuyler (GOV) Hoss; Pincheira, Kimberly (Cantwell); Phillips, Page (Murray); Parker (Love), Kelly
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750 Anderson #B Vancouver, WA 98661

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Congress of the United States
Washington, DC 20515

November 18, 2009

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Deputy Regional Director
National Park Service
Pacific West Region
909 First Avenue, Fifth Floor
Seattle, WA 98104

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cc: Andrew Montano, Bonneville Power Administration
Skamania County Board of Commissioners
Jason Spadaro, SDS Lumber

United States Department of the Interior

NATIONAL PARK SERVICE
Pacific West Region
909 First Avenue, Fifth Floor
Seattle, Washington 98104-1060

IN REPLY REFER TO:
ER 09/423

May 18, 2009

Bonneville Power Administration
Public Affairs Office—DKC-7
Attn: Andrew M. Montaño
P.O. Box 14428
Portland, OR 97293-4428
bpa.gov/comment

Dear Mr. Montaño:

The National Park Service (NPS) has reviewed the Notice of Intent to prepare an Environmental Impact Statement (EIS), published in the Federal Register on April 21, 2009. The Bonneville Power Administration (BPA) and Washington Energy Facility Site Evaluation Council (EFSEC) will prepare a joint National Environmental Policy Act (NEPA)/State Environmental Policy Act (SEPA) EIS for a proposed 75 megawatt (MW) wind energy generation project to be located on 1,152 acres in Skamania County, Washington. The NPS has reviewed the Application for Site Certification Agreement (2009-01) (Application) submitted by WRE on March 10, 2009, and offers the following specific comments to the information and analysis provided therein.

The Whistling Ridge Energy (WRE) project is near the Columbia River corridor. While the NPS is supportive of the development of environmentally-sound, alternative energy technologies, we are concerned about the potential direct and cumulative effects of this renewable energy project on recreation and aesthetics in the Columbia River Gorge area.

On page 4.2-76, the Application states that "no national trails are within 5 miles of the proposed facility." However, this statement is incorrect. Both the Lewis and Clark National Historic Trail and Oregon Pioneer National Historic Trail, administered by the NPS, pass through the Columbia River Gorge and are within 5 miles of the proposed facility. To provide more background on the national significance of these trails, historic travelers on these trails used both the river for downstream transportation and adjacent lands for eastward travel. When Congress designated these trails, it also authorized auto tour routes along Interstate 84 and Washington Route 14. The viewshed from both the river and auto tour routes is a critical part of the visitor experience. In addition to the national historic trails, the visual quality of the region is specifically protected by designation of the Columbia Gorge National Scenic Area (CGNSA) in 1986. These three national resources are independently significant, but the close proximity of all three to each other creates a unique recreational opportunity for visitors to the region. It is important for the NPS to ensure that the scenic and historic values of these areas

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are preserved from gross alteration of the landscape and viewshed by large-scale industrial development.

Because the WRE project is proposed to be immediately adjacent to the CGNSA boundary, some, if not all, of the proposed 50-turbine project will be visible from within the CGNSA, as described in the visual analysis (Section 4.2) of the Application. About 400 acres of the proposed project (including turbine corridor A1-A7, which will be closest to the CGNSA boundary) are within areas zoned Resource Protection (For/Ag-20) and Residential 10 (R-10) under current Skamania County code. Construction of wind turbines in this area will require a conditional use permit from Skamania County, partially due to the fact that the proposed wind turbines are taller structures than currently allowed in these zones.

We disagree with the level of severity for view impacts suggested in the Application. First, the Application cites dated information regarding viewer perception. In 1987, a survey reported by Thayer and Freeman, reflected both positive and negative attitudes to wind generators, page 4.2-28. This information is inadequate, because at that time, the combined national capacity was less than 2,000 MW. As of 2006, capacity exceeded 12,000 MW, and has likely increased since then, especially given increased emphasis on renewable energy development at both the national and state levels. Moreover, since 1987, the size of turbine infrastructure has increased. Towers are now taller. With taller and more prolific wind turbines, the potential for negative impacts to viewsheds is greater.

Second, the actual size of a feature on the landscape is not the only component in considering viewshed impacts. The Columbia River Gorge area is significant because of the area's scenic and historic qualities. Man-made structures, especially when movement of a structure acts as an additional point of focus, depreciate the scenic and historical qualities that originally warranted national protection. We are concerned with the cumulative impacts to the viewshed resulting from numerous uniform wind turbines extending beyond the horizon line within an open, natural landscape.

We also note that the Application did not adequately cover all of the important viewpoints that should be considered. The Draft EIS should include all of the local Key Viewing Areas identified within the CGNSA, as well as address key viewpoints from the Columbia River that may be potentially impacted. Linear viewpoints from the designated scenic drives and auto tour routes should also be fully considered in the Draft EIS.

The methods used for the visual analysis (Section 4.2) were unclear in some respects. It was not disclosed what heights were used for turbines in generating the simulated scenes, and whether those were placed in the photos by the analytical software or within a photo editing program. Photos used for simulation should not include cloudy or hazy conditions; a clear, blue sky will better illustrate the extremes of contrast between towers and the background.

On page 4.2-66, a footnote in the Application states, "Additionally, for reasons related to commercial viability and engineering feasibility, the project is proposed as an integrated whole, not a series of separate components where parts of the whole may be removed due to subjective, perceived visual effects." The NPS disagrees with this characterization of visual

effects, as the statement appears to suggest that because assessment of visual resources can be a fluid process, it lacks any objectivity or reliability, and is therefore less meritorious when weighed against the concreteness of engineering feasibility and the economics of commercial viability. Impacts to views are not purely subjective and are not merely "perceived," but can be agreed upon and very real. We believe it is clear, even at this early stage, that visual impacts to the CGNSA and the national historic trails will degrade the core scenic and historic landscape values of these resources. We strongly recommend at minimum removing turbine corridor A1-A7 from further project consideration. This would help reduce the impact to visual resources within the CGNSA and along the national historic trails.

There are certain advantages for developing a wind farm at the proposed location. Natural and cultural resource surveys suggest that few negative impacts are likely to result from the proposed project. Most of the property will remain in commercial forestry operations. Access to BPA transmission lines obviates new line siting and construction. The potential enhancement to local employment and property tax revenues, while small, are still important in this economically depressed county.

Slightly decreasing the total turbines through removing turbine corridor A1-A7 of the proposed project will likely not hinder its viability while alleviating some of the negative visual impacts.

The NPS anticipates having further comments as the NEPA/SEPA process proceeds for the Whistling Ridge Energy project. If you have any questions, please contact:

Dan Wiley
Chief Integrated Resource Stewardship
Lewis and Clark National Historic Trail
601 Riverfront Drive
Omaha, NE 68102
(402) 661-1830
Dan_Wiley@nps.gov

Sincerely,

Rory D. Westberg

Rory D. Westberg
Deputy Regional Director, Planning and Resource Management

Michelle, Kayce (COM)

From: Posner, Stephen (COM)
Sent: Thursday, June 17, 2010 9:54 AM
To: Michelle, Kayce (COM)
Subject: FW: Whistling Ridge

Kayce,

Please process as a comment on the WR DEIS. Thanks.

From: Greg Erdmann [redacted]
Sent: Thu 6/17/2010 8:24 AM
To: Posner, Stephen (COM)
Subject: Whistling Ridge

Subject: Wind farm siting and permitting officials can help lower the visual impact of wind farms by recommending the deployment of new AVWS technologies on wind turbines.

While large wind farms generate clean energy, their constantly flashing red strobe lights cause great public annoyance and is usually not noticed until after the wind farm is sited and constructed. The wind farm's legacy can include this "light pollution" and have a tremendous negative impact on the community. For example, a 100-turbine wind farm can have approximately 30-50 turbines with two high-intensity flashing lights on at all times of the night. The effects of these flashing lights on the nearby community should be considered during the wind farm permitting and development process.

Recently approved by the FAA, the new generation of "on-demand" lighting systems solves this problem by **keeping all wind turbine obstruction lights OFF at all times** - unless an aircraft is detected flying on an unsafe heading towards the wind farm. Only then does the turbine-based radar system turn the lights on for aircraft safety, and turn the lights off when the aircraft exits the airspace. An Audio Visual Warning System (AVWS) is an on-demand lighting solution. *Wind siting and permitting officials can request wind power developers to implement an AVWS into their wind farms to reduce these adverse visual impacts in your communities.*

An AVWS will benefit your community by:

- Lowering the overall environmental and visual impact of wind farms by reducing "light pollution" and increasing public acceptance in wind energy-producing communities.
- Reducing bird death rates in some areas since migratory birds are less likely to be attracted to wind farm lights and lured toward the operating turbines.
- Fostering more responsible siting practices and therefore overall positive and growth in the wind industry.

Feel free to contact me if you would like further information.

Greg

Gregory S. Erdmann
[redacted]

Michelle, Kayce (COM)

From: Stoops, Tom [redacted]
Sent: Monday, June 21, 2010 4:52 PM
To: Wright, Al (COM)
Cc: Luce, Jim (COM)
Subject: Response to question from Jim Luce

Al,

Jim Luce called last week and left the following question "How does EFSC work with critical viewing areas in the Columbia Gorge Scenic Area?"

Historically, protected areas are listed as part of our rules (OAR 345-22-0040) and the Columbia River Scenic Area is one those listed, see paragraph (g). By virtue of being listed an energy facility is not allowed. The big however, is that we do not assume that an energy facility outside the scenic is automatically precluded.

For example, when FirstWind proposed the Seven Mile Hill project, just east of the Dalles and bordering the scenic area, the issue of the CGSA came up and the applicant was told that they could not place their facility in the that protected area. Multiple discussion were had that being able to see the facility from the CGSA was not the issue as you can stand within the CGSA and see a myriad of industrial views. However, as FirstWind withdrew the application that regulatory finding was not challenged. Thus, it remains our hypothesis that, for Oregon, only a facility within the CGSA would be prohibited.

Naturally, we assume that if a facility was proposed for construction near the CGSA that our EFSC would likely receive numerous comments about the visual impacts. One of the tools we are hoping to test in the near future on some of our joint State/Federal projects is their visual impact model. I don't know much about it, but it is at least a starting point for determining when an impact is significant. Viewshed degradation is becoming a significant issue associated with both the commercial wind projects and the large transmission projects.

Hope that helps some,

Tom

Thomas M. Stoops
Division Administrator, Siting
Oregon Department of Energy
(503) 378-8328

COMMENT LETTER 86

WR - DEIS
Public Comment #223

Michelle, Kayce (COM)

From: Summer Scheyer [redacted]
Sent: Thursday, June 24, 2010 9:13 PM
To: COM EFSEC
Subject: Whistling Ridge Energy Project

To Whom It May Concern:
My husband and I are residents of Skamania County and are also employees of the county. For numerous years, our county has relied on Federal tax dollars to subsidize our county's existence in lieu of logging. Although I am a proponent of environmentally responsible logging, I realize those who live outside of our county continue to control our forests and logging will not sustain our economy. The Whistling Ridge Energy Project is, finally, a light at the end of a hopeless tunnel of poverty and welfare. The project is based on environmentally-safe practices and will improve our community as a whole. Many of the opponents of the project DO NOT live in our county. We are tired of those using our county as a "playground" making decisions for our economy and well-being. Friends of the Gorge and other non-profit groups based on "protecting" the Gorge have done nothing more than continue our economical downturn. My husband and I are very active within the county and enjoy fishing, hunting, kiteboarding, and backpacking. We want nothing more than to protect this incredibly beautiful and unique area. We believe the Whistling Ridge Energy Project will do nothing more than improve this beautiful county we call home. Thank you in advance for taking the time to read this email and consider our opinion for this project.

Sincerely,

Summer Scheyer & Russ Hastings
[redacted]

Hotmail is redefining busy with tools for the New Busy. Get more from your inbox. See how.

Michelle, Kayce (COM)

From: Julie Britt [redacted]
Sent: Sunday, June 27, 2010 7:18 PM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because this project is proposed along a forested ridgeline in the foothills of the Cascade Mountains. The project would permanently disturb large areas of forested habitat and result in direct and indirect impacts to multiple wildlife species through habitat loss and displacement, direct collisions with turbine blades, and other factors. The potentially affected listed and sensitive species include northern spotted owl, western gray squirrel, northern goshawk, several species of bats, multiple migratory bird species, mule deer, black-tailed deer, and elk.

I am especially concerned about the impact on spotted owls, as recent studies have shown their numbers continue to decrease steadily, even dramatically in some areas. Any development that might disturb their habitat must be closely, closely scrutinized.

In addition, locating 426-foot-tall turbines on the ridge line of the Columbia River Gorge would degrade the scenic value of the Gorge. The turbines and their blinking lights would be highly visible from several designated key viewing areas within the National Scenic Area, including Interstate 84, the Historic Columbia River Highway, Columbia River, Cook-Underwood Road, and Panorama Point. The project would introduce industrial development into the natural, forested landscape and indefinitely alter views in the National Scenic Area.

I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Julie Britt
[redacted]

COMMENT LETTER 88

WR - DEIS
Public Comment #225

Michelle, Kayce (COM)

From: Posner, Stephen (COM)
Sent: Monday, June 28, 2010 8:22 AM
To: Talburt, Tammy (COM)
Cc: Michelle, Kayce (COM)
Subject: FW: Whistling Ridge

Public comment for the record. Thanks.

From: Richard Hertz [mailto:[redacted]
Sent: Friday, June 25, 2010 4:18 PM
To: Posner, Stephen (COM)
Subject: Whistling Ridge

Dear Commission,

I cannot believe in this age of BP that we are questioning any environmentally friendly wind project.

This, just like all such projects, should be expedited as fast as possible.

Richard Hertz
[redacted]

COMMENT LETTER 89

WR - DEIS
Public Comment #226

Michelle, Kayce (COM)

From: tim kohl [redacted]
Sent: Monday, June 28, 2010 9:42 AM
To: COM EFSEC
Subject: WHISTLING RIDGE

It would be in every ones best interest to be in FAVOR of the excellent energy creation project proposed for Skamania County. Whistling Ridge will benefit the entire region with clean affordable electric power for generations. This is exactly what we need here. I live in district 3 in Skamania County where this project is proposed and support it wholeheartedly. I would encourage both of your fine organizations to approve Whistling Ridge as soon as is reasonably possible. tk

Tim Kohl
[redacted]

RECEIVED
JUN 2 0 2010
ENERGY FACILITY SITE
EVALUATION COUNCIL

A personal note ...

June 23/2010

To EFSEC:

I am all for the Whistling Ridge energy Project. I think its a good idea to put this wind that we have in good use. The Gorge and where I live in Mundock we get alot of wind so why not make good use of it and benefit people by supplying jobs and energy.

I like the name whistling Ridge cause the wind does whistle here @ times.

Sincerely
Bonnie Lapelje

RECEIVED
JUN 28 2010
ENERGY FACILITY SITE EVALUATION COUNCIL

COMMENT LETTER 91

WR - DEIS
Public Comment #228

This is in regards to the Slick mailer I received Lamenting the Woeders OF the SDS lumber Company's plans To Install wind turbines on underwood Mountain. JASON SPADARO SAYS its the right Project, right place, and right time.

well JASON, IF its the right time, why are they About to dismantle the Condit dam? IF we needed this energy wouldn't you think they would first ask us to conserve energy? All this wind power is going to California, none is staying here Locally. We have more energy comming out OF our ears right here on the Columbia river, Every 40-60 miles in the hydroelectric dams, And most OF that Energy goes South Too.

IF its the right place, Then why did Hood River County pull Thier proposed wind turbines on Middle Mountain in the hood River VAlley, because its the wrong place This is The Columbia River Gorge National Scenic Area, you don't put wind Turbines in the Grand Canyon, And you don't put them Here. I SAy why don't you put these turbines on your SDS mill site right on the Columbia River in Bingen There is pleanty OF wind there. These wind turbines belong no where near the Columbia River Gorge NAtional Scenic Area, this is not the right place.

As for the right project, It really saddens me that the SDS Lumber Co. can Stroll in And clear cut the entire Side OF Underwood mountain or Spend thousands OF dollars mailing Everyone A Slick Broschure on how

much this Area needs this project, We don't need it, YOU need it. MYSELF AS A Landowner in Underwood CAN't Cut A tree down or paint my house A different color without Jumping through the Gorge Commission hoops. You Clearcuts And proposed wind turbines will be VISABLE throughout the Scenic Area for close to 20 miles.

IF this energy were To be used locally I'd be more apt to sign up, but since it's All going to California, I SAY put the wind turbines up on the California COAST And see how they Feel About That, not in The Columbia River Gorge National Scenic Area

Stephen J. Curley

[redacted]

COMMENT LETTER 92

WR - DEIS
Public Comment #229

6/25/10

RECEIVED
JUN 29 2010
ENERGY FACILITY SITE
EVALUATION COUNCIL

I live on the Gorge. I am opposed to the proposed site of Whistling Ridge Energy Project.

Although the site is outside the Scenic Area, it will be visible from the Scenic Area. It will be an eyesore and kill many birds. Bald Eagles inhabit the area.

The brochure photo from Hwy 84 is misleading. What it does not show is Mt Adams, east of the site. The project will be very visible to Hood River residents who live at a higher elevation from Hwy 84.

The area must remain pristine. Visual pollution is what Whistling Ridge →

with a thing in the proposed location.

Thankyou for considering my comment.

Jacqueline Moreau

[redacted]

COMMENT LETTER 93

WR - DEIS
Public Comment #230

Michelle, Kayce (COM)

From: Cris McEwen [redacted]
Sent: Tuesday, June 29, 2010 1:28 PM
To: COM EFSEC
Subject: Whistling Ridge Energy Project, EFSEC Application #2009-01 - Comments
Attachments: Cmmnts Klick Co Whistling Ridge Wind Prjct.pdf

Please allow the attached letter to serve as Klickitat County's comments on the joint Draft Environmental Impact Statement for the Whistling Ridge Energy Project.

Our comments are also being sent via regular US Postal Service.

Respectfully.

Crystal D. McEwen, Executive Secretary on behalf of the Board of County Commissioners

Clerk of the Board
Board of County Commissioners
Klickitat County, Washington
205 S. Columbus, Room 103 MS-CH-04
Goldendale, WA 98620
(509) 773-4612
(509) 773-6779 (Fax)
CrisM@co.klickitat.wa.us

Email is considered a public document and may be subject to the Public Records Disclosure Act.

KLICKITAT COUNTY
BOARD OF COUNTY COMMISSIONERS
205 S. COLUMBUS AVENUE, ROOM 103, MS-CH-04, GOLDENDALE WASHINGTON 98620 • FAX 509 773-6779 • VOICE 509 773-4612
REX F. JOHNSTON, DISTRICT #1
DAVID M. SAUTER, DISTRICT #2
RAY THAYER, DISTRICT #3

June 29, 2010

Via E-Mail and Mail

EFSEC
905 Plum Street SE
Olympia, Washington 98504-3172
efsec@commerce.wa.gov

Bonneville Power Administration
Public Affairs Office - DKE-7
P.O. Box 14428
Portland, Oregon 97293-4428
www.bpa.gov/comment

RE: Whistling Ridge Energy Project, EFSEC Application No. 2009-01
Comment on Draft Environmental Impact Statement (Draft EIS)

Dear Sirs and Madams:

Klickitat County appreciates the opportunity to provide this comment on the joint Draft EIS for the Whistling Ridge Energy Project. Whistling Ridge is proposed for location in Skamania County, adjacent to Klickitat County. Klickitat has permitted several wind projects over the past decade, so has acquired experience with evaluating and mitigating project impacts, as well as an appreciation for the socio-economic benefits wind development can bring to a rural community. It is within this context that the County offers these comments and support for Whistling Ridge.

1. Wind Development, Generally: Addressing Both Economic Recovery and Environmental Objectives

Wind development has become increasingly important to both Washington's economy and achieving environmental objectives. Washington voters expressed this when they approved the Energy Independence Act, Ch. 19.285 RCW, in 2006.

> [A]ppropriately sited renewable energy facilities ... will promote energy independence in the state and the Pacific Northwest region. Making the most of our plentiful local resources will stabilize electricity prices for Washington residents, provide economic benefits for Washington counties and farmers, create high-quality jobs in Washington, provide opportunities for training apprentice workers in the renewable energy field, protect clean air and water, and position Washington state as a national leader in clean energy technologies [1]

Securing our energy independence is critical not only to economic recovery, but also to our ability to compete in a global economy in which traditional energy supplies are increasingly difficult

[1] RCW 19.285.020; *see also* RCW 70.235.020; RCW 80.80.005.

to obtain. And, it is Washington's rural counties which will play a critical role in generating that energy.

2. Environmental Review for Whistling Ridge

This is EFSEC's fourth wind development project, and the state has been addressing wind project siting now for a decade. BPA has been addressing wind project siting for nearly two decades, if not longer. EFSEC's and BPA's environmental review processes are comprehensive.

Skamania County has reviewed Whistling Ridge for consistency with its land use plans and zoning requirements, as documented through Resolution 2009-54. Klickitat County respects this determination. We also offer the following observation with respect to the Columbia River Gorge Scenic Area.

Whistling Ridge is proposed for location outside the National Scenic Area boundaries. It is outside the purview of the Columbia River Gorge Commission, the Scenic Area Management Plan, and all National Scenic Area Act provisions affecting land use.

Similar to Skamania County, Klickitat could not realize its community and economic development objectives or address its historically high unemployment levels, if Scenic Area proximity were to restrain wind or other types of development in the thirteen exempted urban areas (e.g., the cities of Hood River, Bingen, White Salmon, and The Dalles) or external to the National Scenic Area boundaries. Such an outcome would be inconsistent with the letter and intent of the National Scenic Area Act.

3. Conclusion

Klickitat County appreciates your consideration of these comments. EFSEC and BPA are thoroughly reviewing the Project, which, if constructed, will be an economic and environmental asset to the region and state.

Sincerely,

BOARD OF COUNTY COMMISSIONERS
Klickitat County, Washington

Rex F. Johnston, Chairman

David M. Sauter, Commissioner

Ray Thayer, Commissioner

cc: Al Wright, EFSEC Manager
Skamania County Board of Commissioners

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JUL 01 2010
ENERGY FACILITY SITE EVALUATION COUNCIL
WR - DEIS
Public Comment #237

KLICKITAT COUNTY
BOARD OF COUNTY COMMISSIONERS
205 S. COLUMBUS AVENUE, ROOM 103, MS-CH-04, GOLDENDALE WASHINGTON 98620 • FAX 509 773-6779 • VOICE 509 773-4612
REX F. JOHNSTON, DISTRICT #1
DAVID M. SAUTER, DISTRICT #2
RAY THAYER, DISTRICT #3

June 29, 2010

Via E-Mail and Mail

EFSEC
905 Plum Street SE
Olympia, Washington 98504-3172
efsec@commerce.wa.gov

Bonneville Power Administration
Public Affairs Office - DKE-7
P.O. Box 14428
Portland, Oregon 97293-4428
www.bpa.gov/comment

RE: Whistling Ridge Energy Project, EFSEC Application No. 2009-01
Comment on Draft Environmental Impact Statement (Draft EIS)

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3. Conclusion

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Sincerely,

BOARD OF COUNTY COMMISSIONERS
Klickitat County, Washington

Rex F. Johnston, Chairman

David M. Sauter, Commissioner

Ray Thayer, Commissioner

cc: Al Wright, EFSEC Manager
Skamania County Board of Commissioners

COMMENT LETTER 94

WR - DEIS
Public Comment #231

Michelle, Kayce (COM)

From: Posner, Stephen (COM)
Sent: Tuesday, July 06, 2010 7:29 AM
To: Michelle, Kayce (COM)
Subject: FW: Renewable Northwest Project Letter re Whistling Ridge
Attachments: WA_Whistling Ridge_draft EIS letter_final_6-30-10.docx; ATT870557.htm; WREP WDFW SEPA Comments MWR-01-10.doc; ATT870558.htm

unable to open - blank page resent 7/7/2010

Yes.

From: COM EFSEC
Sent: Friday, July 02, 2010 1:51 PM
To: Posner, Stephen (COM)
Subject: FW: Renewable Northwest Project Letter re Whistling Ridge

Shall I process this as a comment?

From: John Audley [redacted]
Sent: Thursday, July 01, 2010 2:47 PM
To: COM EFSEC
Cc: Nelson, Travis W (DFW); Jason S. Spadaro
Subject: Renewable Northwest Project Letter re Whistling Ridge

Dear EFSEC Members and Staff,

Attached are RNP's comments and supporting document for the proposed Whistling Ridge Project. Please do not hesitate to contact me with further questions.

Regards,

John J. Audley, Ph.D
[redacted]

State of Washington
Department of Fish and Wildlife

Mailing Address: 2620 North Commercial Avenue (509) 543- 3319
Main Office Location: 2620 North Commercial Avenue -- Pasco, WA 99301

MWR-01-10

January 19, 2010

Katy Chaney
URS Corporation
Century Square
1501 4th Avenue, Suite 1400
Seattle, WA 98101-1616

SUBJECT: Preliminary Draft Environmental Impact Statement (DEIS), Whistling Ridge Energy Project

Dear Ms. Chaney:

The Washington Department of Fish and Wildlife (WDFW) has reviewed the above reference document and offers the following comments at this time. Other comments may be offered as the project progresses.

Overall, the Preliminary DEIS is consistent with the 2009 WDFW Wind Power Guidelines, including early and regular consultation, as well as avian and bat studies, habitat characterization, and impact analysis.

WDFW is in agreement with the following excerpt from *Section 3.0 Affected Environment*:

> "For permanent impacts to vegetation and habitat, the Section 8.2 of the Wind Power Guidelines (WDFW 2009) recommend mitigation be tailored to specific classifications. The project is located within the classification for "Forestry," which are those commercial forested areas defined and regulated under the Forest Practices Act. Minimization of conversion of forested areas is suggested, and consultation with WDFW is the only recommended mitigation. No form of acquisition, restoration or conservation of lands is suggested by the guidelines."

However, we would like to further discuss the proposal as it relates to the table in Section 8.2 of the 2009 WDFW Wind Power Guidelines mitigation for both temporary and permanent impacts.

We support the two-year minimum post-construction avian mortality study, as well as the development of a Technical Advisory Committee (TAC)

WDFW is in general agreement with the proposed commercial forestry operations within the vicinity of each turbine as described in Section 3.0 ("turbine timber buffer") and would like to offer the following interpretation.

According to Section 3.0, "Vegetation surrounding each turbine would be managed according to the following specifications:

- A circular area extending 50 feet from each turbine tower base would be harvested and graveled
- From 50 feet to 150 feet from the base of the turbine towers, tree heights would be limited to 15 feet above the elevation of the base of the turbine
- From 150 feet to 500 feet from the base of the turbine towers, tree height would be limited to 50 feet above the turbine base within an area formed by a 90 degree arc centered on the ordinary downwind direction."

From this, we conclude that within a diameter of 100 to 300 feet surrounding each turbine, tree heights would be limited to 15 feet, and from a diameter of 300 to 500 feet, tree heights would be limited to 50 feet, but only within a 90-degree arc on either side of the turbine aligned with the direction of the prevailing wind. The other 90-degree arc on either side of the turbine perpendicular with the direction of the prevailing wind will essentially be unchanged habitat (i.e. existing commercial forest). We are interested in how this type of habitat and commercial forest management in the immediate vicinity of operating wind turbines will or will not affect the avian and bat mortality. We look forward to working with Whistling Ridge through the TAC to address this issue and cooperatively develop management strategies, if needed, to reduce avian and bat mortality.

Thank you for the opportunity to review the Preliminary DEIS and offer these comments.

Sincerely,

Michael Ritter

Michael Ritter
Wind Mitigation Biologist

COMMENT LETTER 95

WR - DEIS
Public Comment #231

Michelle, Kayce (COM)

From: Posner, Stephen (COM)
Sent: Tuesday, July 06, 2010 7:29 AM
To: Michelle, Kayce (COM)
Subject: FW: Renewable Northwest Project Letter re Whistling Ridge
Attachments: WA_Whistling Ridge_draft EIS letter_final_6-30-10.docx; ATT870557.htm; WREP WDFW SEPA Comments MWR-01-10.doc; ATT870558.htm

unable to open - blank page resent 7/7/2010

Yes.

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Sent: Friday, July 02, 2010 1:51 PM
To: Posner, Stephen (COM)
Subject: FW: Renewable Northwest Project Letter re Whistling Ridge

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Sent: Thursday, July 01, 2010 2:47 PM
To: COM EFSEC
Cc: Nelson, Travis W (DFW); Jason S. Spadaro
Subject: Renewable Northwest Project Letter re Whistling Ridge

Dear EFSEC Members and Staff,

Attached are RNP's comments and supporting document for the proposed Whistling Ridge Project. Please do not hesitate to contact me with further questions.

Regards,

John J. Audley, Ph.D
[redacted]

Renewable Northwest Project

917 SW Oak, Suite 303
Portland, OR 97205

Phone: 503.223.4544
Fax: 503.223.4554
www.RNP.org

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Green Mountain Energy
Horizon Wind Energy
Iberdrola Renewables
Jones Stevedoring
Lane Powell PC
Montana Environmental Information Center
MontPIRG
Natural Resources Defense Council
NextEra Energy Resources
Northwest Environmental Business Council
NW Energy Coalition
Northwest Environmental Advocates
OSPIRG
Port of Vancouver, USA
Portland Energy Conservation, Inc.
REC Silicon
REpower
RES America Developments
Ridgeline Energy
Solar Oregon
Stoel Rives, LLP
Tanner Creek Energy
Tonkon Torp LLP
Vestas American Wind Technology, Inc.
Warm Springs Power & Water Enterprises
Washington Environmental Council
WashPIRG
Western Resource Advocates
Western Wind Power

Renewable Northwest Project

June 30, 2010

James Luce, Chairman
Stephen Posner, Compliance Manager
Al Wright, Managing Director
Energy Facility Site Evaluation Council
PO Box 43172
Olympia, WA 98504

Stephen J. Wright, Administrator
Bonneville Power Administration
PO Box 3621
Portland, OR 97208-3621

Andrew M. Montano, Environmental Project Manager
Bonneville Power Administration
PO Box 3621
Portland, OR 97208-3621

RE: Renewable Northwest Project's Comments Concerning the Whistling Ridge Energy Project Draft Environmental Impact Statement

Dear Chairman Luce, Director Wright, Mr. Posner, Administrator Wright, Mr. Montano and Council Members:

Renewable Northwest Project (RNP) provides the following comments with respect to the environmental review conducted for the Whistling Ridge Energy Project pending before the Energy Facility Site Evaluation Council (EFSEC) and currently undergoing a comment process for the joint BPA and EFSEC Draft Environmental Impact Statement (DEIS).

RNP does not, as a practice, advocate for particular renewable energy projects. But we have commented, and will continue to comment, on renewable energy projects that we believe have significant policy ramifications for the development of renewable energy in the Northwest.[1] In our view, the Whistling Ridge Energy Project has significant policy ramifications for the development of renewable energy in forested areas of the Northwest, thereby establishing precedent for forestland projects in other regions of the state.

Among the many lessons taught by the recent Gulf Coast oil disaster, one of the clearest is the need for comprehensive clean energy policy. Reliable, renewable energy will play a key role in overall effort to reduce our reliance upon fossil fuel, and pave the way towards a more robust economy. Realizing its potential to drive future economic development, Washington legislatures charged the Clean Energy Leadership Council (CELC) "to create a clean energy leadership initiative that will set the path to leverage Washington's energy infrastructure and make Washington a hub for clean energy technology and a leader in the creation of green jobs and the

[1] For example, RNP was an active participant in the Kittitas Valley Wind Power Project, due to its significant policy ramifications in shaping the direction of Washington's energy policy.

development, deployment, and export of clean energy technologies and services."[2]

Reliable, cost-competitive renewable energy benefits from diverse geographic locations of renewable energy projects. Geographic diversity helps integrate variable renewable energy resources into the system at low cost as resources with different daily or seasonal operating characteristics can help support each other. While the State of Washington is endowed by an abundant supply of wind resource potential, to date these resources have been harvested primarily in Washington's dry, shrub-steppe eco-system that peaks in the spring and summer months. West-side resources may help supply wind during other seasons of the year and blunt the effects rapid wind ramping events.

The Whistling Ridge Energy Project provides Washington with an important opportunity to diversify the supply of wind energy to include resources harvested from forest eco-systems. We are aware of efforts by officials from the Washington Department of Natural Resources to develop procedures for wind power leasing on forestlands.[3] However, as the State has yet to adopt procedures or criteria specific to forested land, or to permit a forestland-based project, review of the Whistling Ridge Energy Project must be conducted with the highest standards for science and due process in mind.

We are writing to express our support for acceptance of environmental information contained in the DEIS, and to commend EFSEC, BPA and Whistling Ridge Energy for their compliance with both the spirit and the letter of applicable siting standards and process, including Washington's Wind Power Guidelines.

RNP was actively involved in the negotiation and development of the 2003 Washington Wind Power Guidelines, as well as the revised 2009 Washington Wind Power Guidelines. We were also active participants in the 2008 Oregon-Columbia Plateau Ecoregion Wind Energy Siting and Permitting Guidelines. As a key participant in these processes, it is our view that the most important element of good wind energy facility siting that minimizes impacts to wildlife and habitat is the early, active and regular consultation with the interested public and with wildlife agencies, including the development of specific protocols to evaluate potential impacts.

As noted in a January 19, 2010 letter from WDFW to the Whistling Ridge Energy Project permitting consultant (enclosed), the wildlife data and information supporting the agency review draft of the DEIS "is consistent with the 2009 WDFW Wind Power Guidelines, including early and regular consultation, as well as avian and bat studies, habitat characterization, and impact analysis." Under the 2009 Wind Power Guidelines, for commercial forestlands, consultation with WDFW is the principal measure to address habitat and wildlife concerns. Whistling Ridge Energy's early and regular consultation with WDFW, and its use of study protocols and analyses particularly tailored to commercial forestlands, satisfies the spirit and letter of the Guidelines.

The Whistling Ridge Energy Project has undergone consistent and regular wildlife and habitat studies for multiple seasons and multiple years, beginning as early as 2003. Avian data has been secured over multiple years and in every season of the year. Whistling Ridge has also completed three years of season-specific analysis of bat populations, demonstrating a commitment to wildlife agency review of data concerning impacts to bats. This survey work is beyond what has typically been done in other Northwest wind power

---

[2] See The Washington Clean Energy Leadership Council at http://www.washingtoncelc.org/mission/

[3] See Washington Department of Natural Resources, "Draft Strategies and Procedures for Wind Power Leasing on HCP Trust Lands," May 27, 2010.

projects, and is consistent with the guideline's theme of siting the project in a manner that will avoid, minimize and mitigate impacts.

We applaud the Project sponsors for the open and transparent manner in which they conducted their research, shared their findings, and engaged the interested public in a series of discussions, field trips, and constructive dialogue. We appreciate the sensitivities associated with a project proposed for location between DNR land historically associated with Northern Spotted Owls and the Columbia Gorge National Scenic Area. In light of these sensitivities, we respectfully suggest that membership in the technical advisory committee (TAC) proposed by the Project sponsors be broadened to include representatives from Washington's environmental community, as well as tribal representatives from the neighboring Yakima Nation. Given its potential as a first project on Washington forestland, we also recommend the Project sponsors work collaboratively with TAC members to develop a comprehensive and robust long-term research agenda.

In sum, RNP believes that the Whistling Ridge Energy Project has demonstrated the commitment to meaningful engagement with wildlife agencies, to rigorous environmental review, and to constructive community dialogue that we believe is consistent with the Washington Wind Power Guidelines, and that characterizes responsible wind energy development in the Northwest's commercial forestlands.

We appreciate the opportunity to provide this comment.

Very truly yours,

John J. Audley, Ph.D
Deputy Director
Renewable Northwest Project

Megan Walseth Decker, J.D.
Senior Staff Counsel
Renewable Northwest Project

Attachment:

cc: Jason Spadaro, Whistling Ridge Energy Project
Phil Anderson, WDFW Director
Ken Berg, USFWS Region Manager
Travis Nelson, WDFW Wind Energy Team

Here it is again.

I've also inserted the text in the body of this note.

Please let me know if you continue to have problems accessing our input.

Renewable

Northwest

Project

917 SW Oak, Suite 303

Portland, OR 97205

Phone: 503.223.4544

Fax: 503.223.4554

www.RNP.org

June 30, 2010

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PO Box 3621
Portland, OR 97208-3621

RE: Renewable Northwest Project's Comments Concerning the Whistling Ridge Energy Project Draft Environmental Impact Statement

Members

3Degrees

3TIER

American Wind Energy Assoc

BP Alternative Energy

Bonneville Environmental Foundation

Clean Energy Systems

Efficiency & Renewable Technologies

CH2M Hill

Citizens' Utility Board

Climate Solutions

Dear Chairman Luce, Director Wright, Mr. Posner, Administrator Wright, Mr. Montano and Council Members:

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need for comprehensive clean energy policy. Reliable, renewable energy will play a key role in overall effort to reduce our reliance upon fossil fuel, and pave the way towards a more robust economy. Realizing its potential to drive future economic development, Washington legislatures charged the Clean Energy Leadership Council (CELC) "to create a clean energy leadership initiative that will set the path to leverage Washington's energy infrastructure and make Washington a hub for clean energy technology and a leader in the creation of green jobs and the

Climate Solutions

Clipper Windpower

Columbia Gorge Community College

David Evans & Associates

Element Power

Environment Oregon

Environment Washington

enXco, Inc.

Eurus Energy America

Everpower Renewables

Geothermal Resources Council

GE Energy

Green Mountain Energy

Horizon Wind Energy

Iberdrola Renewables

Jones Stevedoring

Lane Powell PC

Montana Environmental Information Center

MontPIRG

Natural Resources Defense Council

NextEra Energy Resources

Northwest Environmental Business Council

NW Energy Coalition

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OSPIRG

Port of Vancouver, USA

Portland Energy Conservation, Inc.

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REpower
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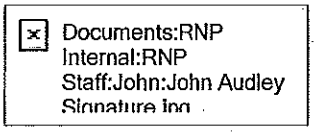
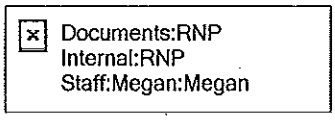
We appreciate the opportunity to provide this comment.

Very truly yours,





John J. Audley, Ph.D
Deputy Director
Renewable Northwest Project

Megan Walseth Decker, J.D.
Senior Staff Counsel
Renewable Northwest Project

Attachment:

cc: Jason Spadaro, Whistling Ridge Energy Project
Phil Anderson, WDFW Director
Ken Berg, USFWS Region Manager
Travis Nelson, WDFW Wind Energy Team

[1] For example, RNP was an active participant in the Kittitas Valley Wind Power Project, due to its significant policy ramifications in shaping the direction of Washington's energy policy.

[2] See The Washington Clean Energy Leadership Council at http://www.washingtoncelc.org/mission/

[3] See Washington Department of Natural Resources, "Draft Strategies and Procedures for Wind Power Leasing on HCP Trust Lands," May 27, 2010.

John J. Audley, Ph.D
Deputy Director
[redacted]

On Jul 6, 2010, at 1:29 PM, COM EFSEC wrote:

> Please be aware, the .htm attachment opens simply as a blank page – please resend it if you would like it included in your comments to the Council. Thank you very much.
>
> **From:** John Audley [redacted]
> **Sent:** Thursday, July 01, 2010 2:47 PM
> **To:** COM EFSEC
> **Cc:** Nelson, Travis W (DFW); Jason S. Spadaro
> **Subject:** Renewable Northwest Project Letter re Whistling Ridge
>
> Dear EFSEC Members and Staff,
>
> Attached are RNP's comments and supporting document for the proposed Whistling Ridge Project. Please do not hesitate to contact me with further questions.
>
> Regards,
>
> John J. Audley, Ph.D
> Deputy Director
> [redacted]

[redacted]

COMMENT LETTER 96

WR - DEIS
Public Comment #234

Michelle, Kayce (COM)

From: Cam Thomas [redacted]
Sent: Thursday, July 01, 2010 12:20 PM
To: COM EFSEC
Subject: Whistling ridge letter
Attachments: EFSEC letter.doc

To: EFSEC

Mr. Stephen Posner,

Please find attached my letter in support of the Whistling Ridge Energy project.

Cam Thomas

Date: July 1, 2010

To: Energy Facility Site Evaluation Council
PO Box 43172
Olympia, WA 98504-3172

From: Mr. Cam Thomas
[redacted]

Re: Whistling Ridge wind turbine project

Like many people giving open testimony, I am all FOR the project. All persons giving testimony about the Whistling Ridge project seem to agree the time is right for a turbine project. Utilities are being mandated to use larger & larger percentages of wind power. The market is here and now, and the time is perfect.

Progress takes change and change can be good for the world as a whole. There are those who want to stop all progress, just for the sake of having no change. Then there are the Not In My Back Yard people. And, from the world wide environmental perspective, wind power is much friendlier than transporting oil half way around the world in ships.

The location of this turbine project seems to be the primary question. Whistling Ridge is where the wind is abundantly available, locally. The ridge's name is derived from the fact that the wind literally whistles thru the trees when it blows. Trading the whistling noise for the soft slap of turbine blades, and then only when the wind blows, may be better than the whistle.

The power connecting substation can be located optimally close to the project sight and right next to a main Bonneville distribution line. This very rural area will limit impact on a very few humans. The wildlife habitat in the area will change, but the habitat itself will not be "lost." Some animals will move out while others will move into the area. In this case, change might be good, or at least neutral. Since all wind turbines will be located outside of the Columbia Gorge National Scenic area, this should not even be an issue. I hope the lazy turning turbine blades will soon be a sign of progress, and a promise of better things to come.

This privately funded project would mean temporary and permanent local employment. No taxpayer government money will be used to support the construction or maintenance of the project. Economically this project is in a perfect area to help bring desperately needed work dollars into Skamania County. The prime example of this is the money now flowing into neighboring Klickitat County.

The many positive aspects of the project far, far out weigh any temporary negatives. Construction traffic will undoubtedly cause some issues for the local residents. But this too will not last forever, and will soon become a distant memory.

For the reasons stated above, I endorse and SUPPORT this project.

Cam Thomas

[redacted]

COMMENT LETTER 97

WR - DEIS
Public Comment #235

Michelle, Kayce (COM)

From: STEVE GIBSON [redacted]
Sent: Friday, July 02, 2010 7:33 AM
To: COM EFSEC
Subject: RECOMMEND SUPPORT of the Whistling Ridge Energy Project Draft EIS

Energy Facility Siting & Evaluation Council

As a five year resident of Klickitat County and a near life long Gorge area resident I support the Whistling Ridge Energy Project & urge your support of this project. The project area is outside the Scenic Area thus concerns that relate to it should/do not apply.

Also & more importantly I urge the Council to disregard the Portland Oregon downtown based Friends of the Gorge's (FOG) thoughts/ efforts to miss lead the EFSE Council otherwise. Any large corporation or private organization like FOG worth **7.5 million** can offer/promote a lot of directed comments & miss represent the **true opinions** of the area citizens who reside in the nearby communities & live here within the Gorge.

Steve Gibson
[redacted]

COMMENT LETTER 98

WR - DEIS
Public Comment #236

Michelle, Kayce (COM)

From: [redacted]
Sent: Friday, July 02, 2010 12:11 PM
To: COM EFSEC
Subject: whistling ridge enery project draft EIS

Hello,
My name is Mary Twombly. I live at 842 Little Rock Creek Rd. Mill A Washington. I moved here almost 3 years ago. The day we signed the papers on our house we found out about the proposed Industrial Wind Turbine Project. After doing some research on my computer my heart sank as I read all the reports from families living within 2 miles of the Industrial monsters. People like us who had sold their big family homes and wanted to scale down, simplify their lives and live a simple life in the country, gardening, working and enjoying nature. Many of these people now live with insomnia, headaches, irritablity, decreased concentration, anxiety, and more. This was very disturbing indeed as I read this information. These are real people, not whiners. They have had to leave their homes to get well. Some have returned only to have the symptoms return. The wind industry disputes these claims dismissing them(without any intelligent responses on why they don't believe it) as whiners, angry etc. Well I would be angry if I had to spend thousands of dollars on medical bills, leave my beloved home and suffer health consequences. People would never do this just to spite the wind industry. These are people just like you and me, and they are sick. It is obvious that there is a problem with placing these large industrial wind turbines too close to residential communities. Why are we continuing to site these projects so close to human habitation?
On June 30th 2010 Carl B. Phillips an epidemiologist and health policy researcher with a PHD from Harvard testified at wind siting hearings held at the Wisconsin Public Service Commission in Madison Wisconsin. He stated that there was ample evidence of a problem of some magnitude with siting the Industrial wind turbines near homes. He had studied the subject in depth and submitted a 5 minute verbal testimony and handed in a lengthy written testimony.
Dr. Nina Pierpont has done extensive work with persons who live with "wind turbine syndrome" and has written a book called "Wind Turbine Syndrome" A Natural Experiment.
I am a nurse and a massage therapist. I am also a sound healer and work with sound. I am aware of the positive and negative effects of sound. Sound vibrations can harm. Sound vibrations destroyed the Tacoma Narrows Bridge. Low frequency sound vibrations were used as torture in WW2. I am very nervous about the installation of these turbines on the ridges of our beautiful community. There are many people who will be living within 2 miles of the project. How can we risk sacrificing the health of our neighbors? Not everyone is affected by the low frequency vibration.
It would be simple if everyone was, but because of this it makes the ones who are look like liars or crackpots. They are not.
There are many other reasons that I am against the Turbine project. I am opposed to the destruction of the landscape and the wildlife that will be affected.
The migratory birds are at risk, golden eagles, bats etc. In other installations it has been noted that with wildlife nearby disappears or is killed.
The Fish and Wildlife Service recommends not to place these turbines on ridges. I have also heard that one cannot predict what will happen with the sound when turbines are placed on ridges.
I am not opposed to wind turbines, but these ridges so close to the scenic area and long established communities are not a good fit. I told Jason Spadero almost 3 years ago, just because you have this land here and you want to be in the energy industry doesn't mean that it is a good fit.
So my biggest concerns are for the health of the people in this community. It's not fair to put them at risk. Pay attention to the new studies coming out.
Carl Phillips says it would be easy to prove that these turbines are causing health problems, but the money isn't being spent on the studies. The industry doesn't want this type of thing "getting in their way".

If you knowingly OK this project with reliable information about causing humans physical harm, you will be liable for their health problems and could be liable in lawsuits down the road. I beg you to look further into this information. Don't be responsible for harming our community. It just isn't right.

Respectfully,

Mary Twombly

[redacted]

COMMENT LETTER 99

RECEIVED
JUL 01 2010
ENERGY FACILITY SITE
EVALUATION COUNCIL

WR - DEIS
Public Comment #238

June 29, 2010

EFSEC
P.O. Box 43172
Olympia, WA 98504-3172

Subject: Whistling Ridge Energy Project

I was unable to attend the recent public hearings regarding the Whistling Ridge Energy Project proposed by SDS Lumber Company. I am in full support of this project and strongly favor its implementation. Sustainable wind energy is an obvious course to pursue in this area of sustainable and abundant energy source.

Having just returned from the eastern Oregon/Washington area, and having seen first-hand the remarkable success being accomplished with harnessing wind power, it only makes good economic sense to take advantage of the site that SDS is proposing.

I have had the pleasure of business relationships with SDS Lumber Company in the past and regard them as a very successful operation. They will install this project in a manner that will certainly benefit this area and the energy needs of the future.

William B. Ward
[redacted]

Cc: Jason Spadaro, President
SDS Lumber Company

RECEIVED

COMMENT LETTER 100

JUL 02 2010
ENERGY FACILITY SITE
EVALUATION COUNCIL

Friday 8:00 AM, 6-25-10

WR - DEIS
Public Comment #239

E.F.S.C.

[redacted]

Hello,

I've been a resident of Skamania County, for 48 years. I watched the great invironmental movement de-stroy our economy and the economy of our sur-rounding counties and states.

I understand, now the Boardman, Oregon coal fired plant, is about to become history! What is wrong with these people? They say it creates acid rain in the gorge. B.S. I say!

The only air quality problem we have is when the west winds blow, bringing all the airshed problems of Portland and Vancouver with it.

Global warming. Al Gore and all of his fellow believers, need to go somewhere and start their own country, someplace else!

Our weather and climet are changed for-ever, each time, a volcano erupts some-where in our world, but they say there's invire-mental movement, never talk of this!

I have no issues over, taking care of our invironment. We should, its our duty to do so as stewards of our world we live

in.

The problems is, ex stream yam!, in anything, is counter productive and really destructive, to our way of life and our countrys economy.

So, my feeling on Wind Farms, lets get it done! Time is wasting. Lets take advantage of this great resorce, the wind!

So, you can see them. So what! I dont like green colored cars. Should I start a movement, to prevent folks from having green cars, who like them? Lordy-no!!

I am 70yrs. old, disabled and retired. I lived alot in these 70yrs. I've seen alot and done alot and learned alot!

All this green madness, thats going on now, is going to destroy us in the end. You've got my vote for the Whistling Ridge project!

Sincerely,

Robert R. Rice

[redacted]

COMMENT LETTER 101

WR - DEIS
Public Comment #241

Michelle, Kayce (COM)

From: alan [redacted]
Sent: Sunday, July 04, 2010 10:32 PM
To: COM EFSEC
Subject: comments on Whistling Ridge energy project

Please accept the following comments regarding the Whistling Ridge wind energy development project.

I am a strong supporter of alternative energy sources, as long as they are properly sited and designed to minimally impact significant natural resources. Unfortunately, in the case of Whistling Ridge, I cannot support this particular development due to its potential negative impact on the Columbia River Gorge.

The Columbia River Gorge was designated as a National Scenic Area in order to protect and manage its scenic beauty and abundant recreation opportunities. Unfortunately, at the time of the original designation, the legislation did not address "view impacts" of adjoining buffer areas as seen from within the National Scenic Area. I would think that, if industrial wind farms would have been prevalent in the Northwest at the time, the legislation would have addressed siting restrictions for this type of use in those areas where it would negatively impact the National Scenic Area.

The Pacific Northwest does not have a shortage of available sites for wind energy developments. Please deny the application for the Whistling Ridge development, and help preserve the soul of our Columbia River Gorge.

Thank you,

alan wilcox
[redacted]

WR - DEIS
Public Comment #244

Michelle, Kayce (COM)

From: alan [redacted]
Sent: Sunday, July 04, 2010 10:32 PM
To: COM EFSEC
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Thank you,

alan wilcox
[redacted]

COMMENT LETTER 102

WR - DEIS
Public Comment #242

Michelle, Kayce (COM)

From: Mary Twombly [redacted]
Sent: Tuesday, July 06, 2010 9:39 AM
To: COM EFSEC
Subject: comments on Whistling Ridge proposal

Hello my name is Steve Andruss. my address is [redacted]

Dear EFSEC comittee, Please do not put the wind turbines on Whistling Ridge. White Salmon and Hood River are known for the famed double mt. views. All of our property values will drop when the area becomes known for its multi-turbine views. We need wind power but not in such a beautiful place. The turbine mess out east is bad enough. I am always thankful when I get west of all those blinking lights. It is enough to ruin the eastern gorge with these industrial giants. I don't know how many turbines are out there but adding another 50 turbines to that mess won't make much difference now. To put up 50 turbines on Whistling ridge would blight the whole area. This is a world class scenic area and should be preserved as that. The project west of the Dalles has been canceled and the middle mt. project south of Hood River has been stopped. If we would have known that Whistling Ridge was to become an industrial wind factory we never would have bought property in Mill A. Common sense tells us this is a bad idea and should never be put in. I have been to meetings and listened to the talk about how safe for birds these mills are. The native americans told us that they could not imagine how a bird could fly into these blades. About 2 weeks later, front page of the Oregonian, Golden eagle killed by wind turbines at Goodnoe Hills. How many Golden Eagles are there in the gorge ? At least one is dead. We were told that up to 7000 bats would be killed if the Whistling Ridge project goes in. How many hawks and eagles will die because of this? What are the long term health effects? I have been told that 750 gallons of oil a year will be atomized in each of the turbines. That does not sound like clean energy. Putting these turbines on mountain tops has not been studied thoroughly so we really don't know what the impact will be. Many peaple are affected by the vibration and sound of the turbines. Again to put them so close to peaple and towns seems short sighted at best. To conclude I would say don't put the proposed Whistling Ridge tubines in as it is the wrong place to put them. Install them out east where there is less scenic beauty and already lots of turbines and more wind to turn them. Sincerely, Steve Andruss [redacted]

COMMENT LETTER 103

WR - DEIS
Public Comment #243

Michelle, Kayce (COM)

From: Daniel Dancer [redacted]
Sent: Tuesday, July 06, 2010 10:47 AM
To: COM EFSEC
Subject: Whistling Ride Comments

Daniel Dancer
[redacted]

To: Energy Facility Site Evaluation Council
Re: Proposed Whistling Ridge Wind Project

Dear Folks,

I steadfastly oppose the Whistling Ridge Project for a number of reasons. Primarily, it is a terrible site as it impacts the Columbia Gorge National Scenic Area in a very big way. Industrial Wind Farms destroy all natural character of the places they are sited. I know. I drive through the eastern Gorge quiet frequently and healthy, wide open feel and wildness of the area is gone now dominated by twirling blades, roads, power lines and thousands of red lights at night. To some this may be an acceptable sacrifice way out in flat farm country, it is completely the opposite, however here on the edge of the Columbia Gorge!!!!

We do need to address increasing energy demands but NOT on the edge of a nationally recognized treasure like the Columbia Gorge.

Thank You,
Daniel Dancer

COMMENT LETTER 104

WR - DEIS
Public Comment #245

RECEIVED
JUL 06 2010
ENERGY FACILITY SITE EVALUATION COUNCIL

Washington State Energy Facility Site Evaluation Council
COMMENT FORM
Whistling Ridge Draft Environmental Impact Statement
Public Hearing and Comment Opportunity

Name: Linda Maddox

Address: [redacted]
(Please include your Zip!)

Email Address: [redacted]

☐ **Add me to the Mailing list/Email list**

Please write any comments you have with respect to the

Leave this sheet in the Comment Box today, or mail it to:
EFSEC, PO Box 43172, Olympia, WA 98504-3172.
Comment letters must be postmarked by Monday, July 19, 2010.

What is wrong with this project?? EVERY THING.
• 50 wind turbines 426 feet tall on the very edge of a National Scenic Area is insane. They are too high, too many and in the wrong place!! If California, or Canada, need this power, they can build their own turbines on their land and ruin their scenery, etc. Let's not be their FOOLS!
• Right now, wind power seems to make sense only because of the tax credits. It is only profitable for the company building the wind farm. The long-term economic effect here in the Gorge would be negative because tourism would be hurt: Scenery = $;

Use the back of this form if you need more room for your comments.

For more information about EFSEC's review of these project changes, please contact:
Stephen Posner, Compliance Manager, PO Box 43172, Olympia, WA 98504-3172,
call (360) 956-2063, or e-mail efsec@cted.wa.gov.

ruined scenery ≠ $ or tourists.

• The effect of a wind farm on bird and wildlife populations is negative. Turbines kill!! In addition, the roads and services necessary to build and service 50 turbines destroy the very rich, abundant, and diverse plant and animal life we have here in the Gorge. A wind farm is an affront to the land and to living things!

For all of the above reasons please deny this application. The environmental impact is too great.

Thank you.

Linda Maddox

Please demonstrate wisdom for all living things.

Michelle, Kayce (COM)

From: [redacted]
Sent: Tuesday, July 06, 2010 10:35 PM
To: COM EFSEC
Subject: I support Whistling Ridge

Hello EFSEC,

I would like to voice my strong support for the Whistling Ridge Energy Project. Washington State utilities must reach the goals set by Initiative 937. Wind is the most feasible and most cost-effective option for bringing 15% new renewable energy on the grid by 2020, which means we need to build more wind farms. Skamania County has the wind, SDS Lumber has the land: it is a match made in heaven. Many studies have shown that the environmental impact of the Whistling Ridge Energy Project would be minimal. For the last century, the site has been used in commercial forest operations. The land has already been cleared, roads built, transmission lines already installed, and wildlife habitats already fragmented. The impacts on a few other species that might be affected are rated low-risk. The environmental benefits are numerous. Wind is clean, renewable, and does not consume water or produce waste. Whistling Ridge will generate 75 megawatts of electricity; enough to power 20,000 homes a year, without contributing to global climate change. The choice is clear: support Whistling Ridge and Skamania County by approving this project.

Sincerely,
john inglis
[redacted]

COMMENT LETTER 106

WR - DEIS
Public Comment #247

Michelle, Kayce (COM)

From: [redacted]
Sent: Wednesday, July 07, 2010 3:30 PM
To: COM EFSEC
Subject: I support Whistling Ridge

Hello Energy Facility Site Evaluation Council,

I would like to voice my strong support for the Whistling Ridge Energy Project. This wind farm will give the Skamania County economy the boost it needs. We are too dependent on timber harvests and federal timber payments. Too many residents are stuck in low-income brackets while unemployment ranks far above the state average. Fortunately, Skamania has another natural resource to develop: wind. Bringing another industry here is exactly what our county needs. It will stimulate local spending, create jobs, and provide new tax revenues. How can that be a bad thing? Skamania County needs to diversify its resources and revenue, and Whistling Ridge can make that happen. I hope the Council approves the SDS application and that the project advances quickly.

Sincerely,
Eric Hess
[redacted]

COMMENT LETTER 107

WR - DEIS
Public Comment #248

Michelle, Kayce (COM)

From: [redacted]
Sent: Wednesday, July 07, 2010 3:35 PM
To: COM EFSEC
Subject: I support Whistling Ridge

Hello Energy Facility Site Evaluation Council,

I would like to voice my strong support for the Whistling Ridge Energy Project. Washington State utilities must reach the goals set by Initiative 937. Wind is the most feasible and most cost-effective option for bringing 15% new renewable energy on the grid by 2020, which means we need to build more wind farms. Skamania County has the wind, SDS Lumber has the land: it is a match made in heaven. Many studies have shown that the environmental impact of the Whistling Ridge Energy Project would be minimal. For the last century, the site has been used in commercial forest operations. The land has already been cleared, roads built, transmission lines already installed, and wildlife habitats already fragmented. The impacts on a few other species that might be affected are rated low-risk. The environmental benefits are numerous. Wind is clean, renewable, and does not consume water or produce waste. Whistling Ridge will generate 75 megawatts of electricity; enough to power 20,000 homes a year, without contributing to global climate change. The choice is clear: support Whistling Ridge and Skamania County by approving this project.

Sincerely,
Corey Smitke
[redacted]

COMMENT LETTER 108

WR - DEIS
Public Comment #249

Michelle, Kayce (COM)

From: [redacted]
Sent: Wednesday, July 07, 2010 4:07 PM
To: COM EFSEC
Subject: I support Whistling Ridge

Hello Energy Facility Site Evaluation Council,

I would like to voice my strong support for the Whistling Ridge Energy Project. This wind farm will give the Skamania County economy the boost it needs. We are too dependent on timber harvests and federal timber payments. Too many residents are stuck in low-income brackets while unemployment ranks far above the state average. Fortunately, Skamania has another natural resource to develop: wind. Bringing another industry here is exactly what our county needs. It will stimulate local spending, create jobs, and provide new tax revenues. How can that be a bad thing? Skamania County needs to diversify its resources and revenue, and Whistling Ridge can make that happen. I hope the Council approves the SDS application and that the project advances quickly.

Sincerely,
Nicole Bates
[redacted]

COMMENT LETTER 109

WR - DEIS
Public Comment #250

Michelle, Kayce (COM)

From: [redacted]
Sent: Wednesday, July 07, 2010 4:26 PM
To: COM EFSEC
Subject: I support Whistling Ridge

Hello Energy Facility Site Evaluation Council,

I would like to voice my strong support for the Whistling Ridge Energy Project. Washington State utilities must reach the goals set by Initiative 937. Wind is the most feasible and most cost-effective option for bringing 15% new renewable energy on the grid by 2020, which means we need to build more wind farms. Skamania County has the wind, SDS Lumber has the land: it is a match made in heaven. Many studies have shown that the environmental impact of the Whistling Ridge Energy Project would be minimal. For the last century, the site has been used in commercial forest operations. The land has already been cleared, roads built, transmission lines already installed, and wildlife habitats already fragmented. The impacts on a few other species that might be affected are rated low-risk. The environmental benefits are numerous. Wind is clean, renewable, and does not consume water or produce waste. Whistling Ridge will generate 75 megawatts of electricity; enough to power 20,000 homes a year, without contributing to global climate change.
As a Washington resident who often enjoys the recreational activities available in Skamania County and the Columbia River Gorge (and hence contributes to the local economy), I feel that windmills would enhance rather than detract from the natural beauty of the area. Those who oppose the responsible construction of windfarms are selfish and short-sighted.
The choice is clear: support Whistling Ridge and Skamania County by approving this project.

Thank you for your time.

Sincerely,

Elinor Westfold

Sincerely,
Elinor Westfold
[redacted]

COMMENT LETTER 110

WR - DEIS
Public Comment #251

Michelle, Kayce (COM)

From: [redacted]
Sent: Wednesday, July 07, 2010 5:08 PM
To: COM EFSEC
Subject: I support Whistling Ridge

Hello Energy Facility Site Evaluation Council,

I\'m an tired of our country being held hostage to Big Oil with its many foreign sources. I am tired of the ecological disasters that accompany the exploration, refining and consumption of oil. It is imperative that safe, non-poluting forms of energy are encouraged. Wind River is such an alternative. Not to approve this wind farm would be both irresponsible and un-American!!

Sincerely,
Julian Mueller
[redacted]

COMMENT LETTER 111

Michelle, Kayce (COM)

From: [redacted]
Sent: Wednesday, July 07, 2010 5:35 PM
To: COM EFSEC
Subject: I support Whistling Ridge

Hello Energy Facility Site Evaluation Council,

I would like to voice my strong support for the Whistling Ridge Energy Project. Washington State utilities must reach the goals set by Initiative 937. Wind is the most feasible and most cost-effective option for bringing 15% new renewable energy on the grid by 2020, which means we need to build more wind farms. Skamania County has the wind, SDS Lumber has the land: it is a match made in heaven. Many studies have shown that the environmental impact of the Whistling Ridge Energy Project would be minimal. For the last century, the site has been used in commercial forest operations. The land has already been cleared, roads built, transmission lines already installed, and wildlife habitats already fragmented. The impacts on a few other species that might be affected are rated low-risk. The environmental benefits are numerous. Wind is clean, renewable, and does not consume water or produce waste. Whistling Ridge will generate 75 megawatts of electricity; enough to power 20,000 homes a year, without contributing to global climate change. The choice is clear: support Whistling Ridge and Skamania County by approving this project.

Sincerely,
Randy Kessler
[redacted]

COMMENT LETTER 112

WR - DEIS
Public Comment #253

Michelle, Kayce (COM)

From: [redacted]
Sent: Wednesday, July 07, 2010 6:20 PM
To: COM EFSEC
Subject: I support Whistling Ridge

Hello Energy Facility Site Evaluation Council,

I would like to voice my strong support for the Whistling Ridge Energy Project. I am a medical student at the University of Washington School of Medicine, and while my professional focus is not on the environment, I am well aware of the human impacts that environmental damage can cause. The recent tragedy in the Gulf Coast highlights the previously existing need for alternative energy, and opponents to its development are contributing to environmental damage while claiming to be fighting against it.

Washington State utilities must reach the goals set by Initiative 937. Wind is the most feasible and most cost-effective option for bringing 15% new renewable energy on the grid by 2020, which means we need to build more wind farms. Skamania County has the wind, SDS Lumber has the land: it is a match made in heaven. Many studies have shown that the environmental impact of the Whistling Ridge Energy Project would be minimal. For the last century, the site has been used in commercial forest operations. The land has already been cleared, roads built, transmission lines already installed, and wildlife habitats already fragmented. The impacts on a few other species that might be affected are rated low-risk. The environmental benefits are numerous. Wind is clean, renewable, and does not consume water or produce waste. Whistling Ridge will generate 75 megawatts of electricity; enough to power 20,000 homes a year, without contributing to global climate change. The choice is clear: support Whistling Ridge and Skamania County by approving this project.

Thank you,
Dave Markel

Sincerely,
Dave Markel
[redacted]

COMMENT LETTER 113

WR - DEIS
Public Comment #254

Michelle, Kayce (COM)

From: [redacted]
Sent: Wednesday, July 07, 2010 7:26 PM
To: COM EFSEC
Subject: I support Whistling Ridge

Hello Energy Facility Site Evaluation Council,

I strongly support the Whistling Ridge Energy Project. We need renewable clean energy now! This project has it all. Great wind and low impact. It is time to move for energy independence now.

Sincerely,
Craig Keebler
[redacted]

COMMENT LETTER 114

WR - DEIS
Public Comment #255

Michelle, Kayce (COM)

From: [redacted]
Sent: Thursday, July 08, 2010 11:01 AM
To: COM EFSEC
Subject: I support Whistling Ridge

Hello Energy Facility Site Evaluation Council,

I would like to voice my strong support for the Whistling Ridge Energy Project. Washington State utilities must reach the goals set by Initiative 937. Wind is the most feasible and most cost-effective option for bringing 15% new renewable energy on the grid by 2020, which means we need to build more wind farms. Skamania County has the wind, SDS Lumber has the land: it is a match made in heaven. Many studies have shown that the environmental impact of the Whistling Ridge Energy Project would be minimal. For the last century, the site has been used in commercial forest operations. The land has already been cleared, roads built, transmission lines already installed, and wildlife habitats already fragmented. The impacts on a few other species that might be affected are rated low-risk. The environmental benefits are numerous. Wind is clean, renewable, and does not consume water or produce waste. Whistling Ridge will generate 75 megawatts of electricity; enough to power 20,000 homes a year, without contributing to global climate change. The choice is clear: support Whistling Ridge and Skamania County by approving this project.

Sincerely,
Edwin Mirsky
[redacted]

COMMENT LETTER 116

WR - DEIS
Public Comment #256 6-18-10

To Whom it Concerns.

Sorry I could not make it to the meeting 6-17. I was not feeling well.

I ask all for the Whistling Ridge Energy project. We really need this project to help with energy costs. So many seniors are low income and have a hard time affording utilities - this would be a big help

Sincerely
Clara M. Donat

RECEIVED
JUN 22 2010
ENERGY FACILITY SITE
EVALUATION COUNCIL

COMMENT LETTER 116

WR - DEIS
Public Comment #257

Michelle, Kayce (COM)

From: [redacted]
Sent: Thursday, July 08, 2010 12:31 PM
To: COM EFSEC
Subject: I support Whistling Ridge

Hello Energy Facility Site Evaluation Council,

I want to leave my children with clean, reliable, inexpensive electricity to power their future. That means developing alternative sources of energy and having a whole mix of power options to serve our growing population. Wind energy is one of those choices and it makes sense to develop it at Whistling Ridge. Few places exist with the strong winds and transmission lines for such a project. Wind energy is clean, renewable, cost competitive, and is a product we can make right here and use or export to the rest of the country, just like timber. It creates no pollution and can coexist peacefully with the wonderful variety of wildlife we enjoy. Please allow this project to go ahead so that we can leave our children with alternatives for their energy future.

Sincerely,
Fibi Duke
[redacted]

COMMENT LETTER 117

WR - DEIS
Public Comment #258

Michelle, Kayce (COM)

From: D Garner [redacted]
Sent: Thursday, July 08, 2010 12:35 PM
To: COM EFSEC
Subject: Whistling Ridge Energy Project
Attachments: 1Windmills.doc

I would like to submit the attached letter as public comment to the Whistling Ridge Energy Project.

Thank you,

Debra Garner
[redacted]

Re: Whistling Ridge Wind Farm

The Whistling Ridge project would technically not be *within* the scenic area, but it would bring an unnatural and terribly imposing negative visual impact *to* the scenic area. It sets a horrible precedent for industrial-scale and visually imposing and discordant development that will be quite visible from an area prized for its wild areas and scenic beauty.

If find this project disturbing enough, but won't it also set a precedent for even more and possibly even higher windmills? I fear we will have opened pandora's box if we allow this project to move forward.

Are these super tall, stark white, three-winged towers the only or best technology? Do windmills have to be so terribly "in our faces?" Cell towers are sometimes disguised as trees. Can windmills be more of the "eggbeater" design, painted to disappear a bit more and possibly disguised?

Once these windmills are built, they will stand for decades – in use or not. What extra would it cost to locate the windmills (either in construction cost or less efficiency) outside the VIEW of the Gorge Scenic Area? Since this project, like all other windmill projects, is subsidized, shouldn't the tax payer dollars benefit the most people, not just the investors?

Please reconsider this project for the issues above. The country needs alternative energy sources, but we need to be smart about it as well. Once the visual impact is altered by a project like this, it is altered for all decades.

Sincerely,

Debra Garner

[redacted]

COMMENT LETTER 118

WR - DEIS
Public Comment #259

Michelle, Kayce (COM)

From: Tom and Joanne Cochran [redacted]
Sent: Sunday, July 11, 2010 12:09 PM
To: COM EFSEC
Subject: The Whistling Ridge Energy Project

Since I could not attend the hearing on the wind farm proposal, I want to now voice my opposition to this project. My husband and I live approximately 1 mile from the proposed site and are extremely fearful of the noise, vibration, killing of birds and wildlife, health hazard from the droning, and invasion of our beloved quiet and privacy we have enjoyed for over 20 years. We understand the value of "harnessing the wind" but, please, not SO close to an established community! Thank you for your consideration.

Joanne M. Cochran
[redacted]

COMMENT LETTER 119

WR - DEIS
Public Comment #260

Michelle, Kayce (COM)

From: Mark King [redacted]
Sent: Monday, July 12, 2010 4:47 PM
To: COM EFSEC
Subject: Whistling Ridge Energy Project Draft EIS Comment
Attachments: NW_LAKE_HOA-DEIS.pdf

To EFSEC & BPA:

Attached, in PDF format, are Comments from the Board of Directors of the Northwestern Lake Development Homeowners' Association regarding the Whistling Ridge Energy Project Draft EIS.

Thank you,

Mark King, President
[redacted]

NORTHWESTERN LAKE DEVELOPMENT HOMEOWNERS' ASSOCIATION

[redacted]

June 12, 2010

EFSEC
Via e-mail to efsec@commerce.wa.gov

BPA
Via internet at www.bpa.gov/comment

Re: Whistling Ridge Energy Project – Application No. 2009-01: Draft EIS Comments.

To EFSEC and BPA:

The Board of Directors of Northwestern Lake Development Homeowners' Association submits the following comments regarding the Draft Environmental Impact Study (DEIS) conducted by EFSEC and BPA with respect to the Whistling Ridge Energy Project (the Project).

I. Introduction.

We represent the owners of 30 residential properties located near the mouth of Little Buck Creek where it empties into Northwestern Lake. There are currently 23 residences built, most of which are full-time residences (as distinct from most recreational cabins located along Northwestern Lake). Our community is approximately two miles east of the Project, and is near the bottom of the Little Buck Creek watershed. The Project would sit at the head of this watershed. Because of our proximity to the Project, we have major concerns about the possible adverse effects it might have on us and our environment.

We submitted Scoping comments, dated 5/15/2009, for this EIS. After reviewing the DEIS, we are of the opinion that, while the DEIS contains massive amounts of information on topics related to the issues we raised, the DEIS fails to directly address and respond to most of our concerns in a meaningful way. We have therefore resubmitted our previous comments in their entirety, and request that EFSEC and BPA revise the DEIS to respond directly and specifically to the concerns that our community has.

Our residents have invested significant amounts of time, energy, money, and especially emotion in building homes and lifestyles focused on our rural, sylvan environment. While we have always known we would be affected by various rural activities such as agriculture and timber operations, we never anticipated that a major industrial activity like a wind farm could be located so near to us. We have grave concerns about several possible adverse effects of the project, and consequent reservations about the location of the Project. We therefore request that EFSEC and BPA carefully study and analyze all possible adverse effects of the Project in its proposed location and evaluate whether other locations would be more appropriate for this type of project.

II. DEIS Issues.

A. Potential Adverse Effects.

1. Noise.

The dominant concern expressed by our Members has been fear that noise from the Project will be a constant nuisance whenever our windows are open, or when we are outside our

homes. Although we are located two miles from the Project, we are concerned that this distance will not protect us due to our geography and wind patterns. The Project will be located at the head of the Little Buck Creek watershed. We are concerned that sound from the Project will echo off valley walls and have an amplified effect on us. In addition, the prevailing winds in the summer (when we are outside most) blow from the Project straight to our homes. So we are also concerned that the wind will carry more noise from the Project to us.

SDS's application has a sound map suggesting that our area will receive 20+ dB of sound from the Project. It is not at all clear to us how this map was produced or whether it is reliable. Perhaps more important, based on reports we have read from residents located near active wind farms, specific decibel measurements might not be the best way to determine whether noise from wind turbines will have an adverse effect. Some of the strongest complaints about wind turbine noise are due to the low-frequency sounds - a constant "whumping" similar to the bass beat that can be heard (and felt) from certain car stereos even from a great distance, and even with the windows rolled up. We have heard that these low frequency sounds can sometimes have much greater impact at a distance than they do at the point of creation. We are therefore very worried about how such sounds might affect us.

It is our understanding that few if any wind projects have been built in terrain with valleys and ridges like ours. So it seems there is very little track record for predicting how noise from the Project might affect us. We therefore request that the EIS make very extensive studies of how sound from the Project will affect us and other residents. In particular, we think tests should be conducted that reproduce, at the Project site, the noise from a project of this size as accurately as technologically possible. Measurements of the noise should be taken not only with instruments, but more importantly, with surveys of the subjective impressions of all affected residents. Unless such surveys are taken, we do not believe an accurate prediction can be made regarding noise effects of the Project.

Lastly, in evaluating whether such noise effects (or any other effects to people) are considered "adverse", we request that EFSEC and BPA rely not on statutory definitions based on decibel levels. Rather, a conclusion that an effect will be "adverse" should be determined by whether the effect will unreasonably diminish the enjoyment of day-to-day life.

3. Lights.

Another complaint we have read about wind turbines regards aviation lights. We request that the EIS investigate what types of light (color, synchronization, quantity, etc.) would have the least impact to people and wildlife. We also request that the EIS evaluate what, if any visual effects aviation lights will have on the night sky in our community (for example, will we see reflections of the lights in the sky on cloudy nights, or even on clear nights?) Likewise, we have read of complaints about "shadow-flicker" from wind turbines. We request that the EIS evaluate whether late afternoon "shadow flicker " will affect our residences, or be visible on the ridges to the east of our community.

3. Environment.

There are many items that should be considered from an environmental and ecosystem perspective regarding a large project like this. All projects like this have an "environmental cost" and although it may not appear to affect our community directly, it does affect the earth; ultimately we are all reliant on the environmental resources of the earth to keep us and all other living creatures alive. In particular, we are concerned that, due to this Project's location in a forest ecosystem, far more wildlife will be negatively affected or harmed than if it were located

in a wheatfield or open plain environment. We are also concerned about whether there will be effects to groundwater and surface water. We request that the EIS carefuly evaluate what effects the Project would have on wildlife and the ecosystem.

4. Economics.

While proponents of the Project have correctly emphasized that it could bring some welcome jobs and tax revenues to the area, our Members are quite concerned that if the Project adversely affects our homes, our property values will also be adversely affected. The EIS should evaluate all financial effects of the Project, including specific estimates of diminished property values (region wide) due to reasonably foreseeable adverse effects of the Project.

5. Views.

Our Members have mixed opinions as to whether they would necessarily object to views of the wind turbines, however, most believe that structures of this nature are not in keeping with the spirit or beauty of a National Scenic Area even though such structures are built on land that is just outside of the boundary.

B. Location of the Project.

It would appear that there are much better places to site a project of this magnitude. There are thousands of acres of farmland in Eastern Washington that can (and do) support this type of development. The land to the East is vast, it's close to transmission lines, it is many miles away from homes, has limited recreational value, limited wildlife (as compared to a forest), limited renewable resource (as compared to the timber resources here), there is limited damage to the ecosystem due to installation and it would not detract from views of a National Scenic area. We request that the EIS fully evaluate all of these considerations.

C. Precedent.

We believe it is critical that the EIS address the potential precedent that would be set by approval of this Project. Because it is the first wind farm in Washington to be located in a forest environment (we are told), adjacent to a National Scenic Area, and close to so many residences, a very detailed and thorough analysis of its potential impacts must be provided. Approval of the current application for this project will have precedential effect not only for projects in other regions, but also for expansion of this Project. SDS and DNR have acknowledged that they are investigating a major possible expansion of this Project onto DNR land. We do not know if SDS will seek to expand this Project even further on its own adjacent lands (which would be closer to our community.) However, we are worried that if this Project is approved now based on it's smaller size, it will be very difficult to prevent expansions that might initially have been rejected based on an upfront perspective of the total impacts. Consequently, we request that the EIS take the broadest possible view when evaluating the impacts of this Project.

(continued)

III. Conclusion.

We fully support renewable energy and believe it is critical that we embrace it, however, like anything else there are many alternatives to reaching the goals of green power. Some locations are inherently better than others for meeting these goals without imposing undue burdens on the environment or people living near the projects. Given that there are abundant optional locations for this type of project, we cannot support this Project until there is conclusive documentation that it will not have "adverse effects" on our lives and our environment. We respectfully request that EFSEC and BPA rigorously investigate, document, and evaluate our concerns. Thank you.

Sincerely,

Board of Directors: Mike Gundlach, Lynden Hollowell, Mark King, Nanci Sayler, Kit Silver.
Northwestern Lake Development Homeowners' Association

Montano,Andrew M - KEC-4

From: Mark King [redacted]
Sent: Friday, July 16, 2010 11:05 AM
To: Montano,Andrew M - KEC-4
Subject: Re: Whistling Ridge Energy Project DEIS Comment

Attachments: NWLake100712.pdf

NWLake100712.pdf
(192 KB)

Mr. Montano,

The BPA Comment page still does not accept our comments in a pdf attachment, so I am submitting our comments in a pdf attachment to this email. Please let me know if this is acceptable.

Thank you,

Mark King
Northwestern Lake Development Homeowners' Association
[redacted]
(For your records, I would list our organization as a "special interest" organization.)

On 7/13/10 8:48 AM, "Montano,Andrew M - KEC-4" <ammontano@bpa.gov> wrote:

> Mr. King,
>
> You can input your comments directly at www.bpa.gov/comment, or you may also
> print out and FAX your *.pdf document to (503) 230-3285.
>
> Additional information on how to comment can be found at the project website
> at www.bpa.gov/go/whistling.
>
> Please let me know if this does not resolve your issues. Thanks for your
> interest in this project!
>
>
> Andrew M. Montaño
> Bonneville Power Administration | Environmental Protection Specialist
> ammontano@bpa.gov | P: 503. 230. 4145 | F: 503. 230. 5699
> Pleasure in the job puts perfection in the work. -Aristotle
>
>
>
> -----Original Message-----
> From: Mark King [redacted]
> Sent: Monday, July 12, 2010 5:14 PM
> To: Montano,Andrew M - KEC-4
> Subject: Problem with Whistling Ridge Comment Page
>
> Mr. Montano,
>

> I tried to submit comments on the BPA's comment page for the Whistling Ridge
> Energy Project Draft EIS. The comments are in pdf format, but the comment
> page fails to recognize that and refuses to accept them. I am on a Mac
> computer, but I exchange pdf files daily with many computer platforms.
>
> Do you have any suggestions?
>
> Thank you,
>
> Mark King, President
> [redacted]
>
>
>

NORTHWESTERN LAKE DEVELOPMENT HOMEOWNERS' ASSOCIATION

[redacted]

June 12, 2010

EFSEC
Via e-mail to efsec@commerce.wa.gov

BPA
Via internet at www.bpa.gov/comment

Re: Whistling Ridge Energy Project – Application No. 2009-01: Draft EIS Comments.

To EFSEC and BPA:

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Our residents have invested significant amounts of time, energy, money, and especially emotion in building homes and lifestyles focused on our rural, sylvan environment. While we have always known we would be affected by various rural activities such as agriculture and timber operations, we never anticipated that a major industrial activity like a wind farm could be located so near to us. We have grave concerns about several possible adverse effects of the project, and consequent reservations about the location of the Project. We therefore request that EFSEC and BPA carefully study and analyze all possible adverse effects of the Project in its proposed location and evaluate whether other locations would be more appropriate for this type of project.

II. DEIS Issues.

A. Potential Adverse Effects.

1. Noise.

The dominant concern expressed by our Members has been fear that noise from the Project will be a constant nuisance whenever our windows are open, or when we are outside our

homes. Although we are located two miles from the Project, we are concerned that this distance will not protect us due to our geography and wind patterns. The Project will be located at the head of the Little Buck Creek watershed. We are concerned that sound from the Project will echo off valley walls and have an amplified effect on us. In addition, the prevailing winds in the summer (when we are outside most) blow from the Project straight to our homes. So we are also concerned that the wind will carry more noise from the Project to us.

SDS's application has a sound map suggesting that our area will receive 20+ dB of sound from the Project. It is not at all clear to us how this map was produced or whether it is reliable. Perhaps more important, based on reports we have read from residents located near active wind farms, specific decibel measurements might not be the best way to determine whether noise from wind turbines will have an adverse effect. Some of the strongest complaints about wind turbine noise are due to the low-frequency sounds - a constant "whumping" similar to the bass beat that can be heard (and felt) from certain car stereos even from a great distance, and even with the windows rolled up. We have heard that these low frequency sounds can sometimes have much greater impact at a distance than they do at the point of creation. We are therefore very worried about how such sounds might affect us.

It is our understanding that few if any wind projects have been built in terrain with valleys and ridges like ours. So it seems there is very little track record for predicting how noise from the Project might affect us. We therefore request that the EIS make very extensive studies of how sound from the Project will affect us and other residents. In particular, we think tests should be conducted that reproduce, at the Project site, the noise from a project of this size as accurately as technologically possible. Measurements of the noise should be taken not only with instruments, but more importantly, with surveys of the subjective impressions of all affected residents. Unless such surveys are taken, we do not believe an accurate prediction can be made regarding noise effects of the Project.

Lastly, in evaluating whether such noise effects (or any other effects to people) are considered "adverse", we request that EFSEC and BPA rely not on statutory definitions based on decibel levels. Rather, a conclusion that an effect will be "adverse" should be determined by whether the effect will <u>unreasonably diminish the enjoyment of day-to-day life</u>.

3. <u>Lights</u>.

Another complaint we have read about wind turbines regards aviation lights. We request that the EIS investigate what types of light (color, synchronization, quantity, etc.) would have the least impact to people and wildlife. We also request that the EIS evaluate what, if any visual effects aviation lights will have on the night sky in our community (for example, will we see reflections of the lights in the sky on cloudy nights, or even on clear nights?) Likewise, we have read of complaints about "shadow-flicker" from wind turbines. We request that the EIS evaluate whether late afternoon "shadow flicker " will affect our residences, or be visible on the ridges to the east of our community.

3. <u>Environment</u>.

There are many items that should be considered from an environmental and ecosystem perspective regarding a large project like this. All projects like this have an “environmental cost” and although it may not appear to affect our community directly, it does affect the earth; ultimately we are all reliant on the environmental resources of the earth to keep us and all other living creatures alive. In particular, we are concerned that, due to this Project's location in a forest ecosystem, far more wildlife will be negatively affected or harmed than if it were located

in a wheatfield or open plain environment. We are also concerned about whether there will be effects to groundwater and surface water. We request that the EIS carefuly evaluate what effects the Project would have on wildlife and the ecosystem.

4. Economics.

While proponents of the Project have correctly emphasized that it could bring some welcome jobs and tax revenues to the area, our Members are quite concerned that if the Project adversely affects our homes, our property values will also be adversely affected. The EIS should evaluate all financial effects of the Project, including specific estimates of diminished property values (region wide) due to reasonably foreseeable adverse effects of the Project.

5. Views.

Our Members have mixed opinions as to whether they would necessarily object to views of the wind turbines, however, most believe that structures of this nature are not in keeping with the spirit or beauty of a National Scenic Area even though such structures are built on land that is just outside of the boundary.

B. Location of the Project.

It would appear that there are much better places to site a project of this magnitude. There are thousands of acres of farmland in Eastern Washington that can (and do) support this type of development. The land to the East is vast, it's close to transmission lines, it is many miles away from homes, has limited recreational value, limited wildlife (as compared to a forest), limited renewable resource (as compared to the timber resources here), there is limited damage to the ecosystem due to installation and it would not detract from views of a National Scenic area. We request that the EIS fully evaluate all of these considerations.

C. Precedent.

We believe it is critical that the EIS address the potential precedent that would be set by approval of this Project. Because it is the first wind farm in Washington to be located in a forest environment (we are told), adjacent to a National Scenic Area, and close to so many residences, a very detailed and thorough analysis of its potential impacts must be provided. Approval of the current application for this project will have precedential effect not only for projects in other regions, but also for expansion of this Project. SDS and DNR have acknowledged that they are investigating a major possible expansion of this Project onto DNR land. We do not know if SDS will seek to expand this Project even further on its own adjacent lands (which would be closer to our community.) However, we are worried that if this Project is approved now based on it's smaller size, it will be very difficult to prevent expansions that might initially have been rejected based on an upfront perspective of the total impacts. Consequently, we request that the EIS take the broadest possible view when evaluating the impacts of this Project.

(continued)

III. Conclusion.

We fully support renewable energy and believe it is critical that we embrace it, however, like anything else there are many alternatives to reaching the goals of green power. Some locations are inherently better than others for meeting these goals without imposing undue burdens on the environment or people living near the projects. Given that there are abundant optional locations for this type of project, we cannot support this Project until there is conclusive documentation that it will not have "adverse effects" on our lives and our environment. We respectfully request that EFSEC and BPA rigorously investigate, document, and evaluate our concerns. Thank you.

Sincerely,

Board of Directors: Mike Gundlach, Lynden Hollowell, Mark King, Nanci Sayler, Kit Silver.
Northwestern Lake Development Homeowners' Association

COMMENT LETTER 120

WR - DEIS
Public Comment #261

Michelle, Kayce (COM)

From: James Pytel [redacted]
Sent: Monday, July 12, 2010 11:25 PM
To: COM EFSEC; info@whistlingridgeenergy.com
Subject: Letter of Support For the Whistling Ridge Energy Project

Whistling Ridge,

Wow! It could happen here. Our little community can be a part of a new clean energy economy. I salute Whistling Ridge Energy/SDS efforts to really make this happen. Power has to come from somewhere and what a better place than a locally produced renewable source right in our backyard. We have the wind resource, the transmission lines, and a local company and willing workforce that can make this happen. Let's do this one right.

Ultimately, the arguments against wind turbines boil down to detractors "don't like the way they look." They are entitled to this opinion. If educated about the dirty alternatives or presented with the very real possibility of their sons and daughters being involved in future conflicts to secure our nation's energy security I'm certain their opinions would change.

The new energy economy is not about a silver bullet that renders everything else obsolete. Wind energy is going to be just one part of an increasingly interlinked and interdependent network of distributed renewable energy generation facilities. Solar, hydro, biomass, waves, geothermal, and wind are the silver buckshot that will move our country towards energy independence. I would be proud to say that I'm from a forward community that is contributing towards this effort.

Oh, and, for the record … I think wind turbines look amazingly cool.

Sincerely,
Jim Pytel
[redacted]

COMMENT LETTER 121

WR - DEIS
Public Comment #262

Michelle, Kayce (COM)

From: Douglas Hanes [redacted]
Sent: Tuesday, July 13, 2010 10:10 AM
To: COM EFSEC
Subject: Governor Gregoire must deny Whistling Ridge

I would like to urge you to deny permission for the wind energy project proposed by Whistling Ridge. Although wind energy may be appropriate in some areas, it is simply short-sighted and destructive to allow for-profit corporations to plant wind farms in sensitive areas, with major financial incentives, without the state and country first making a careful study of what locations are appropriate. This kind of marring of the landscape is virtually impossible to undo, and the benefits of the excess energy production are far-off and limited. The project could easily end up being a complete boondoggle, with citizens and the environment paying the price, not just financially, but in loss of our beloved natural areas.

So much more energy could be saved by some modest efforts at energy conservation, and the environment of our region would benefit too. I urge you to take on the vested interests and push for real conservation measures, calling on the people of Washington to each do their part, instead of opting for the easy political gains of hyping alternate energy while selling out the state to self-interested corporations.

Beyond all this, I fully support the following message from Friends of the Columbia Gorge:

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area. EFSEC should recommend that Governor Gregoire deny this project.
This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because this project is proposed along a forested ridgeline in the foothills of the Cascade Mountains. The project would permanently disturb large areas of forested habitat and result in direct and indirect impacts to multiple wildlife species through habitat loss and displacement, direct collisions with turbine blades, and other factors. The potentially affected listed and sensitive species include northern spotted owl, western gray squirrel, northern goshawk, several species of bats, multiple migratory bird species, mule deer, black-tailed deer, and elk.
In addition, locating 426-foot-tall turbines on the ridge line of the Columbia River Gorge would degrade the scenic value of the Gorge. The turbines and their blinking lights would be highly visible from several designated key viewing areas within the National Scenic Area, including Interstate 84, the Historic Columbia River Highway, Columbia River, Cook-Underwood Road, and Panorama Point. The project would introduce industrial development into the natural, forested landscape and indefinitely alter views in the National Scenic Area.

I support renewable energy, but I am opposed to industrial-scale wind energy development within or adjacent to the Columbia River Gorge National Scenic Area, a designated national scenic treasure.

Douglas Hanes

COMMENT LETTER 122

WR - DEIS
Public Comment #263

Michelle, Kayce (COM)

From: [redacted]
Sent: Tuesday, July 13, 2010 11:02 AM
To: COM EFSEC
Subject: I support Whistling Ridge

Hello Energy Facility Site Evaluation Council,

I would like to voice my strong support for the Whistling Ridge Energy Project. This wind farm will give the Skamania County economy a necessary boost. Our county has struggled for too many years with high unemployment, which is far above the state average. Now Skamania County has an opportunity to take advantage of a natural resource,which is clean and economically viable. This industry is exactly what our county needs. It will stimulate local spending, create jobs, and provide new tax revenues. How can that be a bad thing? Skamania County needs to diversify its resources and revenue, and Whistling Ridge can make that happen. I urge the Council to approve the SDS application and advance this important project quickly.

Sincerely,
Theresa Lusty
[redacted]

COMMENT LETTER 123

WR - DEIS
Public Comment #264

Michelle, Kayce (COM)

From: Rusty Neff [redacted]
Sent: Tuesday, July 13, 2010 8:27 PM
To: COM EFSEC
Subject: Whistling Ridge Energy Project Draft EIS

RE: Whistling Ridge Energy Project Draft EIS

To Whom It May Concern;

I'm writing to express my opposition to the Whistling Ridge Energy Project . As a third generation local of the greater White Salmon area, I am appalled at what SDS Lumber is proposing for this project.

We as a community and region have developed green energy here for nearly 100 years in the form of hydroelectric power on the Columbia and its tributaries. In doing so we have sacrificed Celilo Falls, the Cascade Rapids and much of the salmon and steelhead fisheries, as well as many amazing historical Native American sites. Nearby in Klickitat County, we have numerous wind energy projects already developed and more on the way.

How much is enough for one area? The Whistling Ridge project is proposed to be sited on timberland owned by SDS Lumber Company. While the company claims it is not productive, we have watched them harvest and utilize timber from this site. But timber prices are down a bit and the company thinks it can make more money by cutting the trees and placing wind turbines where the trees once stood. In what way is this green? The trees are necessary for cleaning our air and water, pulling CO2 out of the air, providing wildlife habitat and stabilizing the soils on relatively steep slopes. And by planning for wind turbines with blades that will reach as low as 100 feet off the ground, we know they won't be re-growing timber on the site.

What's more, while the proposed site is just outside the Columbia River Gorge National Scenic Area, it is highly visible from many locations within the scenic area. The original legislation for the NSA called for extremely limited development within view from Interstate 84 and Highway 14. This project will be extremely visible from those locations. SDS has been running ads in the local paper showing how visible these towers will be from within the NSA. At some point we need to look to the congressional intent to protect the views of this area. I highly doubt the framers of the scenic area act ever envisioned allowing 400 foot towers (with bright red lights on each of them at night) where they are so visible.

The Columbia River Gorge is an area I consider to be sacred to me and my family. . This is the wrong project for the wrong area. Please say no to the Whistling Ridge Energy Project.

Sonja Neff

COMMENT LETTER 124

WR - DEIS
Public Comment #265

Michelle, Kayce (COM)

From: Mike and Joyce Eastwick [redacted]
Sent: Wednesday, July 14, 2010 4:08 PM
To: COM EFSEC
Subject: Whistling Ridge DEIS comment

Thank you for the opportunity to comment on the DEIS for Whistling Ridge. After reading though this document, I realized that there is a workable solution that could satisfy common ground that could satisfy many of the residents of Skamania County, and people Columbia Gorge National Scenic Area. The workable solution I recommend is to approve of the Whistling project with the exception of the A1-A7 turbine group.

1) Under "affected environment", "surface water", there is no mention of the unnamed stream east (and down slope) of the A1-A7 turbine group. This stream initiates as a spring and flows year round, and eventually empties into the Columbia River. In addition, it flows through World Stewardship Nature Preserve Land (soon to be purchased by Columbia Land Trust). Please add this consideration to your study. Under "groundwater", the same unnamed stream mentioned above has been overlooked since it does originate at groundwater. Eliminating the A1-A7 turbine would eliminate any effects on the following factors would eliminate the impact to these important water resources.

3) There was no discussion on the impact to the military flight route VR-1355. The A1-A7 turbines cut across the introduction of the route as the aircraft fly over the Hood River Bridge and make their turn onto this route. Also, helicopters transiting from Fort Lewis to the Yakima proving ground transit the Columbia Gorge, and this would eliminate any impact to their routing.

4) The noise would be tolerable as the turbines are now more than 1 mile away from the nearest home. Eliminating the A1-A7 turbines would bring the Whistling Ridge project in line compliance with current scientific studies indicate the need for larger setbacks to avoid these issues. It is interesting to note the shear amount of documentation in the DEIS on noise, causing me to believe that this can be a problem and really needs to be addressed.

5) The study did not use the noise levels defined by the manufacturer of the proposed towers and the generating station, which are larger and noisier than those discussed. Eliminating the A1-A7 turbines puts the noise levels within EFSEC limits even when using the actual towers and the generator facility that will be used in the Whistling Ridge project are used for noise calculations. It also would make the noise within EFSEC limits when computing the maximum anticipated noise levels, cumulative effects of multiple towers coupled with power generation/transfer and their impact to the surrounding community.

6) Eliminating the A1-A7 turbines keeps the Whistling Ridge project in compliance with the basic intent of the National Scenic Act: to "Preserve our nation's natural scenic resources". This allows EFSEC to support the preservation of a scenic area while also supporting wind energy.

7) More recent studies on bat and raptor deaths caused by wind turbines indicate a significantly higher number than expected. Klickitat County has recently begun a new study because many more deaths were occurring than promised by the boiler plate information in their EIS. Please update your study to consider recent results. Eliminating the A1-A7 turbines would significantly reduce the risk of bat and raptor deaths as the turbines closest to the flyway are eliminated

8) The land immediately south of the A1-A7 turbines project is designated winter range preserve. Eliminating the A1-A7 turbines eliminates a major impact to elk and deer movement in their designated winter range.

9) Eliminating the A1-A7 turbines will virtually eliminate impacts to property values since no turbines are close to residences.

10) Regarding "future developments", the "Middle Mountain Wind Project" should be updated to indicate that the Hood River County Commissioners have determined the project to be not feasible due to local discontent. Please also consider adding the decision regarding the Seven Mile project; impacts to the local community and the scenic area also could not be justified. Eliminating the A1-A7 turbines would make this project much more acceptable to the local population because the impact to the National Scenic area would be much less.

I request that you review these comments each as if you lived here, please remember, this project is in everyone's back yard, it is a National Scenic Area and one of the most traveled tourist destinations in the Northwest..

Thank you

Joyce Eastwick
[redacted]

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COMMENT LETTER 125

WR - DEIS
Public Comment #266

Michelle, Kayce (COM)

From: [redacted]
Sent: Thursday, July 15, 2010 3:40 PM
To: COM EFSEC
Subject: I support Whistling Ridge

Hello Energy Facility Site Evaluation Council,

I would like to voice my strong support for the Whistling Ridge Energy Project. This wind farm will give the Skamania County economy the boost it needs. We are too dependent on timber harvests and federal timber payments. Too many residents are stuck in low-income brackets while unemployment ranks far above the state average. Fortunately, Skamania has another natural resource to develop: wind. Bringing another industry here is exactly what our county needs. It will stimulate local spending, create jobs, and provide new tax revenues. How can that be a bad thing? Skamania County needs to diversify its resources and revenue, and Whistling Ridge can make that happen. I hope the Council approves the SDS application and that the project advances quickly.

Sincerely,
Doug Holliston
[redacted]

COMMENT LETTER 126

WR - DEIS
Public Comment #276

Michelle, Kayce (COM)

From: [redacted]
Sent: Thursday, July 15, 2010 5:31 PM
To: COM EFSEC
Subject: I support Whistling Ridge

Hello Energy Facility Site Evaluation Council,

I would like to voice my strong support for the Whistling Ridge Energy Project. This wind farm will give the Skamania County economy the boost it needs. We are too dependent on timber harvests and federal timber payments. Too many residents are stuck in low-income brackets while unemployment ranks far above the state average. Fortunately, Skamania has another natural resource to develop: wind. Bringing another industry here is exactly what our county needs. It will stimulate local spending, create jobs, and provide new tax revenues. How can that be a bad thing? Skamania County needs to diversify its resources and revenue, and Whistling Ridge can make that happen. I hope the Council approves the SDS application and that the project advances quickly.

Sincerely,
lauri fritsch
[redacted]

COMMENT LETTER 127

WR - DEIS
Public Comment #277

Michelle, Kayce (COM)

From: D. Deloff [redacted]
Sent: Thursday, July 15, 2010 5:35 PM
To: COM EFSEC
Subject: Whistling Ridge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis.

This proposal is likely to cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area.

I request that EFSEC and BPA extend the comment period by 45 days, in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices.

D. Deloff
[redacted]

COMMENT LETTER 128

WR - DEIS
Public Comment #286

Michelle, Kayce (COM)

From: Roger Cole [redacted]
Sent: Thursday, July 15, 2010 7:53 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line.

I am all in favor of wind projects such as this.

Roger Cole
[redacted]

COMMENT LETTER 129

WR - DEIS
Public Comment #294

Michelle, Kayce (COM)

From: Kathleen Fitzpatrick [redacted]
Sent: Thursday, July 15, 2010 9:49 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am concerned about the impacts of major industrial construction on the ridgeline boundary of the Columbia River Gorge National Scenic Area near White Salmon.

I live in the City of Mosier, where our businesses depend on the tourism created by the natural scenic beauty of the Columbia Gorge. In a recent survey (Mosier Community Survey, 2008) 99% of the Mosier Valley residents who responded rated "scenery and natural beauty" as Very Important to them.

For a wider view, read the final report of the Columbia Gorge Future Forum, in which many Gorge residents responded negatively to the industrialization of the Gorge by the wind turbine industry and in which one of the most commonly shared Gorge values was our scenic beauty.

And who hasn't read the National Geographic review of the Gorge as the 6th most highly rated destination in the world because of the"... incredible job of protecting the views..."

It greatly concerns me that we can so easily despoil forever what is so rare and so highly valued by the rest of the world. And for what? The sacrifice of long term vision for immediate profit? Profit for a very few at the expense of the other Gorge communities and counties whose economic development depends on the protection of the scenic Columbia Gorge?

I hope that greed does not lead us into making decisions that will negatively impact most of our current population and that our future generations will forever regret.

Kathy Fitzpatrick
[redacted]

[redacted]

COMMENT LETTER 130

WR - DEIS
Public Comment #298

Michelle, Kayce (COM)

From: Joan Carter [redacted]
Sent: Friday, July 16, 2010 12:03 AM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

The EFSEC and BPA must consider other alternatives to the siting of the Whistling Ridge wind turbines to avoid marring the viewscape of the Gorge NSA! I've been told also that wildlife will be greatly impatcted in this location.

The public must also be kept informed about the environmental impacts of the project, so please extend the comment period by 45 days.

Joan Carter
[redacted]

COMMENT LETTER 131

WR - DEIS
Public Comment #300

Michelle, Kayce (COM)

From: Ken Maddox [redacted]
Sent: Friday, July 16, 2010 5:53 AM
To: COM EFSEC
Subject: Whistling Ridge Wind Project

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

The plan is in direct opposition to the Scenic Area, as it would impose unalterable impacts on major viewpoints, and any proposal or alternative that does not ban it outright is missing the main point. I, as ought to be anyone with sense, am opposed to the project and to any attempt to analyze it into creation, including the current DEIS.

Ken Maddox
[redacted]

Michelle, Kayce (COM)

From: Ken Maddox [redacted]
Sent: Friday, July 16, 2010 5:53 AM
To: COM EFSEC
Subject: Whistling Ridge Wind Project

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

The plan is in direct opposition to the Scenic Area, as it would impose unalterable impacts on major viewpoints, and any proposal or alternative that does not ban it outright is missing the main point. I, as ought to be anyone with sense, am opposed to the project and to any attempt to analyze it into creation, including the current DEIS.

Ken Maddox
[redacted]

COMMENT LETTER 132

WR - DEIS
Public Comment #301

Michelle, Kayce (COM)

From: [redacted]
Sent: Friday, July 16, 2010 6:03 AM
To: COM EFSEC
Subject: I support Whistling Ridge

Hello Energy Facility Site Evaluation Council,

I would like to voice my strong support for the Whistling Ridge Energy Project. Washington State utilities must reach the goals set by Initiative 937. Wind is the most feasible and most cost-effective option for bringing 15% new renewable energy on the grid by 2020, which means we need to build more wind farms. Skamania County has the wind, SDS Lumber has the land: it is a match made in heaven. Many studies have shown that the environmental impact of the Whistling Ridge Energy Project would be minimal. For the last century, the site has been used in commercial forest operations. The land has already been cleared, roads built, transmission lines already installed, and wildlife habitats already fragmented. The impacts on a few other species that might be affected are rated low-risk. The environmental benefits are numerous. Wind is clean, renewable, and does not consume water or produce waste. Whistling Ridge will generate 75 megawatts of electricity; enough to power 20,000 homes a year, without contributing to global climate change. The choice is clear: support Whistling Ridge and Skamania County by approving this project.

Sincerely,
Benjames Derrick
[redacted]

COMMENT LETTER 133

WR - DEIS
Public Comment #308

Michelle, Kayce (COM)

From: Samuel Seskin [redacted]
Sent: Friday, July 16, 2010 9:56 AM
To: COM EFSEC
Subject: Whistling Ridge Benefits outweigh costs

I am concerned about the opinions of others, but I don't share the Not in my Back Yard, elitist perspective of my friends who are opposing this project. As we build bigger and bigger houses (and second houses) in the Gorge, we should take on our fair share of the burden of powering them with electricity that is sustainable.

Gorge Friends are in the same class as those in Massachusetts who opposed a wind farm off Martha's Vineyard for twenty years.

I hope that all towers can be sited in a way that truly minimizes the visual impact on Gorge resdients and visitors, but I support the project as a whole.

Samuel Seskin
[redacted]

COMMENT LETTER 134

WR - DEIS
Public Comment #310

Michelle, Kayce (COM)

From: Aaron Dukes [redacted]
Sent: Friday, July 16, 2010 11:00 AM
To: COM EFSEC
Subject: Whistling Ridge Energy Project

Is there perhaps a site better suited for this development than in the heart of the Columbia River Gorge National Scenic Area?

I think it's vital that we protect the scenic beauty of this particular place. I already wince at every clear cut visible in the NSA. The last thing we need is to add industrial development to an area that has already been compromised by commercial interests.

Aaron Dukes
[redacted]

COMMENT LETTER 135

WR - DEIS
Public Comment #312

Michelle, Kayce (COM)

From: [redacted]
Sent: Friday, July 16, 2010 11:43 AM
To: COM EFSEC
Subject: FW: Whistling Ridge Wind Proposal Comment

------- Original Message -------
From : [redacted]
Sent : 7/15/2010 11:24:04 AM
To : efec@commrerce.wa.gov
Cc :
Subject : FW: Whistling Ridge Energy Project Draft EIS

While the Whistling Ridge Wind Project proponents deserve credit for responding thoughtfully to some of the previous objections to their earlier proposals, the revised proposal remains of great concern. If allowed the proposed wind mills will still seriously impact the beauty of the Gorge Scenic Area. As presently proposed viewers from numerous locations including parts of the cities of of White Salmon, Underwood, and Hood River, as well as the Columbia River itself will have their views of the Gorge defaced by 425 foot towers of steel, rotating blades and flashing strobe lights.

There are few areas in the world with as much natural beauty as we now have in this part of the Gorge. We sould not sell it away. Granted our Nation needs alternative souces of energy and Skamania County needs new sources of revenue. But there are many less scenic areas of Washington, Oregon and the entire country which could also contain our windmills. Some things should not be traded for money.

Related Concerns:

1. A first Gorge Windmill project will set a precedent. Other proposals and very likely other windmill farms will follow. New companies (for example a conglormerate such as General Electric) will be much less concerned about the welfare of this area than our neighbors at SDS.

2. Wind farm derived tax revenues will not be the only economic consequence of a local wind farm. Probable negative consequencies include decreased property values, reduced appeal to future tourists and prospective new residents because of diminished attractiveness of the area and likely increased infrastructure costs associated with building and maintaining a windfarm (including road maintainance and additional fire protection).

3. Huge steel towers with massive concrete bases would be with us a very long time. The costs of removing an obsolete windmill would be substantial. But how long would a wind tower be useful?

When I consider the dramatic and initially unforseeable changes in energy demand and modes of production over the past 150 yeara (Particularly the last last 50 or so) I am astounded. Who can predict whether 100, 50 or even 30years from now massive 425 ft steel wndmills will make any contribution to our energy needs?

WR - DEIS
Public Comment #313

Michelle, Kayce (COM)

From: Christine Yun [redacted]
Sent: Friday, July 16, 2010 12:27 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

Please keep the Gorge looking as it did in the days of Lewis & Clark. We have so few areas in the U.S. where a historical landscape is unmarred.

Christine Yun
[redacted]

COMMENT LETTER 137

WR - DEIS
Public Comment #315

RECEIVED
JUL 13 2010
ENERGY FACILITY SITE
EVALUATION COUNCIL

CITY OF BINGEN

July 7, 2010

Washington State Energy Facility Site
Evaluation Council
905 Plum Street SE
Olympia, WA 98504-3172

Bonneville Power Administration
Public Affairs Office – DKE-7
PO Box 14428
Portland OR 97293-4428

Subject: Whistling Ridge Energy Project EFSEC Application 2009-001 and Draft EIS

The City of Bingen, located in Klickitat County adjacent to the proposed Whistling Ridge Energy Project, is supportive of alternative renewable energy including wind energy facilities. Wind energy projects are one way the State of Washington and the United States can help reduce the reliance on traditional, non-renewable energy sources.

The City of Bingen notes that the Whistling Ridge project is located outside of the Columbia River Gorge National Scenic Area and is therefore not subject to the National Scenic Area Act. The City of Bingen is also in an area that is not subject to the National Scenic Area Act. We would not be able to realize our community and economic development objectives if proximity to the Scenic Area begins to restrain that development. The city believes that restrictions on properties located outside of the Scenic Area or that are exempt from the Scenic Area Act are inconsistent with the letter and intent of the National Scenic Area Act.

Thank you for considering our comments. If you have any questions, please do not hesitate to contact me.

Sincerely,

Betty J. Barnes
Mayor

112 N Ash Street PO Box 607 Bingen, Washington 98605
Telephone: 509.493.2122 Fax: 509.493.1391 E-mail: bingen@gorge.net

RECEIVED
JUL 16 2010
ENERGY FACILITY SITE EVALUATION COUNCIL

COMMITTEE ON SCIENCE AND TECHNOLOGY
Chairman
Subcommittee on Energy and Environment

COMMITTEE ON TRANSPORTATION
AND INFRASTRUCTURE

COMMENT LETTER 138

BRIAN BAIRD
CONGRESS OF THE UNITED STATES
3RD DISTRICT, WASHINGTON

Washington Office:
2350 Rayburn HOB
Washington, D.C. 20515
(202) 225-3536

Vancouver Office:
General O.O. Howard House
750 Anderson Street, Suite B
Vancouver, WA 98661
(360) 695-6292

Olympia Office:
120 Union Avenue SE, Suite 105
Olympia, WA 98501
(360) 352-9768

WEBSITE: http://www.house.gov/baird

June 16, 2010

WR - DEIS
Public Comment #316

Allen Fiksdal
EFSEC Manager
Energy Site Evaluation Council
PO Box 43172
Olympia, WA 98504

Dear Mr. Fiksdal:

I write to offer my strong support to the proposed Whistling Ridge Energy Project in Skamania County. This is a viable project on privately held commercial timberland outside of the National Scenic Area. It will benefit the residents of Skamania County through increased property tax revenue. It will also benefit the region in creating renewable energy that is clean and self sustaining. This is an excellent example of how we can balance environmental protection and economic development.

It has come to my attention that there may be some opposition to the project because several of the turbines may be visible from within the National Scenic Area. I find the argument disingenuous and political in nature. I don't consider a few turbines to be an eyesore, rather they are a powerful symbol of our changing economy in the gorge and our national commitment to renewable energy.

I find the complaints hollow because those who complain of having to see a few turbines from inside the NSA have not complained of similar visual impairments from nearby communities. Stand inside the NSA and you can see signs of commerce, industry and development from nearby communities that are outside the boundaries of the NSA. It is as Congress intended: a balance of environmental protection and economic vitality.

As a member of Congress, I have been a strong supporter of the NSA. The legislation specifically states in the Saving Clause of the Act, that no protective measures or buffer zones should be established around the NSA. This project is outside the NSA. It is not subject to the rules of the NSA. It is an environmentally sound project that should be embraced and encouraged. I support it. It is the right project at the right time in the right place.

Sincerely,

Brian N. Baird

Brian N. Baird
Member of Congress

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WR - DEIS
Public Comment #355

COMMITTEE ON SCIENCE AND TECHNOLOGY
Chairman
Subcommittee on Energy and Environment

COMMITTEE ON TRANSPORTATION
AND INFRASTRUCTURE

BRIAN BAIRD
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Brian N. Baird
Member of Congress

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COMMITTEE ON SCIENCE AND TECHNOLOGY
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Subcommittee on Energy and Environment

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June 16, 2010

Stephen Wright
Administrator
Bonneville Power Administration
905 NE 11th Avenue #A7
Portland, OR 92708

Dear Mr. Wright;

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Sincerely,

Brian N. Baird

Brian N. Baird
Member of Congress

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Michelle, Kayce (COM)

From: Posner, Stephen (COM)
Sent: Tuesday, July 13, 2010 1:21 PM
To: Michelle, Kayce (COM)
Subject: FW: Whistling Ridge
Attachments: EFSEC001.PDF; BPA001.PDF

Kayce,

Please process as comment letters for WR DEIS. Thanks.

From: Parker (Love), Kelly [mailto:[redacted]
Sent: Tuesday, July 13, 2010 12:38 PM
To: ammontano@bpa.gov; Posner, Stephen (COM)
Cc: Parker (Love), Kelly
Subject: FW: Whistling Ridge

Here are electronic versions of the letters Congressman Baird has sent to EFSEC and BPA. We wish these letters of support to be included in public comment.

Thank you.

Kelly

Kelly Love Parker

District Director

Congressman Brian Baird

750 Anderson #B Vancouver, WA 98661

(360) 695-6292

From: Parker (Love), Kelly
Sent: Tuesday, July 13, 2010 12:31 PM
To: 'Phillips, Page (Murray)'; Pincheira, Kimberly (Cantwell); Schuyler (GOV) Hoss
Cc: Parker (Love), Kelly
Subject: Whistling Ridge

FYI:

Congressman Baird is submitting letters of support for Whistling Ridge Energy Project currently under review by EFSEC and BPA. The comment period ends July 19th.

Best,

Kelly

From: Parker (Love), Kelly [redacted]
Sent: Tuesday, July 13, 2010 12:38 PM
To: Montano,Andrew M - KEC-4; stephen.posner@commerce.wa.gov
Cc: Parker (Love), Kelly
Subject: FW: Whistling Ridge

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750 Anderson #B Vancouver, WA 98661

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<<EFSEC001.PDF>>

<<BPA001.PDF>>

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District Director

Congressman Brian Baird

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COMMITTEE ON SCIENCE AND TECHNOLOGY
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BRIAN BAIRD

CONGRESS OF THE UNITED STATES
3RD DISTRICT, WASHINGTON

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Bonneville Power Administration
905 NE 11th Avenue #A7
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Sincerely,

Brian N. Baird

Brian N. Baird
Member of Congress

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COMMITTEE ON SCIENCE AND TECHNOLOGY
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June 16, 2010

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EFSEC Manager
Energy Site Evaluation Council
PO Box 43172
Olympia, WA 98504

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Brian N. Baird

Brian N. Baird
Member of Congress

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Department of Energy

Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208-3621

EXECUTIVE OFFICE

JUL 2 3 2010

In reply refer to: DKR-7

The Honorable Brian Baird
United States House of Representatives
2350 Rayburn House Office Building
Washington, D.C. 20515

Dear Representative Baird:

Thank you for your letter supporting the proposed Whistling Ridge wind project. The Bonneville Power Administration (BPA) is considering the interconnection request from the project's sponsor and conducting an environmental review under the National Environmental Policy Act (NEPA). Washington State's Energy Facility Site Evaluation Council (EFSEC) is responsible for environmental review of the proposed facility under the Washington State Environmental Policy Act (SEPA).

BPA and EFSEC are coordinating their respective review processes and recently completed a joint draft environmental impact statement (DEIS). The record for public comment on the DEIS is open through August 27. In June, the two agencies held public open houses on the draft EIS in both Underwood, and Stevenson, Washington.

I appreciate knowing of your interest in and support for the proposed project. I will keep you and your staff informed of BPA's progress as it continues to work with EFSEC for review of the interconnection request. If you have additional questions, please contact me or Liz Klumpp, BPA's Constituent Account Executive for Washington, at (360) 943-0157.

Sincerely,

Stephen J. Wright
Administrator and Chief Executive Officer

WR - DEIS
Public Comment #317

RECEIVED
JUL 16 2010
ENERGY FACILITY SITE
EVALUATION COUNCIL

Energy Facility Site Evaluation Council
905 Plum Street SE
P.O. Box 43172
Olympia, WA 98504-3172

July 15, 2010

Dear Council Members/BPA Representatives:

In our testimony of May 6, 2009 we specifically requested that three issues be directly addressed within the scope of the proposed Whistling Ridge Energy Project EIS. **The current draft EIS does not adequately address the three issues.**

First,
The draft EIS utterly ignores the strongly recommended and extremely useful "The 'How To' Guide To Siting Wind Turbines To Prevent Health Risks From Sound" (authors: George W. Kamperman and Richard R. James, October 28 2008... *we have attached this once again for your convenience)* a version of which was prepared and provided by the authors specifically for EFSEC's consideration. It provides an ecological and scientifically sound approach, which will minimize the likelihood of detrimental impact when industrial wind turbines are to be sited near people's homes.

The draft EIS offers no assurance that Whistling Ridge wind turbine siting will preserve a resident's right to enjoy the current peace and tranquility of his/her homesite. More importantly, the potential negative impacts to a resident's health and well-being are **not** adequately mitigated.

Mr. Richard James, an acoustical engineer, provided **credible testimony** (source provided you in May 2009 material) **that wind turbines generate a type of noise that is not adequately measured by the dBA scale used in the Washington state noise standards.** The dBA scale is designed to detect noises audible to humans. Wind turbines generate low-frequency noise (20Hz or lower) that might cause the body to resonate even if it is not audible. **Such effects are measurable on the C-weighted scale (dBC).**

Your draft EIS dismisses the C-rated scale as insignificant and we quote: "The turbine sound power level manufacturing ratings show C-weighted levels are within 2dB of A-weighted levels. Therefore, low-frequency noise is not anticipated to be an issue for this project"(page 3-130 draft EIS). If this is factual (which cannot be verified given that the data below 31.5 Hz was not provided in the draft EIS) it would only measure 2 decibels difference at the source (wind turbine). **The problem with this rationale has been scientifically proven.** The difference at the affected homesites would be substantial, as the lower-frequency vibrations (dBC) travel greater distances than the higher dBA frequencies, attenuating at approximately half

the rate of the higher frequencies. **Thus, when you reach the homesites, the dBC values will be roughly 20 dB higher than the dBA values** *(see page 7, Kamperman and James)*. Further, the lower-frequency noise easily penetrates home structure, while the higher frequencies are somewhat attenuated by home structure, thus inside the home the difference between the dBA and dBC scales will be even greater *(see page 11-12, Kamperman and James)*. **This is why it is necessary to use the C-weighted scale in addition to the A-weighted scale.**

Even your cited expert G. Leventhal questions current measurement techniques in *Low Frequency Noise. What we know, what we do not know and what we would like to know, Journal of Low Frequency Noise, Vibration and Active Control, Vol. 28, Number 2, 2009:*

> "Does the way in which we measure low frequency noise hide some of its disturbing characteristics?" *(p. 98)*
>
> "Unfortunately, conventional methods of dealing with environmental noise stressors are A-weighted, which means that the presence of disturbing low frequency noise may not be detected...chronic psychophysiological damage may result from long-term exposure to an audible low-level low frequency noise, which is left uncontrolled, despite complaints." *(p. 95)*

Earlier in the draft EIS, before dismissing the need to use the C-rated scale you state, "C-weighting is often used to assess potential annoyance due to low-frequency noise that may excite vibration in structures" (p. 3-115). This is exactly what happens!

Quoting yet another of your cited experts G.P. van den Berg from *Do wind turbines produce significant low frequency sound levels?, presentation at 11th International Meeting on Low Frequency Noise and Vibration and its Control, Maastricht, The Netherlands, 30 August to 1 September 2004:*

> "Although infrasound levels from large turbines at frequencies below 20 Hz are too low to be audible, they may cause structural elements of buildings to vibrate... Perceptible vibrations of windows may occur at frequencies from 1 to 10 Hz... sound pressure levels above 60 dB at frequencies below 10 Hz occur close to a turbine as well as at 750 m distance and further." *(p. 7)*

This has been validated by the research of S.S. Jung, W. Cheung, C. Cheong and S. Shin, *Experimental Identification of Acoustic Emission Characteristics of Large Wind Turbines with Emphasis on Infrasound and Low-Frequency Noise, Journal of the Korean Physical Society, Vol. 53, No. 4, October 2008.*

> "...we found that the low-frequency noise of the 1.5 MW... wind turbines in the frequency range over 30 Hz would very likely lead to psychological complaints from ordinary adults and that the infrasound in the frequency range from 5 Hz to 8 Hz would very likely lead to complaints about rattling house fittings, such as doors and windows."

We strongly feel the .38-mile set back from the nearest residence is woefully insufficient. This is especially true in this area of canyons, bowls, and mountains, as

the terrain will contain, reflect and transmit the sound from the wind turbines greater distances than in typically used flatter terrain. The simplistic sound modeling and the limited collected data used in this draft EIS result in an **inaccurate** depiction of likely impact. (Decibel levels exceeding predictions has been documented by M.A. Nissenbaum at Mars Hill, 2010 and G.B. van den Berg 2006 in his work at the Rhede Wind Farm).

Again, we request that potential noise (dBA) and low-frequency (dBC) impacts be thoroughly investigated through valid baseline measurements and cutting edge computer simulations that will accurately depict for this mountainous area the sound emissions produced in worst case conditions, such as recommended by Kamperman and James, 2008. This would include ambient sound monitoring on all residential properties within and up to 2 miles of the project property boundary.

Prospathopoulos, J. M. and Voutsinas, S. G.'s work *(Application of a ray theory model to the prediction of noise emissions from isolated wind turbines and wind parks... in Wind Energy, Volume 10 Issue 2, Pages 103 – 119, published online: 6 Dec 2006, John Wiley & Sons, Ltd.)* **proves** that the simple computer model employed in this draft EIS prediction is inadequate. **"In cases of complex terrain... simple projection models are no longer valid."**

The need for using more complex computational models than the ones employed for this draft EIS is well-documented by the U.S. Department of Energy Workshop Report: Research Needs for Wind Resource Characterization, Technical Report NREL/TP-500-43521, June 2008 *(Jointly sponsored by DOE Office of Science, Office of Biological and Environmental Research and DOE Office of Energy Efficiency and Renewable Energy, Wind & Hydropower Technologies Program).*

> "Models routinely under-predict power performance likely due to; a misrepresentation of the vertical wind speed and turbulence profile, a lack of understanding of the impact of complex terrain on flow, fundamental errors in modeling of ray effects/wind turbine wakes and/or a combination of these effects" *(page 38).*
>
> "The utility in models... that are based upon linear formation... falls off rapidly when applied in relatively steep terrain or if the weather fluctuates much. Several non-linear formations have been developed... that allow for turbulence prediction in steeper terrain" *(page 47).*

In studying your draft EIS, we determined it does not demonstrate that any additional sound measurements were even conducted. It appears the limited data originally gathered by the SDS consultant was the only information utilized. **An Independent Qualified Acoustical Consultant (unbiased third party**

with no financial or other connection to SDS or related companies) should have performed (not just reviewed what was provided) all sound monitoring, simulations and projections.

It appears that no actual sound monitoring was conducted at any of the three closest residences. It is not depicted in the draft EIS and we must necessarily assume it was not done. "Measurement Location 2" sound monitoring appears to have been measured almost 2 miles distant from the affected residence. "Measurement Location 1" sound monitoring appears to have been measured approximately a ½ mile distant beyond both the planned and the current residence closest to the wind turbines. No dBC scale measurements were conducted at all.

Applying Kamperman and James methodology to even the current SDS application noise data for receiver ID3 (the closest residential property), shows that the noise level would increase from **26 dBA** (using Kamperman and James recommended L_{90}, rather than the L_{eq} depicted in draft EIS *Table 3.7–4*) **to 42-plus dBA** during nighttime operation *(draft EIS Table 3.7–9)* ...**an increase in excess of 16 dBA. This considerably exceeds (by more than 3 times) the 5 dBA recommended by Kamperman and James, as well as the Government of South Australia EPA Protection Authority Environmental Noise Guidelines** *(see attached)*, **in preventing health risks!** Further, it exceeds the 10 decibel EPA guidelines and is thereby considered "serious and warranting close attention". A 10 dB increase almost always causes adverse community response *(page 14 of the "How To" guide).*

This is a more accurate depiction of what people will be subjected to at 2 a.m. (when attempting to sleep) than what is presented in this draft EIS.

The need for the draft EIS to more accurately represent nighttime ambient background noise level is further supported by the U.S. Department of Transportation "Transit Noise and Vibration Impact Assessment", May 2006 (Chapter 5: General Noise Assessment, pages 5-14 & 15)...

> "In areas away from major roadways, noise from local streets or in neighborhoods is estimated using a relationship determined during a research program by the U.S. EPA.(2) EPA determined that ambient noise can be related to population density in locations away from transportation corridors, such as airports, major roads and railroad tracks, according to the following relation: $Ldn = 22 + 10\log(p)$ (indBA) where p = population density in people per square mile."

In the USDOT document **Table 5-7, Estimating Existing Noise Exposure for General Assessment,** it shows that the estimated *Leq* for nighttime is **25** decibels for a population density of 1–100 per square mile. The closest homesites certainly fall within this category. Given that the draft EIS did not include measurements at the closest residences, **a figure of 25 dB as estimated by EPA must be used**, rather than the convoluted and inaccurate estimate of 34-35 dB depicted in the draft EIS *(Table 3.7-9, page 3-128)*.

The draft EIS computer prediction model (Cadna/A) depicts on Table 3-7.7 that wind turbines were treated as "point" source with no information provided to suggest that the computer simulation treats each array as a "line" source – even though they are arrayed in a line. "Point" sources attenuate (drop) at a rate of 6 dB per doubling of distance. "Line" sources attenuate (drop) at a rate of 3 dB per doubling of distance. **There is ample scientifically proven evidence both from:**

NASA studies *(Prediction of the Far Field Noise from Wind Energy Farms, Shepherd, K. P. and Hubbard, H.H 1986, NASA-CR-177956)*

> "At intermediate distances the array acts like a line source for which the theoretical decay rate is 3 dB per doubling of distance or 10 dB per decade. Only at the extreme distances, greater than one row length or 900 m, does the decay rate approach the single source value of 6 dB per doubling of distance or 20 dB per decade"; *(page 4)*

and van den Berg's 2006 thesis *(The sound of high winds: the effect of atmospheric stability on wind turbine sound and microphone noise, Rijksuniversiteit Groningen)*, cited in your draft EIS, that demonstrates wind turbines arrayed in a line, as they are projected to be at the Whistling Ridge site, may operate as a "line" source.

This phenomenon is a well-documented fact by the US Department of Transportation *(May 2006 – Transit Noise and Vibration Impact Assessment)* that individual cars traveling on a highway can be treated as a "point" source, while multiple cars traveling in a line have to be treated as a "line" source. The same is true of railcar transportation. (That is why sound barriers are erected on heavily traveled highways – to protect nearby residents.)

We want to state this clearly. The draft EIS leads people to believe that the sound from the line of wind turbines will drop at a rate of 6 dB. *"As a general rule, at distances greater than 50 feet from a noise generator such as a wind turbine, SPL drops at a rate of 6dB with each doubling of distance."(Page 3-114).* This, in our opinion, **is inaccurate for wind turbines arrayed in a line on a ridge in mountainous, bowled and irregular terrain.** We feel the negative sound impact to be experienced by this community's residents **is grossly underestimated.**

The only way to mitigate this impact is to set the wind turbines back further from the closest non-participating properties.

The "How To" Guide referenced above clearly articulates how to go about setting such standards. Simple reliance on the Washington State Environmental Noise Levels, Chapter 173-60 WAC (enacted 35 years ago, before large industrial wind turbines were even developed), is not enough. The acoustical experts' "How To" Guide approach is to locate a wind turbine so as **to not increase preconstruction/operation background sound levels by more than 5 dBA along the property lines of the receiving non-participating property. And, such that it would not exceed a total of 35 dBA within 100 feet of any occupied structure.** (Page 15) Additionally, we refer you to the low-frequency sound limits also depicted on page 15. *NOTE: In previously provided expert testimony, Mr. James recommended* ***a minimum distance of 1.2 miles*** *between turbines and residences.*

Again, we reiterate that if industrial wind turbines are as "quiet" as represented, setting enhanced noise standards or requiring the meeting of standards used just across the river in Oregon should provide no difficulty for developers to meet. You now have an opportunity to make a strong statement illustrating BPA's and EFSEC's commitment to safeguarding the health of Washington's residents.

We formerly provided as part of our May 6, 2009 testimony, documentation of potential health risks from sound:

> *"Deputation (by Dr. Robert McMurtry M.D., F.R.C.S (C), F.A.C.S)* to the Standing Committee on General Government Regarding Bill C-150 April 22, 2009 www.wind-watch.org/documents/wp-content/uploads/mcmurtry-deputation-to-standing-committee.pdf); a news release (March 4, 2009 www.windaction.org/documents/20306) from the Medical Staff of Northern Maine Medical Center regarding "Health Concerns and the Need for Careful Siting of Wind Turbines"; *"Wind Turbine Syndrome A Report on a Natural Experiment" published by K-Selected Books;* and work of New York physician Nina Pierpont M.D., Ph.D. at www.windturbinesyndrome.com..

In late February 2009 the Office of Energy Security (OES), *[the equivalent to Washington's EFSEC]*, requested that the Minnesota Department of Health (MDH) **evaluate the possible health effects associated with low frequency vibrations and sound arising from large wind energy conversion systems to assist them in guiding decision-making for future wind energy projects.** MDH produced a **26–page white paper "Public Health Impacts of Wind Turbines"** on May 22, 2009 *(attached).*

The following quotes are a summary (of the 26-page white paper) with excerpts of salient points especially applicable to the draft EIS. **We feel** you must give serious consideration and take appropriate action in adequately addressing the environmental and health issues of the proposed Whistling Ridge Energy Project. *NOTE: Underlining that follows is our emphasis.*

Health Issues

"Noise originates from mechanical equipment inside the nacelles of the turbines (gears, generators, etc.) and from interaction of turbine blades with wind. ... The most problematic wind turbine noise is a broadband "whooshing" sound produced by interaction of turbine blades with the wind." *(Page 6)*

"The NRC (National Research Council of the National Academies) also notes that effects of low frequency (infrasound) vibration (less than 20 Hz) ... have been asserted to disturb some people." *(Page 6)*

Sound

"... low frequencies are not effectively attenuated by walls and windows of most homes or vehicles. (For example, one can typically hear the bass, low frequency music from a neighboring car at a stoplight, but not the higher frequencies.)" *(Page 9)*

"Rhythmic, low frequency pulsing of higher frequency noise (like the sound of an amplified heart beat) is one type of sound that can be caused by wind turbine blades under some conditions." *(Page 9)*

"The World Health Organization (WHO, 1999) suggests that A-weighting noise that has a large low frequency component is not reliable assessment of loudness." *(Page 11)*

Noise From Wind Turbines

"Aerodynamic noise from a wind turbine may be underestimated during planning. One source of error is that most meteorological wind speed measurements noted in wind farm literature are taken at 10 meters above the ground. Wind speed above this elevation, in the area of the wind turbine rotor, is then calculated using established modeling relationships. In one study... it was determined that the wind speeds at the hub at night were up to 2.6 times higher than modeled. Subsequently, it was found that noise levels were 15 dB higher than anticipated." *(Pages 11-12)*

"Rhythmic modulation of noise, especially low frequency noise, has been found to be more annoying than steady noise." *(Page 12)*

"Horizontal layers with different wind speeds or directions can form in the atmosphere. ... called shear. If the winds at the top and bottom of the blade rotation are different, blade noise will vary between the top and bottom of blade rotation, causing modulation of aerodynamic noise. *(Page 12)*

"... additional noise, or thumping, may occur as each blade passes through the transition between different wind speed (or wind direction) areas." *(Page 13)*

"... in the nighttime the atmosphere can stabilize (vertically), and layers form. .... Consequently, blade noise would be greater at night." *(Page 14)*

"A number of reports ... suggest that aerodynamic modulation is typically underestimated ... that detailed modeling of wind, terrain, land use and structures may be used to predict whether modulation of aerodynamic noise will be a problem at a proposed wind turbine site." *(Page 14)*

"... noise from a wind turbine farm may be greater than noise from the nearest turbine due to synchrony between noise from more than one turbine..." *(Page 14)*

Impacts of Wind Turbine Noise

"Some people are more sensitive to low frequency noise. The difference, in dB, between soft (acceptable) and loud (annoying) noise is much less at low frequency..." *(Page 16)*

"Two studies in Sweden... showed... when noise measurements were greater than 40 dB(A), about 50% of the people surveyed (22 of 45 people) reported annoyance. When noise measurements were between 35 and 40 dB(A) about 24% reported annoyance (67 of 276 people). Noise annoyance was more likely in areas that were rated as quiet and in areas where turbines were visible. In one of the studies, 64% respondents who reported noise annoyance also reported sleep disturbance; 15% of respondents reported sleep disturbance without annoyance." *(Page 17)*

"... reports have catalogued complaints of annoyance and some more severe health impacts ... The most common complaint is decreased quality of life, followed by sleep loss and headache. Complaints seem to be either from individuals with homes quite close to turbines, or individuals who live in areas subject to aerodynamic modulation and, possibly, enhanced sound propagation which can occur in hilly or mountainous terrain." *(Page 18)*

Noise Assessment and Regulation

"... lower noise levels (dB(A)) from wind turbines engenders annoyance similar to much higher levels of noise exposure from aircraft, road traffic and railroads." *(Page 20)*

"The World Health Organization (WHO) recommends that if dB(C) is greater than 10 dB more than dB(A), the low frequency components of the noise may be important and should be evaluated separately. In addition, WHO says "[i]t should be noted that a large proportion of low-frequency components in noise may increase considerably the adverse effects on health." *(Page 20)*

"... sound tends to propagate as if by spherical dispersion. This creates amplitude decay at a rate of about -6 dB per doubling of distance. However, low frequency noise from a wind turbine has been shown to follow more of a cylindrical decay at long distances, about -3 dB per doubling of distance in the downwind direction..." *(Page 23)*

"As one moves away from the noise source, loudness at higher frequencies decreases more rapidly (and extinguishes faster) than at lower frequencies. Measurement of A-weighted decibels... obscures this finding." *(Page 23)*

Conclusions

"Wind turbines generate a broad spectrum of low-intensity noise. At typical setback distances higher frequencies are attenuated. In addition, walls and windows of homes attenuate high frequencies, but their effect on low frequencies is limited. Low frequency noise is primarily a problem that may affect some people in their homes, especially at night." *(Page 25)*

"The most common complaint in various studies of wind turbine effects on people is annoyance or an impact on quality of life. Sleeplessness and headache are the most common health complaints and are highly correlated (but not perfectly correlated) with annoyance complaints. Complaints are more likely when turbines are visible or when shadow flicker occurs. Most available evidence suggests that reported health effects are related to audible low frequency noise. Complaints appear to rise with increasing outside noise levels above 35 dB(A)." *(Page 25)*

"The Minnesota nighttime standard of 50 dB(A) not to be exceeded more than 50% of the time in a given hour, appears to underweight penetration of low frequency noise into dwellings." *(Page 25)*

NOTE: Washington State noise standards, which rely on dB(A), do not adequately take into account the low frequency noise generated by wind turbines.

"For some projects, wind velocity for a wind turbine project is measured at 10 m and then modeled to the height of the rotor. These models may under-predict wind speed that will be encountered when the turbine is erected. Higher wind speed will result in noise exceeding model predictions." *(Page 25)*

"... if a turbine is subject to aerodynamic modulation because of shear caused by terrain (mountains, trees, buildings) or different wind conditions through the rotor plane, turbine noise may be heard at greater distances." *(Page 25)*

NOTE: the mountainous terrain and bowl topography of the Whistling Ridge Energy Project area will likely amplify the low frequency noise, more acutely impacting nearby residents than is suggested by the project's dB(A) modeling projections.

OUR THOUGHTS/COMMENTS

We feel this white paper is particularly relevant as it was produced by two Ph.D. Toxicologists for a public health state agency as requested by that state's agency equivalent to Washington's EFSEC.

It depicts how low frequency noise generated by wind turbine farms may indeed, be more pronounced at night, exacerbating sleep problems and related health issues.

It points out that the current methodology of most meteorological wind speed measurements and modeled projections can significantly underestimate the actual noise levels experienced.

In our opinion, this paper and its findings, reinforces the need for quality independent sound measurement and modeling, as well as the wisdom of using the Kamperman and James "How To" Guide to Siting Wind Turbines to Prevent Health Risks from Sound.

Our **second** area of concern relates to protecting the incredible scenic beauty of the Columbia River Gorge. This area is a local, national and even global treasure, recently rated in National Geographic as tied for number 6 in the world for it's natural and sustainable beauty. We see no evidence that the proposed mere "painting of the wind turbines a gray color" will adequately mitigate the profoundly detrimental effect on the truly unique and exceptional scenic and recreational resources wisely preserved and protected for the enjoyment of all through the Columbia Gorge National Scenic Area Act. "436" foot-tall wind turbines lining the scenic area would surely denigrate the scenic experience and we feel certain, was not remotely foreseen when determining the scenic area boundaries and thus, would undermine the intent of the Act.

The draft EIS constructed visual representations of the turbines depicted against backgrounds of haze and clouds obscures the significant adverse impact that will be experienced by viewers. This draft EIS and its simulated pictorial representations shamefully understates the actual impact.

We feel it is imperative that the final EIS include alternatives such as adjusted placement or outright removal of the proposed A-array or however many wind turbines might be necessary to prevent any negative aesthetic impact to the nationally and globally recognized scenic area and its view points in the Columbia River Gorge. **People come here to heal their souls and to escape from, not be impressed by, industrial complexes.**

The Third issue we raised was partially resolved, not due to your actions, but as a result of a decision rendered by DNR, which prevented, at least temporarily, the leasing of adjacent DNR land to SDS for placement of additional wind turbines.

We are still greatly concerned that this proposed project is reportedly the first of its kind in forested habitats in Washington. This begs the need for intelligent planning, caution and due consideration given the potentially profound impact on watersheds, wildfire risk, bats, avian species, mammals and humans.

We feel greatly disappointed that the current draft EIS appears to hide behind outdated and inadequate state regulations, and pray that EFSEC and BPA will yet demonstrate desperately needed leadership in adopting a quality and accurate model for wind turbine siting that is in harmony with the environment while providing ample protection for the health and quality of life of all Washington residents.

In summary, we specifically request:

- New sound impact determinations/predictions be conducted (not simply review the current estimates) by an Independent Qualified Acoustical Consultant, preferably by Kamperman and James;

- That a proven complex, 3-dimensional computerized sound propagation model, using both dBA and dBC scales and based on the most current and best available science, be used to more accurately predict sound impacts in this mountainous terrain in an effort to protect people's sleep, health and quality of life;

- and that the "How to" Guide to Siting Wind Turbines to Prevent Health Risks (or **minimally**, the EPA guidelines) be used in determining projected impact and that any predicted decibel increases over 10 be mitigated up front by effective set-backs or the outright elimination of selected wind turbines.

EFSEC... the very name indicates that you must evaluate appropriate siting for proposed energy facilities, but does it demand that you must site? Have you ever recommended against siting a wind energy facility?

This siting, if it occurs, will set a precedent with troubling and long-standing consequences for not only forested lands in Washington, but will also put at risk all other national and state treasures, parks, and scenic areas. History is replete with

disastrous consequences from forging ahead to achieve short-term financial windfalls without adequate regulatory oversight and caution. Big money interests and unfortunately, sometimes government, suppresses and ignores mounting scientific evidence that is contrary to its financial and political goals (as in the effects of tobacco, deforestation and most recently, deep-water drilling). Must we blindly go forward and ruin all that has been set aside? Once it is gone, it is gone. Employing wisdom and forethought, if there is ever a time for EFSEC and BPA to determine **"NO, the cost is too great!"** this is it.

Respectfully submitted,

Keith Brown, Ph.D. and Teresa Robbins

[redacted]

(6) Attachments:

Verbal Testimony of Keith Brown, Ph.D. and Teresa Robbins on the EFSEC/BPA draft EIS for Whistling Ridge Energy Project, Noise Impact Section – June 16, 2010

The "How To" Guide to Siting Wind Turbines to Prevent Health Risks from Sound, George W. Kamperman, P.E. and Richard R. James, INCE – October 2008

Environmental Noise Guidelines: Wind Farms, Environmental Protection Authority Government of South Australia, February 2003

Public Health Impacts of Wind Turbines, Carl Hebrandson, Ph.D., Toxicologist and Rita B. Messing, Ph.D. Toxicologist, Minnesota Department of Health Environmental Health Division – May 22, 2009

(State of Oregon Wind Energy Facilities) Noise Control Regulations for Industry and Commerce 340-035-0035

Wind Turbines, Health, Ridgelines, and Valleys, Michael A. Nissenbaum, M.D. – May 7, 2010

(3) Previously Provided Attachments:

Deputation to the Standing Committee on General Government Regarding Bill C-150, Robert McMurtry, M.D. – April 22,2009

Presentation to the Maine Medical Association, Michael A. Nissembaum, M.D. – March 2009

Health Concerns and the Need for Careful Siting of Wind Turbines...Medical Staff of Northern Maine Medical Center – March 4, 2009

KEITH BROWN, Ph.D.

Look, I'm not an expert on wind turbines, but I've taught program evaluation, advanced statistics and measurement techniques at Indiana and Boise State Universities. I was the assistant director of one of the top research and development centers in my field. My job was to find the truth. During the last two years I've spent hundreds and hundreds of hours researching probable impact of wind turbine noise.

The primary purpose of the noise portion of this draft EIS **should be to predict as accurately as possible and to fully describe potential adverse impacts of the probable and worst case noise scenarios** that would be inflicted upon the people who live, work, recreate and sleep in the Cook-Underwood, Mill A and surrounding communities.

This EFSEC/BPA draft EIS, in our opinion, **fails to do this**. Instead:

1) it **hides** behind outdated noise regulations never intended for industrial wind turbine complexes,

2) it **distorts** the comparison of the EPA to Washington noise guidelines,

3) it **ignores** guidelines specifically designed to reduce adverse wind turbine noise impacts,

4) it **collects inadequate data** on current noise levels at homes closest to the proposed industrial wind turbines

and finally,

5) it **uses a computer model too simple to accurately predict** noise levels at affected home locations in complex mountainous terrain and varied weather conditions.

1) What do we mean by "outdated" regulations? The Washington Noise Regulations were written in 1975 (that's **35 years ago**). This is well before the current large-scale industrial wind turbines were even developed!

This draft EIS **ignores the substantial work that has been done since 1996 in developing regulations and guidelines specific to appropriate and ecological siting of industrial wind turbines**. Simply using the outdated Washington Noise regulations will result in this community being subjected to significantly higher noise levels than to which Oregon communities, just across the river, are currently subjected.

(Typical **26** decibel "Background")

NIGHTTIME MAX

OREGON	EPA	DRAFT EIS
36	45	50
	(Increases allowed over "Background")	
10	**10** **serious, warrants close attention**	24

Just across the river, an industrial wind turbine complex is permitted to create noise levels only up to 10 decibels over existing ambient background noise (typically 26 decibels). So, total ambient background noise plus the wind energy facility operating at **maximum** capacity **is not to exceed a total of 36 decibels.**

How can BPA, which operates in Oregon as well, in good conscience, apply a more destructive standard to Washington? This draft EIS will allow the Whistling Ridge wind complex to increase total noise levels up to and exceeding 60 decibels during the day and 50 decibels during the night. **That's a difference of an additional 14 decibels during the night over the Oregon standard**... when people are attempting to sleep.

Even according to the inadequate sound measurements done for this draft EIS, measured nighttime ambient background noise **would be allowed to rise by 24 decibels**!

You might think 'That's not a lot'. The EPA Region X guidelines stated that an increase of **10-plus decibels** over existing background noise **will result in significant negative community reaction** and would be considered **serious, warranting close attention.** Further, the New York State Energy Research and Development Authority states "...A 10 dB increase is subjectively heard as an approximate doubling in loudness and almost always causes an adverse community response."

24 decibels? Really... That's okay?

2) 1974 EPA guidelines (for general noise, not wind turbine noise) specify a 10 decibel penalty for nighttime hours, which would effectively **limit noise levels to 45 decibels** during the night. In our opinion, this draft EIS skews even this distinction by averaging allowable daytime and nighttime levels, thereby boosting the suggested nighttime limit to **49 decibels**, then portraying it to be "generally consistent" with the 50 decibel outdated Washington standard. What should be compared is the EPA nighttime limit of 45 to the Washington nighttime 50, **which is not generally consistent** *(p.3-118, draft EIS).* Further, it makes no mention of the EPA guidelines just cited above regarding the impact of decibel increases of 10 or more over background noise.

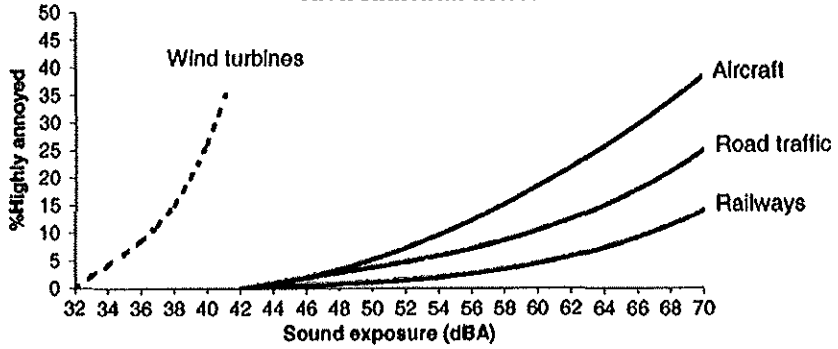
3) It is astounding that this draft EIS **makes no mention of the plethora of guidelines designed specifically to reduce the impact of industrial wind turbine complexes**. You wouldn't have had to go very far to get this information.

We've already mentioned the Oregon standards *(copy attached)*. Similar guidelines exist in country after country around the world, including Australia *(copy attached)*, Denmark, France, Germany, Holland, even the World Health Organization. We actually provided you in May of 2009, the extremely useful, recent research **and relevant** Kamperman and James "How to" Guide to Siting Wind Turbines to Prevent Health Risks from Sound. *(copy attached)*

What do all these guidelines have in common? They are based on research of what would be effective in limiting the impact of wind turbine complex noise on nearby residents. **They limit maximum noise levels to between 35 and 40 decibels.** Why do they do this? Based upon decades of extensive experience with wind turbines, they have determined the type and level of noise produced by industrial wind turbine complexes impacts people differently than other industrial noises.

The following chart taken from the **Public Health Impacts of Wind Turbines prepared by the Minnesota Department of Health Environmental Health Division in response to a request from the Minnesota Department of Commerce Office of Energy Security (equivalent to Washington State EFSEC)** demonstrates that the modulating sound wave noise wind turbines produce, results in significantly more annoyance than noises of traffic, railways, and aircraft.

Figure 6: Annoyance associated with exposure to different environmental noises



Reprinted with permission from Pedersen, E. and K.P. Waye (2004). Perception and annoyance due to wind turbine noise–a dose-response relationship. The Journal of the Acoustical Society of America 116: 3460. Copyright 2004, Acoustical Society of America.

What specifically does this show? **35+%** of people in rural areas **experience wind turbine noise at about 40 decibels as "highly annoying".** Conversely, at 40 decibels of aircraft, traffic or railway noise, **0%** of people report "high annoyance". It would take 70 decibels of aircraft noise, and far in excess of 70 decibels for road traffic and railway noise to create the same level of annoyance that wind turbines create at 40 decibels.

Noise standards used for aircraft, railway, and traffic noise **are inadequate** when applied to wind turbine noise impact. **Wind turbines are clearly in a different class of sound impact and require a different standard!**

4) We see no additional measurements other than the short-term and limited measurements originally provided by the consultant hired by SDS (three 10-minute readings at a site approximately a ½ mile beyond the home site closest to proposed wind turbine placement and three 10-minute readings from a site nearly 2 miles beyond the 3rd closest home site … and one 24-hour measurement from the site a ½ mile beyond the closest home site… all taken in January 2009). **Reported measurements were not even taken at the closest property lines or residences.**

Readings of such short duration prevented measurement of actual ambient noise levels at the home sites when the proposed wind turbines site was experiencing wind at the 6 and 9 meters per second level recommended for accurate projections *(see attached Wind Farms Environmental Noise Guidelines produced by Environmental Protection Authority – South Australia)*. For your convenience, 6 and 9 are the cut-in speed and rated power speed, respectively.

By the way, it is critical to take measurements at the right time – summer... and the right place – affected residences. The greatest potential adverse impact is during the summer when people are sleeping with windows open during an inversion when the ambient background noise is very low at the homesite and the wind turbines are operating at maximum speed. Measuring far away from the homes in winter utterly misrepresents what these residents will experience.

Further, the consultant reported that the SDS meteorological data was **potentially compromised due to ice-y conditions,** indicating we don't even know what the actual wind levels were at the wind turbine site during the limited readings provided!

5)

a. The home site closest to the proposed wind turbines is in an area where the wind turbine noise may reflect off of the amphitheater-like bowl terrain, thus the sound will not attenuate as it would in flatter terrain and will be louder. We see no evidence that this was built-in to the computer model. Research in complex mountainous terrain by Prospathopoulos, J. M. and Voutsinas, S. G. *(Application of a ray theory model to the prediction of noise emissions from isolated wind turbines and wind parks... in Wind Energy, Volume 10 Issue 2, Pages 103 – 119, published online: 6 Dec 2006, John Wiley & Sons,*

Ltd.) **proves** that the simple computer model employed in this draft EIS prediction is inadequate. **"In cases of complex terrain... simple projection models are no longer valid."**

b. The computer projection model utilized is based upon wind speeds measured at 10 meters height, which extensive research shows **will underestimate the wind speeds at the hub by a factor of as much as 2.6! This results in underestimating the wind turbine noise by as much as 15 decibels** during inversions when wind shears develop due to layering of air and the separation of wind currents. *(The sound of high winds: the effect of atmospheric stability on wind turbine sound and microphone noise, van den Berg, G. P. 2006, Rijksuniversiteit Groningen)*

While the draft EIS notes this phenomenon, it is once again, not built into the computer projection model used. This is important because, it is during these inversions (mostly at night) that people experience even greater sleep disturbance and what is described by van den Berg 2006 as "thumping", "pile driving", "a train coming and never arriving"... and that the most annoyance is reported.

c. The computer projection model appears to use each wind turbine as a "point source", with no information provided to suggest that the computer simulation treats each array as a "line" source.

There is ample scientifically proven evidence both from: NASA studies *(Prediction of the Far Field Noise from Wind Energy Farms, Shepherd, K. P. and Hubbard, H.H 1986, NASA-CR-177956)*

> "At intermediate distances the array acts like a line source for which the theoretical decay rate is 3 dB per doubling of distance or 10 dB per decade. Only at the extreme distances, greater than one row length or 900 m, does the decay rate approach the single source value of 6 dB per doubling of distance or 20 dB per decade"*(page 4)*;

and van den Berg's 2006 thesis, which you even cited in your EIS, that demonstrates wind turbines arrayed in a line, as they are projected to be at the Whistling Ridge site, may operate as a "line source". **This results in sound attenuation at 3 decibels per doubling of distance vs. the 6 decibels projected from a "point source".** (We recommend you actually read the whole thesis, as we did.)

The same thing happens with cars traveling in a line and it is why USDOT *(May 2006 – Transit Noise and Vibration Impact Assessment)* requires that the **3 decibel attenuation** be used in all assessment and designed mitigation of potentially heavy traffic impact.

We've thoroughly examined this draft EIS on noise impact and find it to be totally inadequate. It needs to be redone.

TERESA ROBBINS

SO...WHAT DOES ALL THIS MEAN TO THE PEOPLE OF THIS COMMUNITY?

We offer this recent study (with appropriate "control" group protocols) conducted by Medical Doctor Michael A. Nissenbaum (whole slew of qualifications) to provide some important insight and "sound" the alarm *(see attached: Wind Turbines, Health, Ridgelines, and Valleys, 2010)*.

"If industrial wind turbines installed in close proximity to human habitation result in sleep disturbance and stress, then it follows ... that wind turbines will, over the long term, result in... serious health effects (cardiovascular disease, chronic feelings of depression, anger, helplessness) and reduced quality of life."

He compared a group of "exposed" individuals, meaning living within 3500 feet of a ridgeline arrangement of 28 1.5 MW wind turbines... *(Note: the proposed Whistling Ridge will have more and larger turbines)*

And a group of similar age and occupation "not exposed" individuals, meaning living approximately 3 miles away from the industrial complex...
Here's what he found:

"EXPOSED"	NOT "EXPOSED"
New/worsened chronic sleep deprivation	
82%	4%
New chronic headaches	
41%	4%
Stress	
59%	0%
Persistent anger	
77%	0%
New/worsened depression	
33+%	0%
Perceived reduced quality of life	
95%	0%

New prescriptions offered	New/increased prescriptions
26 (15 accepted)	4

Type of prescriptions

Anti-hypertensives **anti-hypertensives**
Anti-depressants **anti-arthritics**
Anti-migraines

"There is absolutely no doubt that people living within 3500 feet of a ridgeline arrangement of turbines 1.5 MW or larger … in a rural environment will suffer negative effects."

Ridgeline industrial wind turbine complex "noise travels farther and hits homes and people at greater amplitude than it would from a lower elevation. Even though this is not rocket science, it was conclusively proven in a NASA funded study in 1990."

"The WHO says that 30dbA is ideal, and noise levels of above 40 dbA have definite health consequences. At Mars Hill, where affected homes are present at 3500 feet, sound levels have been measured at over 52.5 dbA…. The people who live within 3500 feet …are truly suffering."

And you are proposing to allow up to 60 decibels here? We fear this will lead to similar suffering as residents of Mars Hill.

The cutting edge equipment we have previously proposed you use for more accurate measurement, and according to Nissenbaum,

> …"revealed drastic short duration excesses over allowed sound levels, levels that set homes vibrating and rendering them unlivable, but also levels of lower frequency transient noise at the audible level, that demonstrates not only failure of preconstruction sound modeling as currently practiced, but also the

> inadequacy of the measuring tools in the toolkit of the everyday practicing acoustician-consultant who generates reports for industry and local government."

In addition to this study, we are providing you with a copy of the 26-page white paper Public Health Impacts of Wind Turbines prepared by the Minnesota Department of Health Environmental Health Division in response to a request from the Minnesota Department of Commerce Office of Energy Security (equivalent to Washington State EFSEC).

It is a recent review, **performed by two unbiased Ph.D. Toxicologists**, of all the relevant published studies. While we strongly insist you read the entire study, due to limited time to testify, we offer one quote from the white paper conclusions.

> "The most common complaint in various studies of wind turbine effects on people is annoyance or an impact on quality of life. Sleeplessness and headaches are the most common health complaints and are highly correlated (but not perfectly correlated) with annoyance complaints. Complaints are more likely when turbines are visible or when shadow flicker occurs. Most available evidence suggests that reported health effects are related to audible low frequency noise. Complaints appear to rise with increasing outside noise levels above 35 dbA."

And if that is not enough, here are quotes from one of the experts you cited in the draft EIS ***(van den Berg, 2006).*** He has conducted one of the most comprehensive studies of what is causing the increased noise levels experienced above model predictions.

> "Recently Pedersen... found that annoyance was relatively high at calculated maximum sound immission levels below 40 dB(A) where one would not expect strong annoyance."

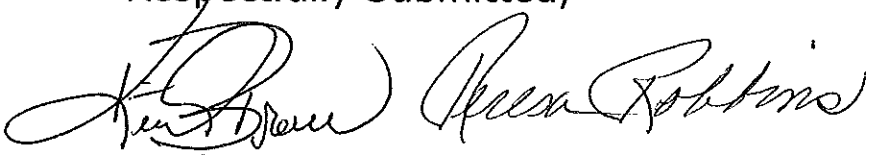
> "As wind turbines become taller, the discrepancy between real and expected levels grows and as more tall wind turbines are constructed complaints may become more widespread. … It may be that earlier discrepancies between real and projected sound immission were not sufficient to evoke strong community reactions, and **that only recently turbines have become so tall that the discrepancy now is intolerable."**(our emphasis)
>
> "… in quiet nights the wind farm can be heard at distances up to several kilometers when the turbines rotate at high speed. In these nights, certainly at distances from 500 to a 1000 meters from the wind farm, one can hear a low-pitched thumping sound with a repetition rate of once a second… not unlike distant pile driving. A resident living a distance of 2.3 kilometers from the wind farm describes the sound as 'an endless train'."

And finally, this is your cited expert we quote

> **"… proponents must accept that wind turbine noise is not (always) benign, that the noise may affect people, and that people who are complaining are not always just a nuisance."**

Read his excellent 210-page dissertation. We have. Hence, we continue to be upset and very concerned.

Respectfully Submitted,



Keith Brown, Ph.D.
Teresa Robbins
[redacted]

THE "HOW TO" GUIDE
TO
SITING WIND TURBINES
TO PREVENT HEALTH RISKS FROM SOUND

By:

George W. Kamperman, P.E., and Richard R. James, INCE

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"A subset of society should not be forced to bear the cost of a benefit for the larger society."[1]

I. Introduction

A new source of community noise is spreading rapidly across the rural U.S. countryside. Industrial-scale wind turbines (WT), a common sight in many European countries, are now actively promoted by federal and state governments in the U.S. as a way to reduce coal-powered electrical generation and global warming. The presence of industrial wind projects is expected to increase dramatically over the next few years, given the tax incentives and other economic and political support currently available for renewable energy projects in the U.S.

As a part of the widespread enthusiasm for renewable energy, state and local governments are promoting "Model Ordinances" for siting industrial wind farms which establish limits for noise and other potential hazards. These are used to determine where wind projects can be located in communities, which are predominantly rural and often extremely quiet during the evening and night. Yet, complaints about noise from residents near existing industrial wind turbine installations are common. This raises serious questions about whether current state and local government siting guidelines for noise are sufficiently protective for people living close to the wind turbine developments. Research is emerging that suggests significant health effects are associated with living too close to modern industrial wind turbines. Research into the computer modeling and other methods used to determine the layout of wind turbine developments, including the distance from nearby residences, is at the same time showing that the output of the models may not accurately predict sound propagation. The models are used to make decisions about how close a turbine can be to a home or other sensitive property. The errors in the predicted sound levels can easily result in inadequate setback distances thus exposing the property owner to noise pollution and potential health risks. Current information suggests the models should not be used for siting decisions unless known errors and tolerances are applied to the results.

Our formal presentation and paper on this topic (*Simple guidelines for siting wind turbines to prevent health risks*) is an abbreviated version of this essay. The formal paper was presented to the Institute of Noise Control Engineers (INCE) at its July Noise-Con 2008 conference in Detroit, MI, A copy of

[1] George S. Hawkins, Esq., *"One Page Takings Summary: U.S Constitution and Local Land Use,"* Stony Brook-Millstone Watershed Association; *"...nor shall private property be taken for public use, without just compensation."* Fifth Amendment, US Constitution.

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the paper is included at the end of this document. The formal paper covered the community noise studies performed in response to complaints, research on health issues related to wind turbine noise, critiques of noise studies performed by consultants working for the wind developer, and research/technical papers on wind turbine sound immissions and related topics. The formal paper also reviewed sound studies conducted by consultants for governments, the wind turbine owner, or the local residents for a number of sites with known health or annoyance problems. The purpose was to determine if a set of simple guidelines using dBA and dBC sound levels can serve as the 'safe' siting guidelines for noise and its effects on communities and people. The papers considered in our review included, but were not limited to, those listed in Tables 1-4 on pages 2 through 4 of the Noise-Con document.

This essay expands upon the Noise-Con paper and includes information to support the findings and recommended criteria. We are proposing very specific, yet reasonably simple to implement and assess criteria for audible and non-audible sound on adjacent properties and also present a sample noise ordinance and the procedures needed for pre-construction sound test, computer model requirements and follow-up tests (including those for assessing compliance).

The purpose of this expanded paper is to outline a rational, evidence-based set of criteria for industrial wind turbine siting in rural communities, using:

1) A review of the European and other wind turbine siting criteria and existing studies of the prevalence of noise problems after construction;
2) Primary review of sound studies done in a variety of locations in response to wind turbine noise complaints (Table 1);
3) Review of publications on health issues for those living in close proximity to wind turbines (Table 2);
4) Review of critiques of pre-construction developer noise impact statements (Table 3); and
5) Review of technical papers on noise propagation and qualities from wind turbines (Table 4).

The Tables are on pages 2-4 of the formal paper. We also cite standard international criteria for community noise levels and allowances for low-frequency noise.

The specific sections are:

1. Introduction (This section)
2. Results of Literature Review and Sound Studies
3. Development of Siting Criteria
4. Proposed Sound Limits
5. How to Include the Recommended Criteria in Local or State Noise Ordinances
6. Elements of a Wind Energy System Licensing Ordinance
7. Measurement Procedures (Appendix to Ordinance)
8. The Noise-Con 2008 paper "Simple guidelines for siting wind turbines to prevent health risks" with revisions not in the paper included in the conference's Proceedings.

The construction of large WT (industrial wind turbines) projects in the U.S. is a relatively recent phenomenon, with most projects built after 2000. Other countries, especially in Europe, have been using wind energy systems (WES) since the early 1990's or earlier. These earlier installations generally used turbines of less than 1 MW capacity with hub heights under 61 m (200 feet). Now, many of these earlier turbines reaching the end of their useful life, are being replaced with the

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larger 1.5 to 3 MW units. Thus, the concepts and recommendations in this article, developed for the 1.5 MW and larger turbines being build in the U.S, may also be applicable abroad.

II. Results of Literature Review and Sound Studies

In the U.K. there are currently about 133 operating WT developments. Many of these have been in operation for over 10 years. The Acoustic Ecology Institute[2] (AEI) reported that a Special Report for the British government titled "Wind Energy Noise Impacts,"[3] found that about 20% of the wind farms in the U.K. generated most of the noise complaints. Another study commissioned by British government, from the consulting firm Hayes, McKensie, reported that only five of 126 wind farms in the U.K. reported problems with the noise phenomenon known as aerodynamic modulation.[4] Thus, experience in the U. K. shows that not all WT projects lead to community complaints. AEI posed an important question: **"What are the factors in *those* wind farms that may be problematic, and how can we avoid replicating these situations elsewhere?"**

As experienced industrial noise consultants ourselves, we would have expected the wind industry, given the U.K. experience, to have attempted to answer this question, conducting extensive research -- using credible independent research institutions -- before embarking on wind power development in the U.S. The wind industry was aware, or should have been aware, that 20% of British wind energy projects provoked complaints about noise and/or vibration, even in a country with more stringent noise limits than in the U.S.

The wind industry complies with stricter noise limits in the U.K. and other countries than it does in the U.S., for example[5]:

- Australia: higher of 35 dBA or L_{90} + 5 dBA
- Denmark: 40 dBA
- France: L_{90} + 3 dBA (night) and L_{90} + 5 dBA (day)
- Germany: 40 dBA
- Holland: 40 dBA
- United Kingdom: 40 dBA (day) and 43 dBA or L_{90} + 5 dBA (night)
- Illinois: Octave frequency band limits of about 50 dBA (day) and about 46 dBA (night)
- Wisconsin: 50 dBA
- Michigan: 55 dBA

Industry representatives on state governmental committees have worked to establish sound limits and setbacks that are lenient and favor the industry. In Michigan, for example, the State Task Force (working under the Department of Labor and Economic Growth) recommended in its "Siting Guidelines for Wind Energy Systems" that the limits be set at 55 dBA or L_{90} + 5 dBA, whichever is higher. In Wisconsin, the State Task Force has recommended 50 dBA.

When Wisconsin's Town of Union wind turbine committee made an open records request to find out the scientific basis for the sound levels and setbacks in the state's draft model ordinance, it found that no scientific or medical data was used at all. Review of the meeting minutes provided

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[2] (http://www.acousticecology.org/srwind.html)

[3] AEI is a 501(c)3 non-profit organization based in Santa Fe, New Mexico, USA. The article is available at http://www.acousticecology.org/srwind.html

[4] Study review available at: http://www.berr.gov.uk/files/file35592.pdf

[5] Ramakrishnan, Ph. D., P. Eng., Ramani, "Wind Turbine Facilities Noise Issues" Dec. 2007 Prepared for the Ontario Ministry of Environment.

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under the request showed that the limits had been set by Task Force members representing the wind industry.[6] This may explain why state level committees or task forces have drafted ordinances with upper limits of 50 dBA or higher instead of the much lower limits applied to similar projects in other countries. There is no independent, scientific or medical support for claims that locating 400+ foot tall wind turbines as close as 1000 feet (or less) to non-participating properties will not create noise disturbances, economic losses or other risks.[7] But, there is considerable independent research supporting that this will result in public health risks and other negative impacts on people and property.

To illustrate the way a typical WT developer responds to a question raised by a community committee about noise and health the following example is presented and discussed:

> **Q: 19. What sound standards will EcoEnergy ensure that the turbines will be within, based on the setbacks EcoEnergy plans to implement, and what scientific and peer reviewed data do you have to ensure and support there will be no health and safety issues to persons within your setbacks?**
>
> **Answer:** As mentioned, turbines are sited to have maximum sound level of 45dBA. These sound levels are well below levels causing physical harm. Medical books on sound indicate sound levels above 80-90dBA cause physical (health) effects. The possible effects to a person's health due to "annoyance" are impossible to study in a scientific way, as these are often mostly psychosomatic, and are not caused by wind turbines as much as the individuals' obsession with a new item in their environment.
>
> **From EcoEnergy's "Response to the Town of Union Health & Safety Research Questionnaire"**
> By Curt Bjurlin, M.S., Wes Slaymaker, P.E., Rick Gungel, P.E., EcoEnergy, L.L.C., submitted to Town of Union, Wisconsin and Mr. Kendall Schneider, on behalf of the Town of Union

A serious question was asked and it deserves a responsible answer. The committee, charged with fact-finding, sought answers they presumed would be based on independent, peer-reviewed studies. Instead, the industry response was spurious and misleading, and did not address the question. It stated that the turbines will be located so as to produce maximum sound levels of 45 dBA, the tone and context implying that 45 dBA is fully compatible with the quiet rural community setting. No acknowledgement is made of the dramatic change this will be for the noise environment of nearby families. No mention is made of how the WT, once in operation, will raise evening and nighttime background sound levels from the existing background levels of 20 to 30 dBA to 45 dBA. There is no disclosure of the considerable low frequency content of the WT sound; in fact, there are often claims to the contrary. They fail to warn that the home construction techniques used for modern wood frame homes result in walls and roofs that cannot block out WT low frequencies.

There is no mention of the nighttime sound level recommendations set by the World Health Organization (WHO) in its reports, *Guidelines for Community Noise* [8] and "Report on the third

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[6] Lawton, Catharine M., Letter to Wisconsin's "Guidelines and Model Ordinances Ad Hoc Subcommittee of the Wisconsin Wind Power Siting Collaborative" in Response to Paul Helgeson's 9/20/00 "Wisconsin Wind Ordinance Egroups E-Mail Message," Sept. 20, 2000, a Public Record obtained through Open Meetings Act request by the Town of Union, Wisconsin, Large Wind Turbine Citizens Committee.

[7] It is worth noting that the 2007-06-29 version of the Vestas Mechanical Operating and Maintenance Manual for the model V90 – 3.0 MW VCRS 60 Hz turbine includes this warning for technicians and operators:

> **"2. Stay and Traffic by the Turbine**
>
> Do not stay within a radius of 400m (1300ft) from the turbine unless it is necessary. If you have to inspect an operating turbine from the ground, do not stay under the rotor plane but observe the rotor from the front.
> Make sure that children do not stay by or play nearby the turbine. ...."

[8] Available at http://www.who.int/docstore/peh/noise/guidelines2.html.

meeting on night noise guidelines.[9]" In these documents WHO recommends that **sound levels during nighttime and late evening hours should be less than 30 dBA during sleeping periods to protect children's health**. They noted that a child's autonomic nervous system is 10 to 15 dB more sensitive to noise than is an adult. Even for adults, health effects are first noted in some studies when the sound levels exceed 32 dBA L_{max}. These sounds are 10-20 dBA lower than the sound levels needed to cause awakening.

For sounds that contain a strong low frequency component, which is typical of wind turbines, WHO says that the limits may need to be even lower than 30 dBA to avoid health risks. Further, they recommend that the criteria use dBC frequency weighting instead of dBA for sources with low frequency content. When WT sound levels are 45 dBA outside a home, we may find that the interior sound levels will drop to the 30 dBA level recommended for sleeping areas but low frequency noise only decreased 6-7 dBC from outside to inside. That could create a sleep problem because the low frequency content of the noise can penetrate the home's walls and roof with little reduction. An example demonstrating how WT sound is affected by walls and windows is provided later in this document.

The wind turbine developers in the excerpt above do not disclose that the International Standards Organization (ISO) in ISO 1996-1971 recommends 25 dBA as the maximum night-time limit for rural communities. As can be seen in the table below, sound levels of 40 dBA and above are only appropriate in suburban communities during the day and urban communities during day and night. There are no communities where 45 dBA is considered acceptable at night.

ISO 1996-1971 Recommendations for Community Noise Limits (dBA)			
District Type	Daytime Limit	Evening Limit 7-11pm	Night Limit 11pm-7am
Rural	35dB	**30dB**	**25dB**
Suburban	40dB	35dB	**30dB**
Urban residential	45dB	40dB	35dB
Urban mixed	50dB	45db	40dB

Further, the wind industry claims, *"These sound levels are well below levels causing physical harm. Medical books on sound indicate sound levels above 80-90dBA cause physical (health) effects."* Concern about sound levels in the 80-90 dBA range is for hearing health (your ears) and not the health-related issues of sleep disturbance and other symptoms associated with prolonged exposure to low levels of noise with low frequency and amplitude modulation such as the sound emitted by modern wind turbines. This type of response is a non-answer. It is an overt attempt to mislead while giving the appearance of providing a legitimate response.

Furthermore, the statement, *"The possible effects to a person's health due to 'annoyance' are impossible to study in a scientific way, as these are often mostly psychosomatic, and are not caused by wind turbines as much as the individuals' obsession with a new item in their environment,"* is both inaccurate and misleading. It ignores the work of researchers such as Pedersen, Harry, Phipps, and Pierpont on wind turbine effects specifically, and the numerous medical research studies reviewed by Frey and Hadden. The studies belie the claims of the wind industry. This "failure to locate" published

[9] Available at: http://www.euro.who.int/Noise/activities/20040721_1 References found in Report on third meeting at pages 13 and others

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studies that are readily available on the internet as to make some interpret the claim of "no medical research" as a conscious decision to not look for it. Those companies that do acknowledge the existence of medical research take the position that it is not credible for one or another reason and thus can be ignored.

Making statements outside their area of competence, wind industry advocates, without medical qualifications, label complaints of health effects as "psychosomatic" in a pejorative manner that implies the complaints can be discounted because they are not "really medical" conditions. Such a response cannot be considered to be based in fact. It is, at best, an opinion. It ignores the work of many researchers, including the World Health Organizations, on the effect of sounds during nighttime hours that result in sleep disturbance and other disorders with physical, not just psychological, pathologies.[10,11] Many people find it difficult to articulate what has changed. They know something is different from before the wind turbines were operating and they may express it as feeling uncomfortable, uneasy, sleepless, or some other symptom, without being able to explain why it is happening.

Our review of the studies listed in Tables 1-4 of our Noise-Con paper show that some residents living as far as 3 km (1.86 mi) from a wind farm complain of sleep disturbance from the noise. Many residents living 1/10 of this distance (300 m or 984 ft) from wind farms experience major sleep disruption and other serious medical problems from nighttime wind turbine noise. The peculiar acoustic characteristics of wind turbine noise immissions[12] cause the sounds at the receiving properties to be more annoying and troublesome than the more familiar noise from traffic and industrial factories. Limits used for these other community noise sources are not appropriate for siting modern industrial wind turbines. The residents who are annoyed by wind turbine noise complain of the repetitive, approximately once-per-second (1 Hz) "swoosh-boom-swoosh-boom" sound of the turbine blades and of "low frequency" noise. It is not clear to us whether the complaints about "low frequency" noise are about the audible low frequency part of the "swoosh-boom" sound, the once-per-second amplitude modulation (amplitude modulation means that the sound varies in loudness and other characteristics in a rhythmic pattern) of the "swoosh-boom" sound, or some combination of the two.

Figure 1 of our Noise Con paper, reproduced as Figure 1, below, shows the data from one of the complaint sites plotted against the sound immission spectra for a modern 2.5 MWatt wind turbine; A home in the United States at 2km distance, Young's threshold of perception for the 10% most sensitive population (ISO 0266); and a spectrum obtained for a rural community during a three hour, 20 minute test from 11:45 pm until 3:05 am on a windless June evening near Ubly, Michigan. This is a quiet rural community located in central Huron County (also called Michigan's Thumb). It is worth noting that this sound measurement sample demonstrates how quiet a rural community can be when located at a distance from industry, highways, and airport related noise emitters.

The line representing the threshold of perception is the focus of this graph. The remaining graphs show sound pressure levels (dB) at each of the frequency ranges from the lowest inaudible sounds at the left, to sounds that "rumble" (20Hz to about 200 Hz) and then those in the range of communication (200Hz through about 4000Hz) through high pitched sounds (up to 10,000 Hz). At

[10] WHO European Centre for Environment and Health, Bonn Office, "Report on the third meeting on night noise guidelines," April 2005.

[11] According to Online Etymology Dictionary, *psychosomatic* means "pertaining to the relation between mind and body, ... applied from 1938 to physical disorders with psychological causes."

[12] *Emissions* refer to acoustic energy from the viewpoint of the sound emitter, while *immissions* refer to acoustic energy from the viewpoint of the receiver.

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each frequency where the graphs of sound pressures are above (exceed) the graph showing perception the wind turbine sounds would be perceptible or audible. The more the wind turbine sound exceeds the perception curve the more pronounced it will be. When it exceeds the quiet rural background sound level (L_{A90}) it will not be masked or obscured by the rural soundscape.

The over-all sounds from each of the frequency bands are summed and presented on the right hand side of the graph. These are presented with corrections for A-weighting (dBA) and C-weighting (dBC). These show that if only dBA criteria are used to assess and limit wind turbine sound the low frequency content of the wind turbines emissions are not revealed. Note that in many cases the values for dBC are almost 20 dB higher than the dBA values. This is the basis for the WHO warning that when low frequency sound content is present outside a home dBA is not an appropriate method of describing predicted noise impacts, sound limits, or criteria.

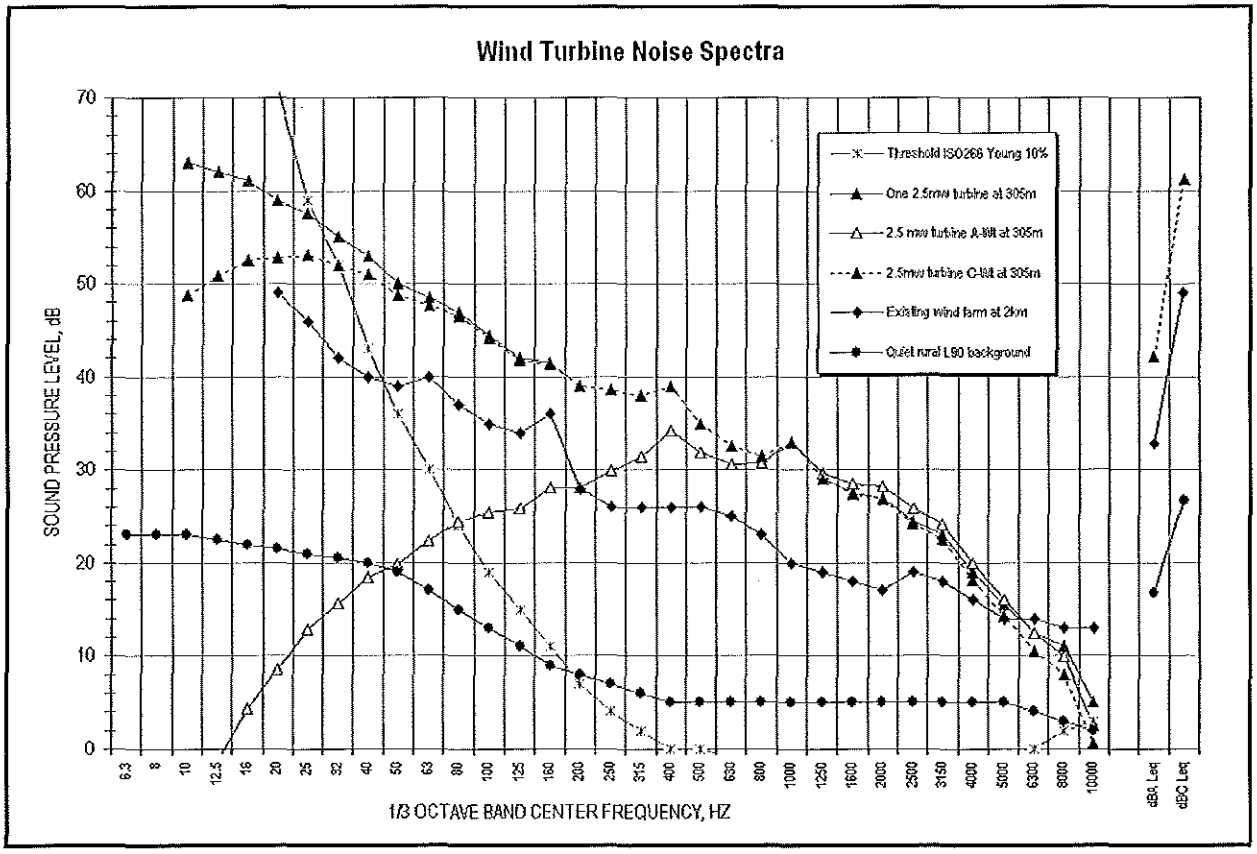

Figure 1-Graph Of Wind Turbine Sounds Vs. Rural Background And Threshold Of Perception

(Note: The lowest L_{Aeq} and L_{Ceq} shown at right are measured background L_{A90} and L_{C90} . The Leq values could be 0-5 dB higher)

Our review of the studies listed in Tables 1-4 in the Noise-Con paper at the end of this document, provided answers to a number of significant questions we had, as acoustical engineers, regarding the development of siting guidelines for industrial-scale wind turbines. They are provided below for easy of reading and continuity:

Do international, national, or local community noise standards for siting wind turbines near dwellings address the low frequency portion of the wind turbines' sound immissions? No. State and local governments are in the process of establishing wind farm noise limits and/or wind turbine setbacks from nearby residents, but the standards incorrectly assume that limits based on dBA levels are sufficient to protect the residents.

Do wind farm developers have noise limit criteria and/or wind turbine setback criteria that apply to nearby dwellings? Yes. But the industry-recommended wind turbine noise levels (typically 50-55 dBA) are too high for the quiet nature of the rural communities and may be unsafe for the nearest residents. An additional concern is that some of the methods for pre-construction computer modeling may predict sound levels that are too low. These two factors combined can lead to post-construction complaints and health risks.

An example of a condition that complies with

Are all residents living near wind farms equally likely to be affected by wind turbine noise? No. Children, people with certain pre-existing medical conditions, and the elderly are likely to be the most susceptible. Some people are unaffected while nearby neighbors develop serious health problems caused by exposure to the same wind turbine noise.

How does wind turbine noise impact nearby residents? Wind turbine-associated symptoms include sleep disturbance, headache, ringing in the ears, dizziness, nausea, irritability, and problems with memory, concentration, and problem solving, as described in the first paper in this volume.

What are the technical options for reducing wind turbine noise immission at residences? There are only two options: 1) increase the distance between the source and receiver, or 2) reduce the source sound power emission. Either solution is incompatible with the objective of the wind farm developer, which is to maximize the wind power electrical generation within the land available.

Is wind turbine noise at a residence much more annoying than traffic noise? Yes. Researchers have found that, "Wind turbine noise was ... found to cause annoyance at sound pressure levels lower than those known to be annoying for other community noise sources, such as road traffic. ...Living in a clearly rural area in comparison with a suburban area increases the risk of annoyance with wind turbine noise.[13]" In other papers by Pedersen wind turbine noise was perceived by about 85% of respondents to the study at sound levels as low as 35.0–37.5 dBA.[14] Currently, this increased sensitivity is believed to be due to the presence of amplitude modulation in the wind turbine's sound emissions which limits the masking effect of other ambient sounds and the low frequency content which is associated with the sounds inside homes and other buildings.

Amplitude modulation is a continuing change in the sound level in synchronization with the turning of the wind turbine's blades. An example of amplitude modulation is shown in the figure 2 below. This figure shows the constantly varying dBA sound level in the graph at the top. The sound level varies from a low of 40 dBA to a high of 45 dBA repeating every 1.3 seconds continuously when the turbine is operating. The turbine is located approximately 1200 feet from the farmhouse. The photo shows the turbine that was dominant during this test.

[13] Pedersen E, Bouma J, Bakker R and Van den Berg F, "Wind Farm perception- A study on acoustic and visual impact of wind turbines on residents in the Netherlands;" 2nd International Meeting on Wind Turbine Noise, Lyon France; Sept. 20-21, 2007 (Pages 2 and 3)

[14] Pedersen E and Persson Waye K. 2004. Perceptions and annoyance due to wind turbine noise -- a dose-response relationship. J Acoust Soc Am 116(6): 3460-3470

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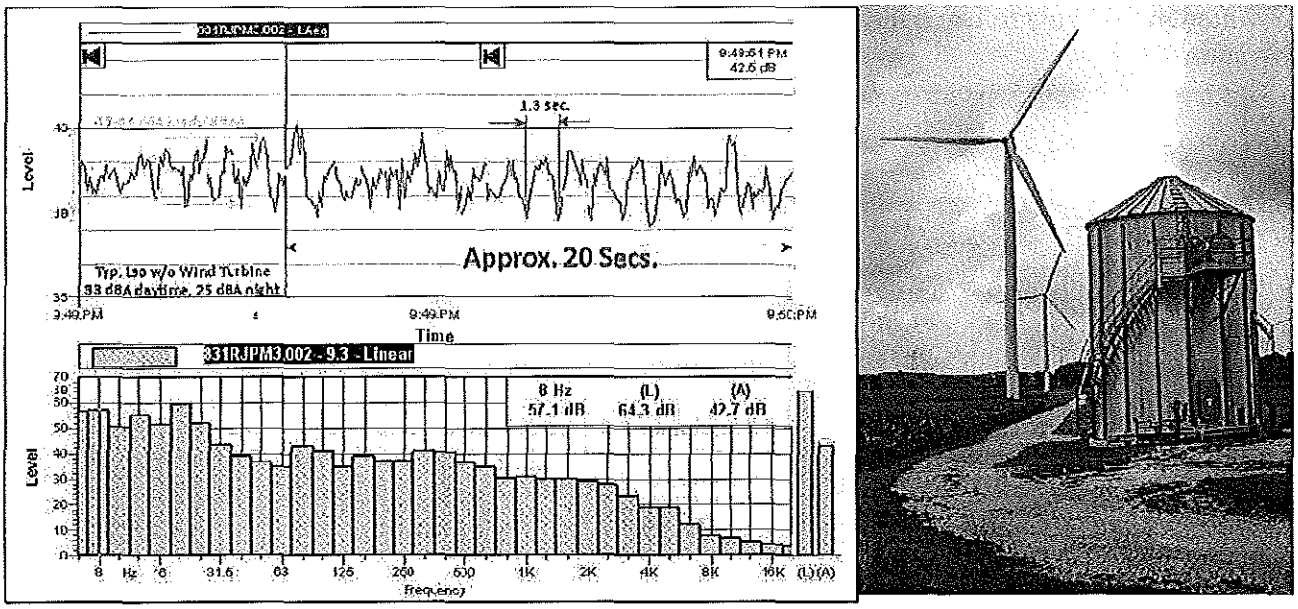

Figure 2 Amplitude Modulation at a farmhouse (Study sponsored by CCCRE, Calumet, Wisconsin)

It is worth noting that this measurement averages about 43 dBA (L_{eq}) which is very close to the sound level predicted for a single turbine at 1000 feet in Figure 1 (solid red line with solid triangle markers). The lower graph shows the frequency spectrum at approximately 9:49 PM at a low point in the amplitude modulation. (The frequency chart's cursor is the vertical line at the upper graph's midpoint.) Note the dominance of sound energy in the lower frequency range. This was also present in the model's predictions in Figure 1.

It is not hard to understand why many people in this community feel that they have been forced to accept noise pollution as a side effect of the wind project. Even though the 40 to 45 dBA sound levels in this example may comply with the 50 dBA limits adopted by the host county from the Wisconsin Model Ordinance the impact on the people near the wind project are subjected to noise pollution. This example demonstrates why criteria set at 50 dBA or higher do not protect the health and economic welfare of people living in the host communities. Adopting criteria such as those recommended later in this essay can prevent these situations from occurring.

Low frequency noise is a problem inside buildings

When low frequency sound is present outside homes and other occupied structures, it is often more an indoor problem than an outdoor one. This is very true for wind turbine sounds.

Why do wind turbine noise immissions of only 35 dBA disturb sleep at night? Affected residents complain of the middle- to high-frequency, repetitive swooshing sounds of the rotating turbine blades at a constant rate of about 1 Hz, plus low frequency noise. The amplitude modulation of the "swooshing" sound changes continuously. Residents also describe a thump or low frequency banging sound that varies in amplitude up to 10 dBA in the short interval between the swooshing sounds. This may be a result of sounds from multiple wind turbines with similar spectral content combining to increase and decrease the sound over and above the effects of modulation. [Note: These effects (e.g. phasing and coherence effects) are not normally considered in predictive models.] It may also be a result of turbulence of the air and wind on wind turbine operations when the blades are not at an optimum angle for noise emissions and/or power generation. It is also a result of sounds penetrating homes and other buildings at night and at other times where quiet is needed. When low frequency sound is present outside homes and other occupied structures, it is

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often more likely to be an indoor problem than an outdoor one. This is very true for wind turbine sounds.

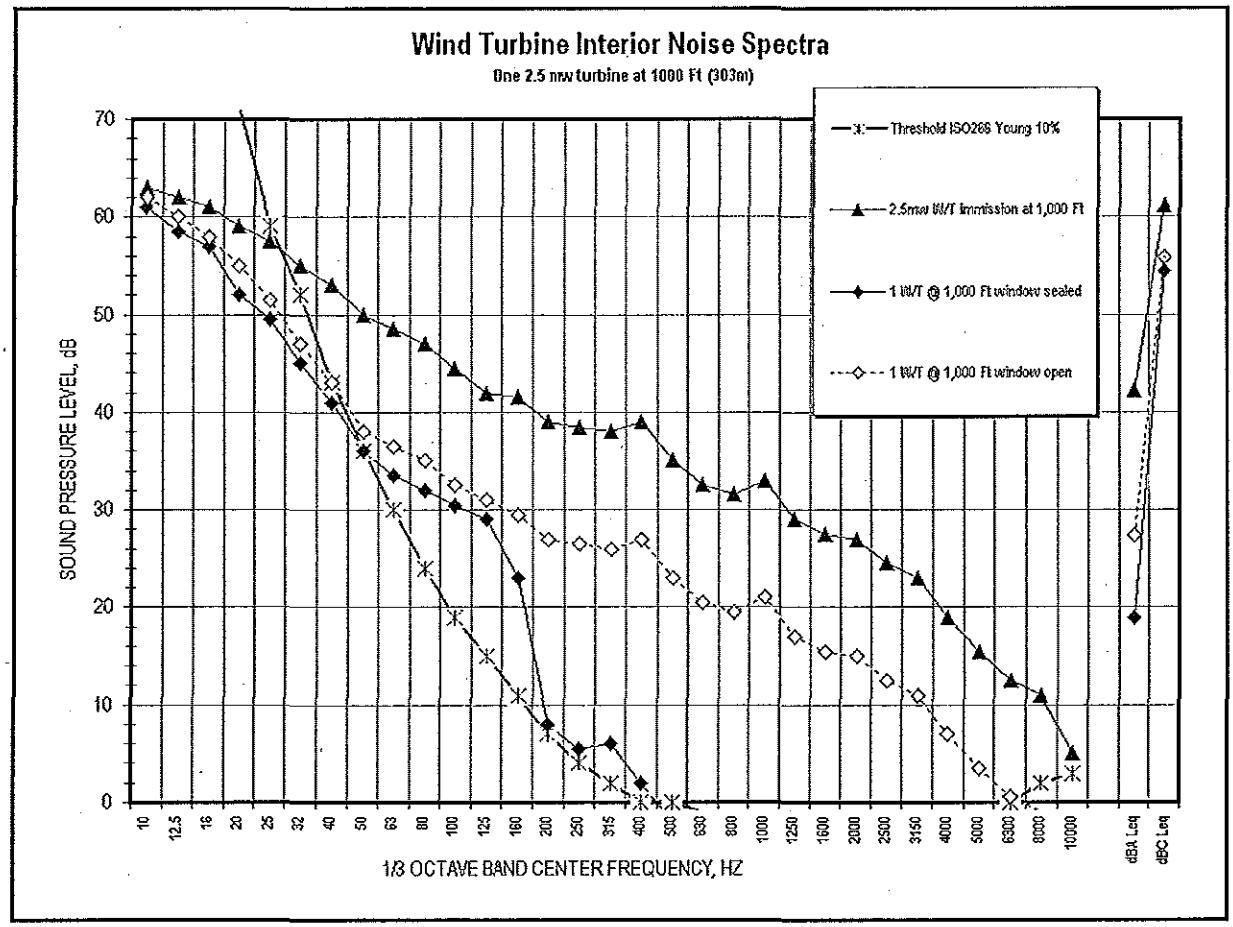

Figure 3-A Single Wind Turbine Sound Inside Home @ 1000 Feet

The usual assumption about wall and window attenuation being 15 dBA or more, which is valid for most sources of community noise, may not be sufficiently protective given the relatively high amplitude of the wind turbines' low frequency immission spectra. Figures 2 and 3 demonstrate the basis for this concern.

To demonstrate the effects of outdoor low frequency content from wind turbines we prepared Figure 1 showing the effect of a single turbine (propagation model based on sound power level test data) at 1000 feet and then in Figure 4 projected the impact of ten (10) similar turbines at one (1) mile. We applied the façade sound isolation data from the Canada Research Council to the wind turbine example used in our Noise-Con 2008 paper and shown in Figure 1 above. The graphs each show the outdoor sound pressure levels predicted for the distance of 1000 feet and one mile as the upper graph line respectively. The curve showing the threshold of human perception for sounds at each 1/3 octave band center is also plotted. When the graphs representing wind turbine sound have data points above this threshold curve the sounds will be perceptible to at least 10% of the population (which includes most children).

In addition to the top graph line representing the sounds outside the home there are two other graph lines for the sounds inside the home[15]. One curve represents the condition of no open windows and the other represents one open window.

With just one turbine at 1,000 feet there is a significant amount of low frequency noise above hearing threshold within rooms having exterior walls without windows or very well sealed windows. Even with the windows closed the sound pressure levels in the 63 Hz to 200 Hz one-octave bands still exceed the perception curve, in many cases by more than 10 dB. Note the perceptible sound between 50 and 200 Hz with a wall resonance frequency at 125 Hz (2 X 4 studs on 16 inch centers) for the "windows closed" condition. This would be perceived as a constant low rumble, which would be present inside homes whenever the turbines are operating.

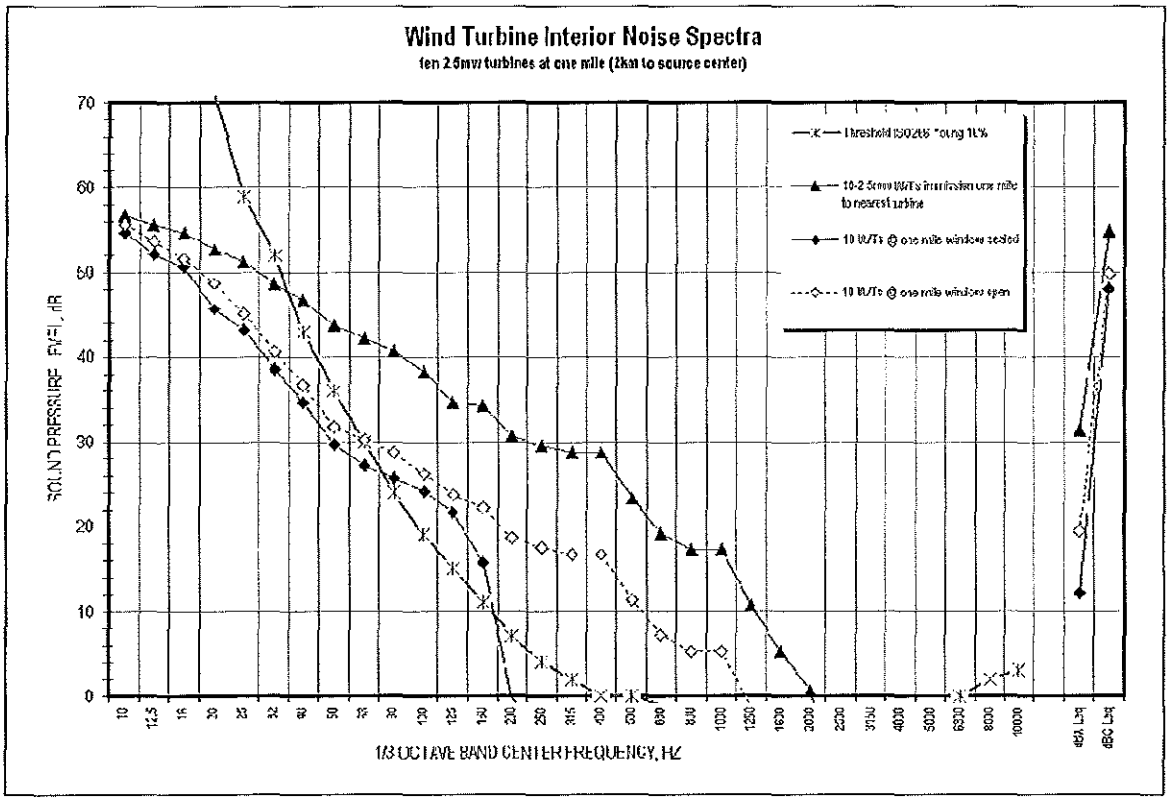

Figure 4-Sound from Ten (10) Wind Turbines inside home at One Mile

When comparing the dBC values the difference between inside sounds and outside is much less. The maximum difference in this example is only 7 dBC and that is for the situation with windows closed. With windows open the sound inside the home would be 56 dBC while it is 61 dBC outside; a difference of only 5 dBC[16],[17],[18]. If we looked only at dBA it would appear that the home's

[15] The typical wood stud exterior used in modern home construction is vinyl siding over 1/2 inch OSB or rigid fiberglass board applied to 2 X 4 studs with the stud space filled with thermal and 1/2 inch gypsum board applied on the exposed interior side. This has a mass of about 3-4 lbs/sq ft and low 26 STC.

[16] The basis for these predictions includes reports on aircraft sound insulation for dwellings and façade sound isolation data from the Canada Research Council.

[17] "On the sound insulation of wood stud exterior walls" by J. S. Bradley and J. S. Birta, Institute for Research in Construction, National Research Council, Montreal Road, Ottawa K1A 0R6, Canada, published: J.Acoust. Soc. Am. 110 (6), December 2001

walls and roof provide a reduction of 15 dBA or more. But, that that would be misleading because it ignores the effects of low frequency sound.

We next increased the number of 2.5 Mw turbines from one to ten and moved the receiver one mile from the closest turbine. We assumed the acoustic center for the ten turbines to be 2km (1-1/4 miles) from the receiver. These results are presented in Figure 4. We were surprised to find that the one mile low frequency results are only 6.3 dB below the 1,000 foot one turbine example.

There is one other characteristic of wind turbine sound that increases the sleep disturbance potential above that of other long-term noise sources. The amplitude modulation of the sound emissions from the wind turbines create a repetitive rise and fall in sound levels synchronized to the blade rotation speed. Many common weather conditions increase the magnitude of amplitude modulation. Most of these occur at night. The graph in Figure 5 shows this effect in the first floor bedroom of a farm home in the U.K. The home is located 930 meters (3,050 feet) from the nearest turbine. The conditions documented by an independent acoustical consultant show the sound level varying over 9 dBA range from 28 to 37 dBA. The pattern repeats approximately every second often for hours at a time. For many people, especially seniors, children and those with pre-existing medical conditions, this represents a major challenge to restful sleep.

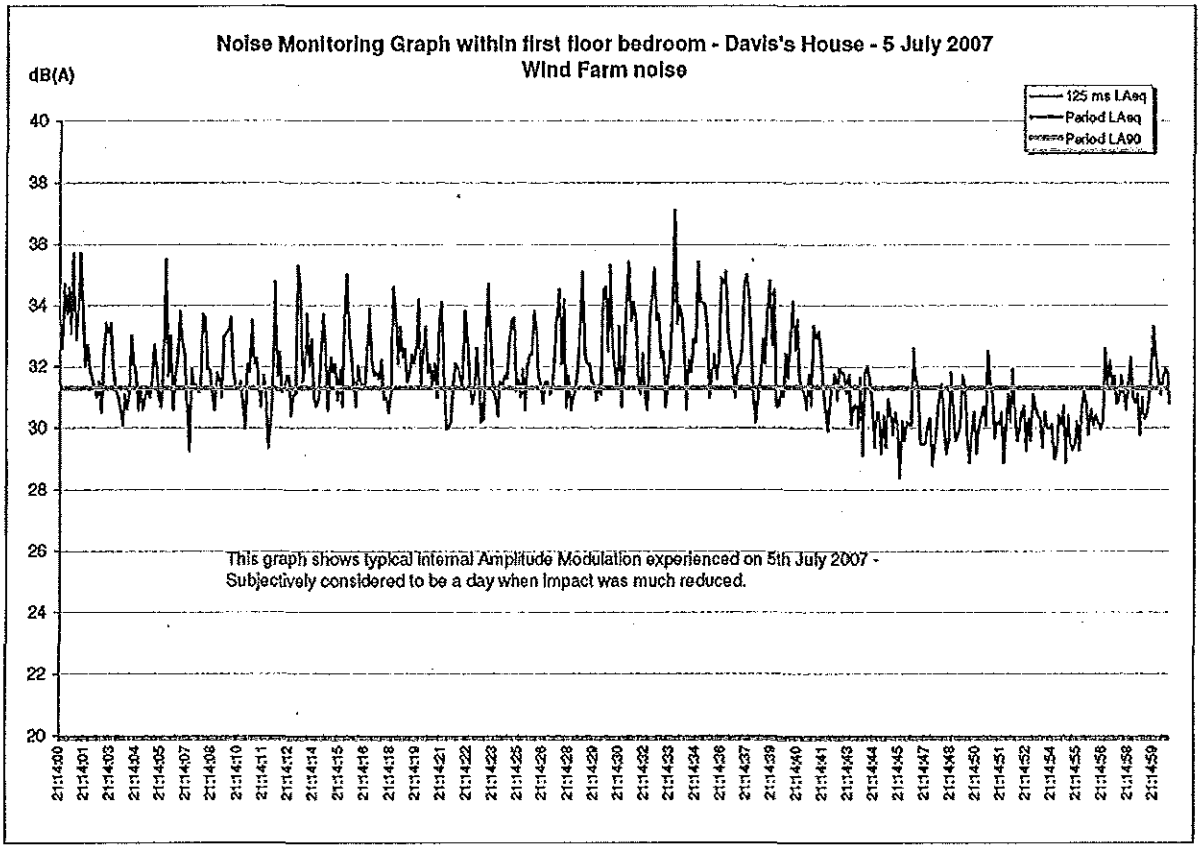

Figure 5- Amplitude modulation in a home 930 meters (3000 feet) from the nearest turbine.[19]

This may explain why some residents as far as two (2) miles from a wind farm find the wind turbines sounds highly annoying. It also demonstrates the primary reason why relying on dBA

[18] Dan Hoffmeyer, Birger Plovsing: "Low Frequency Noise from Large Wind Turbines, Measurements of Sound Insulation of Facades." Journal no. AV 1097/08, Client: Danish Energy Authority, Amaliegade 44, 1256 Copenhagen

[19] This chart used with permission of Mike Stigwood, MIOA, FRSH, MAS Environmental, U.K. and the Davis family.

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alone will not work for community noise criteria. It is the low frequency phenomena associated with wind turbine emissions that makes the dBC test criteria an important part of the proposed criteria[20].

III. Development of Siting Criteria

Basis For Using L_{A90} To Determine Pre-Construction Long-Term Background Sound

We began our research into guidelines for proper siting by reviewing guidelines used in other countries to limit WT sound emissions. A recent compendium of these standards was presented in the report "Wind Turbine Facilities Noise Issues."[21] We found common ground in many of them. Some set explicit not-to-exceed sound level limits, for example, in Germany, 40 dBA nighttime in residential areas and 35 dBA nighttime in rural and other noise-sensitive areas. Other countries use the existing background sound levels for each community as the basis for establishing the sound level limits for the WES project. This second method has the advantage of adjusting the allowable limits for various background soundscapes. It makes use of a standard method for assessing background sound levels by measuring over a specified period of observation to determine the sound level exceeded 90% of the time (L_{90}) during the night. The night is important because it is the most likely time for sleep disturbance. Then, using the background sound level as the base, the WES project is allowed to increase it by 5 dBA. It is this second method (L_{90} + 5 dBA) that was adopted for the criteria in this document. It has the advantage of adjusting the criteria for each community without the need for tables of allowable limits for different community types. The focus is only on the nighttime criteria. This is because the WES will operate 24 hours a day and the nighttime limits will be the controlling limits whether or not there are other limits for daytime.

Wind turbine noise is more annoying than other noises and needs lower limits

Since many rural communities are very quiet, it is possible that some will have L_{90} values of 25 dBA or lower. This may seem extreme when compared to limits usually imposed on other sources of community noise. However, wind turbine sounds are not comparable to the more common noise sources of vehicles, aircraft, rail, and industry. Several studies have shown that annoyance to wind turbine sounds begins at levels as low as 30 dBA.[22] This is especially true in quiet rural communities that have not had previous experience with industrial noise sources. This increased sensitivity may be due to the periodic 'swoosh' from the blades in the quiet rural soundscape, or it may be more complex. In either case, it is a legitimate response to wind turbine sound documented in peer-reviewed research.

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[20] Hessler Jr., George F., "Proposed criteria in residential communities for low-frequency noise emissions from industrial sources," 52(4), 179-185, (July-Aug 2004)

[21] Ramani Ramakrishnan, Ph.D., P. Eng., "Wind Turbine Facilities Noise Issues," December 2007. Prepared for the Ontario Ministry of Environment.

[22] Eja Pedersen, "Human response to wind turbine noise: perception, annoyance and moderating factors." Dissertation, Occupational and Environmental Medicine, Department of Public Health and Community Medicine, Goteborg University, Goteborg, Sweden, 2007, and

Van den Berg F, Pedersen E, Bouma J, and Bakker R, Wind Farm Perception, Final Report Project no. 044628, University of Gothenburg and Medical Center Groningen, Netherlands June 3, 2008

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Noise criteria need to take into account low frequency noise

In the table to the right are a series of observations and recommendations by the World Health Organization (WHO) supporting the need for stricter limits when there is substantial low frequency content in outdoor sound. Our review of other studies, and our own measurements, has demonstrated that wind turbine sound includes considerable low frequency content. We include a dBC limit in our guidelines to address the WHO recommendation that when low frequency sound may be present, criteria based on measurements using a C-weighting filter on the sound level meter (dBC) are needed in addition to dBA criteria.

The World Health Organization recognizes the special place of low frequency noise as an environmental problem. Its publication "Community Noise" (Berglund et al., 2000) makes a number of references to low frequency noise, some of which are as follows:

- "It should be noted that low frequency noise... can disturb rest and sleep even at low sound levels.
- For noise with a large proportion of low frequency sounds a still lower guideline (than 30dBA) is recommended.
- When prominent low frequency components are present, noise measures based on A-weighting are inappropriate.
- Since A-weighting underestimates the sound pressure level of noise with low frequency components, a better assessment of health effects would be to use C-weighting.
- It should be noted that a large proportion of low frequency components in a noise may increase considerably the adverse effects on health."

WHO also states: "The evidence on low frequency noise is sufficiently strong to warrant immediate concern."

Available at http://www.who.int/docstore/peh/noise/guidelines2.html, References found at pages ix, xii through xv and others.

IV. Proposed Sound Limits

The simple fact that so many residents complain of low frequency noise from wind turbines is clear evidence that the single A-weighted (dBA) noise descriptor used in most jurisdictions for siting turbines is not adequate. The only other simple audio frequency weighting that is standardized and available on sound level meters is C-weighting or dBC. A standard sound level meter set to measure dBA is increasingly less sensitive to low frequency below 500 Hz (one octave above middle-C). The same sound level meter set to measure dBC is equally sensitive to all frequencies above 32 Hz (lowest note on grand piano). It is generally accepted that dBC readings are more predictive of perceptual loudness than dBA readings if low frequency sounds are significant.

We are proposing to use the commonly accepted dBA criteria that is based on the pre-existing background sound levels allowing the wind turbine development to increase this by 5 dB (e.g. L_{90A} +5) by the audible sounds from wind turbines. According to the New York State Energy Research & Development Authority:

- "... A change in sound level of 5 dB will typically result in a noticeable community response; and
- "... A 10 dB increase is subjectively heard as an approximate doubling in loudness, and almost always causes an adverse community response." [23]

To address the lower frequencies that are not considered in A-weighted measurements we are proposing to add limits based on dBC that follow the same scheme as used for dBA limits. The Proposed Sound Limits are presented in the text box at the end of this section.

For the current industrial grade wind turbines in the 1.5 to 3 MWatt (or over) range, the addition of the dBC requirement may result in an increased distance between wind turbines and the nearby

[23] (*Wind Energy Development: A Guide for Local Authorities in New York*; page 30; New York State Energy Research & Development Authority, Albany, NY October 2002)

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residents. For the conditions shown in Figure 1, the distances would need to be increased significantly. This would result in setbacks in the range of 1 km or greater for the current generation of wind turbines if they are to be located in rural areas with little or no low frequency sound from man-made noise sources and where the L_{A90} background sound levels are 30 dBA or lower. In areas with higher background sound levels, turbines could be located somewhat closer, but still at a distance greater than the 305 m (1000 ft.) or smaller setbacks commonly seen in U.S. based wind turbine standards set by many states and used for wind turbine developments.

Following are some additional Questions and Answers that summarize the major points of this discussion relevant to criteria.

What are the typical wind farm noise immission criteria or standards? Limits are not consistent and may vary even within a particular country. Examples are listed above in the section on Results of Literature and Sound Studies.

What is a reasonable wind farm sound immission limit to protect the health of residences? We are proposing a not-to-exceed immission limit of 35 L_{Aeq} and a site-specific limit of L_{A90} + 5 dBA at the closest property line, whichever is exceeded first. We also propose the use of C-weighted criteria to address complaints of wind turbine low frequency noise. For the C-weighted criteria, we propose a site-specific limit of L_{C90} + 5 dBC. We also require that the site-specific L_{Ceq} (dBC) sound level at a receiving property line not exceed the pre-existing L_{A90} dB background sound level + 5dB by more than 20 dB. In other words, the dBC operating immission limit (as L_{Ceq}) at the receiving property line should not be more than 20 dB above the measured dBA (as L_{A90}) pre-construction long-term background sound level + 5dB.[24] This criterion prevents an Immission Spectra Imbalance that often leads to complaints about rumble or other low frequency problems. We also include a not-to-exceed immission limit of 55 and 60 L_{Ceq} at the receiving property line.[25] Use of the multiple metrics and weightings will address the audible and inaudible low frequency portions of wind turbine sound emissions. Exceedances of any of the limits establish non-compliance.

Why should the dBC immission limit not be permitted to be more than 20 dB above the background measured L_{A90}+5 dB? The World Health Organization and others[26] have determined that if a noise has a measured difference between dBC and dBA more than 20 dB, the noise is highly likely to create an annoyance because of the low frequency component.

Isn't L_{A90} the <u>minimum</u> background noise level? Not exactly. This is the sound level that represents the quietest 10% of the time. It is often considered to be the sound level that represents the sounds one hears late in the evening or at night when there are no near-by or short term sounds present. It is very important to establish this "long term background" noise environment at the property line for a potentially impacted residence (L_{A90}) during the **quietest** sleeping hours of the night, between 10 p.m. and 4 a.m.. Why? Because nighttime sleep disturbance has generated the majority of wind farm noise complaints throughout the world those conditions should guide the design of wind projects. ANSI standards define the "long term background sound" as excluding all short term sounds from the test sample using carefully selected sampling times and conditions using ten (10) minute long samples. This means that nature sounds not present during all seasons and wind noise are not to be included in the measurement. Following the procedures in ANSI S12.9, Part 3 for long term background sound the L_{A90} and L_{C90} can be measured with one or more 10-minute

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[24] Hessler Jr., George F., Proposed criteria in residential communities for low-frequency noise emissions from industrial sources, Noise Control Engineering Journal; 52(4), pg. 180 in "2. Purpose of Proposed Criteria," (July-Aug 2004)

[25] Ibid, pg. 180 in "3. Proposed Criteria."

[26] Ibid

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measurements during any night when the atmosphere is classified as stable with a light wind from the area of the proposed wind farm. The basis for the immission limits for the proposed wind farm would then be the Nighttime Immission Limits, which we propose to be the minimum ten (10) minute nighttime L_{A90} and L_{C90} plus 5 dB, a test for Spectra Imbalance, and not-to-exceed limits for the period of 10 p.m. to 7 a.m. Daytime Limits (7 a.m. to 10 p.m.) could be set using daytime measurements, but unless the wind utility only operates during the day, the nighttime limit will always be the limiting sound level. Thus, daytime limits are not normally needed.

A nearby industrial scale wind utility meeting these noise immission criteria would occasionally be audible to the residents during nighttime and daytime. However, it would be unlikely for it to be an indoor problem.

The method used for establishing the background sound level at a proposed wind farm in many of the studies in Table 1, does not meet the requirements set by ANSI S12.9 Part 3 for outdoor measurements and determination of long-term background sound levels. Instead, they use unattended noise monitors to record hundreds of 10-minute or one-hour un-observed measurements that include the short term sounds from varying community and wind conditions over a period of days or weeks. The results for daytime and nighttime are usually combined to determine the average wind noise at the microphone as a function of wind velocity measured at a height of ten (10) meters. This provides an enormous amount of data, but the results have little relationship to wind turbine sound immissions or to potential for turbine noise impacts on nearby residents. They also do not comply with ANSI standards for methodology or quality and as such are not suitable for use in measurements that will be used to assess compliance with other standards and guidelines. This exhaustive exercise often only demonstrates how much 'pseudo-noise' is generated by instruments located in a windy environment that exceeds the capability of the instrument's wind screen to protect the microphone. In many cases, this unqualified data is used to support a claim that the wind noise masks the turbines' sound immissions.

The major complaints of residents living near wind farms is sleep disruption at night when there is little or no wind near ground level and the wind turbines located at a much higher elevation are turning and generating near or at maximum power and maximum noise emission. There is usually more surface wind and turbulence during daytime caused by solar radiation. Thus, the use of averaged data involving one or more 24-hour periods is of little value in predicting conditions that will result in people who cannot sleep in their homes during the night because of loud intrusive wind turbine noise.

The methodology used to predict the sound propagation from the turbines into the community also fails to represent the conditions of maximum turbine noise impact on nearby residents. This should be expected given the limitations of models based on ISO 9613-2[27]. They also do not consider the effects of a frequent nighttime condition when winds at the ground are calm and the winds at the hub are at or above nominal operating speed. This condition is often referred to as a "stable" atmosphere. During this condition, the wind turbines can be producing the maximum or near maximum power while the wind at ground level is calm and the background noise level is low. The Michigan rural night test data in the earlier figure shows how quiet a night can be in the absence of wind at the ground. This common condition is known to directly cause chronic sleep

[27] The ISO 9613-2 sound propagation model formulas have known errors of 3 dB even when the conditions being modeled are a perfect match to the limiting conditions specified in the standard. Wind turbines operate far outside the limits for wind speed, height of the noise source above the ground, and other factors identified in the standard thus increasing the likelihood for error above the specified 3 dB. In addition, there are known measurement errors in the IEC61400-11 test that add another 2 dB of uncertainty to the model's predictions.

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disruption. Further, the studies report average sound levels and do not disclose the effects of amplitude modulation or low frequency sound which makes the turbine's sound more objectionable and likely to cause sleep problems.

Are there additional noise data to be recorded for a pre-wind turbine noise survey near selected dwellings? Yes. The precision measuring sound level meter(s) need to be programmed to include measurement of L_{Aeq}, L_{A10}, L_{A90}, L_{Ceq}, L_{C10}, and L_{C90}, with starting time and date for each 10-minute sample. The L_{10} results will be used to validate the L_{90} data. For example, on a quiet night one might expect L_{10} and L_{90} to show similar results within 5 to 10 dB between L_{10} and L_{90} for each weighting scale. On a windy night or one with nearby short term noise sources the difference between L_{10} and L_{90} may be more than 20 dB. There is also often a need to obtain a time-averaged, one-third octave band analysis over the frequency range from 6.3 Hz to 10 kHz during the same ten minute sample. The frequency analysis is very helpful for identifying and correcting for extraneous sounds such as interfering insect noise. An integrating averaging sound level meter meeting ANSI or IEC Type 1 standards has the capability to perform all of the above acoustic measurements simultaneously and store the results internally. There is also a requirement for measurement of the wind velocity near the sound measurement microphone continuously throughout each 10-minute recorded noise sample. The 10-minute maximum wind speed near the microphone must be less than 2 m/s (4.5 mph) during measurements of background noise (L_{90}), and the maximum wind speed for noise measurements during turbine operation must be less than 4 m/s (9 mph). Measurements should be observed (without contaminating the data) and notes identifying short-term noises should be taken for these tests.

Is there a need to record weather data during the background noise recording survey? One weather monitor is required at the proposed wind farm on the side nearest the residents. The weather station sensors are at the standard 10 meter height above ground. It is critical that the weather be recorded every 10 minutes, synchronized with the clocks in the sound level recorders without ambiguity, at the start and end time of each 10 minute period. The weather station should record wind speed and direction, temperature, humidity and rain.

Why do Canada and some other countries base the permitted wind turbine noise immission limits on the operational wind velocity at the 10m height wind speed instead of a maximum dBA or L_{90} + 5 dBA immission level? First, it appears that the wind turbine industry will take advantage of every opportunity to elevate the maximum permitted noise immission level to reduce the setback distance from the nearby dwellings. Including wind as a masking source in the criteria is one method for elevating the permissible limits. The background noise level does indeed increase with surface wind speed. When this happens, it can be argued that the increased wind noise provides some masking of wind turbine noise. However, this is not true if the surface winds are calm. After sunset, when the ground cools (e.g. in the middle of the night), the lower level atmosphere can separate from the higher-level atmosphere. Then, the winds at the ground will be calm while wind at the turbine hub is very strong. Under this condition, the wind velocity at a 10-meter high wind monitoring station (such as those often used for weather reporting) may be ¼ to ½ the speed of the wind at the hub, yet drop to calm at ground level. The result is that no ground level wind noise is present to mask the sound of the wind turbines, which can be operating at or close to full capacity.

This condition is one of the major causes of wind turbine related noise complaints for residents within 3 km (1.86 miles) of a wind farm. When the turbines are producing high sound levels, it is quiet outside the surrounding homes. The PhD thesis of G.P. van den Berg, *The Sounds of High*

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Winds, is very enlightening on this issue (Table 3). See also the letter by John Harrison in Ontario "On Wind Turbine Guidelines.[28]"

What sound monitor measurements would be needed for enforcement of the wind turbine sound ordinance? A similar set of sound tests using the ten (10) minute series of measurements would be repeated, with and without the operation of the wind turbines, at the location where noise was measured before construction, which is closest to the resident registering the wind turbine noise complaint. If the nighttime background (L_{90}) noise level (turbines off) was found to be slightly higher than the measured background prior to the wind farm installation, then the results with the turbines operating must be corrected using standard acoustical engineering methods to determine compliance with the pre-turbine established sound limits.

Who should conduct the sound measurements? An independent acoustics expert should be retained who reports to the County Board or other responsible governing body. This independent acoustics expert should be responsible for all the acoustic measurements including setup and calibration of instruments and interpretation of recorded results. He or she should perform all pre-turbine background noise measurements and interpretation of results to establish the nighttime (and daytime, if applicable) industrial wind turbine sound immission limits, and to monitor compliance.

At present, the acoustical consultants are retained by, and work directly for, the wind farm developers. This presents a serious problem with conflict of interest on the part of the consultants. The wind farm developer would like to show that a significant amount of wind noise is present to mask the sounds of the wind turbine immissions. The community is looking for authentic results showing that the wind turbine noise will be only barely perceptible, and then only occasionally, during the night or daytime.

Is frequency analysis required either during the pre-construction background noise survey or for compliance measurements? Normally one-third octave or narrower band analysis would only be required if there is a complaint of tones immission from the wind farm. Although only standardized dBA and dBC measurements are required to meet the proposed criteria, the addition of one-third octave band analysis is often useful to validate the dBA and dBC results.

The following summarizes the criteria necessary when siting wind turbines to minimize the risk of adverse impacts from noise on the adjacent community[29]. For those not familiar with acoustical annotation the table and its formulas may seem overly complex, but the criteria are defined in this manner to be as unambiguous as possible. They will be clear for those who are familiar with acoustical terminology. Definitions are provided in a later section of this essay.

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[28] Harrison, J., *Wind Turbine Guidelines*, available at http://amherstislandwindinfo.com/

[29] The authors have based these criteria, procedures, and language on their current understanding of wind turbine sound emissions, land-use compatibility, and the effects of sound on health. However, use of the following, in part or total, by any party is strictly voluntary and the user assumes all risks. Please seek professional assistance in applying the recommendations of this document to any specific community or WES development.

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NOISE CRITERIA FOR SITING WIND TURBINES TO PREVENT HEALTH RISKS[29]

1. Establishing Long-Term Background Noise Level

a. Instrumentation: ANSI or IEC Type 1 Precision Integrating Sound Level Meter plus meteorological instruments to measure wind velocity, temperature and humidity near the sound measuring microphone. Measurement procedures must meet ANSI S12.9, Part 3 except as noted in Section 4. below.

b. Measurement location(s): Nearest property line(s) from proposed wind turbines representative of all non-participating residential property within 2.0 miles.

c. Time of measurements and prevailing weather: The atmosphere must be classified as stable with no vertical heat flow to cause air mixing. Stable conditions occur in the evening and middle of the night with a clear sky and very little wind near the surface. Sound measurements are only valid when the measured wind speed at the microphone is less than 2 m/s (4.5 mph).

d. Long-Term Background sound measurements: All data recording shall be a series of contiguous ten (10) minute measurements. The measurement objective is to determine the quietest ten minute period at each location of interest. Nighttime test periods are preferred unless daytime conditions are quieter. The following data shall be recorded simultaneously for each ten (10) minute measurement period: dBA data includes L_{A90}, L_{A10}, L_{Aeq} and dBC data includes L_{C90}, L_{C10}, and L_{Ceq}. Record the maximum wind speed at the microphone during the ten minutes, a single measurement of temperature and humidity at the microphone for each new location or each hour whichever is oftener shall also be recorded. A ten (10) minute measurement contains valid data provided: Both L_{A10} minus L_{A90} and L_{C10} minus L_{C90} are not greater than 10 dB and the maximum wind speed at the microphone is less than 2 m/s during the same ten (10) minute period as the acoustic data.

2. Wind Turbine Sound Immission Limits

No wind turbine or group of turbines shall be located so as to cause wind turbine sound immission at any location on non-participating property containing a residence in excess of the limits in the following table:

Table of Not-To-Exceed Property Line Sound Immission Limits [1]			
Criteria	**Condition**	**dBA**	**dBC**
A	Immission above pre-construction background:	$L_{Aeq}=L_{A90}+5$	$L_{Ceq}=L_{C90}+5$
B	Maximum immission:	35 L_{Aeq}	55 L_{Ceq} for quiet[2] rural environment 60 L_{Ceq} for rural-suburban environment
C	Immission spectra imbalance	L_{Ceq} (immission) minus (L_{A90} (background) +5) $\leq$ 20 dB	
D	Prominent tone penalty:	5 dB	5 dB
Notes			
1	Each Test is independent and exceedances of any test establishes non-compliance. Sound "immission" is the wind turbine noise emission as received at a property.		
2	A "Quiet rural environment" is a location >2 miles from a major transportation artery without high traffic volume during otherwise quiet periods of the day or night.		
3	Prominent tone as defined in IEC 61400-11. This Standard is not to be used for any other purpose.		

[1] Procedures provided in Section 7. Measurement Procedures (ANSI 12.9 Part 3 with Amendments) of the most recent version of "**The How To Guide To Siting Wind Turbines To Prevent Health Risks From Sound**" by Kamperman and James and the apply to this table.

3. Wind Farm Noise Compliance Testing

All of the measurements outlined above in 1. Establishing Nighttime Background Noise Level must be repeated to determine compliance with 2. Wind Turbine Sound Immission Limits. The compliance test location is to be the pre-turbine background noise measurement location nearest to the home of the complainant in line with the wind farm and nearer to the wind farm. The time of day for the testing and the wind farm operating conditions plus wind speed and direction must replicate the conditions that generated the complaint. Procedures of ANSI S12.9- Part 3 apply except as noted in Section 4. The effect of instrumentation limits for wind and other factors must be recognized and followed.

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4. ANSI S12.9 Part 3 Selected Options and Requirement Amendments

For measurements taken to assess the preceding criteria specific options provided for in ANSI S12.9-Part 3 (2008) shall be followed along with any additional requirements included below:

5.2 Background Sound: Use definition (1): 'long-term'

5.2 long-term background sound: The L_{90} excludes short term background sounds

5.3 basic measurement period: Ten (10) minutes $L_{90(10\ min)}$

5.6 Sound Measuring Instrument: Type 1 Precision meeting ANSI S1.43 or IEC 61672-1. The sound level meter shall cover the frequency range from 6.3 Hz to 20k Hz and simultaneously measure dBA L_N and dBC L_N. The instrument must also be capable of accurately measuring low-level background sounds down to 20 dBA.

6.5 Windscreen: Required

6.6(a) An anemometer accurate to ± 10% at 2m/s to full-scale accuracy. The anemometer shall be located 1.5 to 2 meters above the ground and orientated to record maximum wind velocity. The maximum wind velocity, wind direction, temperature and humidity shall be recorded for each ten (10) minute sound measurement period observed within 5 m. of the measuring microphone.

7.1 Long-term background sound

7.2 Data collection Methods: Second method with observed samples to avoid contamination by short term sounds (purpose: to avoid loss of statistical data)

8. Source(s) Data Collection: All requirements in ANSI S12.18 Method #2, Precision to the extent possible while still permitting testing of the conditions that lead to complaints. The meteorological requirements in ANSI S12.18 may not be applicable for some complaint tests. For sound measurements in response to a complaint, the compliance sound measurements should be made under conditions that replicate the conditions that caused the complaint without exceeding instrument and windscreen limits and tolerances.

8.1(b) Measuring microphone with windscreen shall be located 1.2m to 1.8m (1.5 preferred) above the ground and greater than 8 m. from large sound reflecting surface.

8.3(a) All meteorological observations required at both (not either) microphone and nearest 10 m. weather reporting station.

8.3(b) For a ten (10) minute background sound measurement to be valid the wind velocity shall be less then 2m/s (4.5 mph) measured less than 5 m. from the microphone. Compliance sound measurements shall be taken when winds are less than 4m/s at the microphone.

8.3(c) In addition to the required acoustic calibration checks, the sound measuring instrument internal noise floor, including microphone, must also be checked at the end of each series of ten minute measurements and no less frequently than once per day. Insert the microphone into the acoustic calibrator with the calibrator signal off. Record the observed dBA and dBC reading on the sound level meter to determine an approximation of the instrument self noise. Perform this test before leaving the background measurement location. The calibrator-covered microphone must demonstrate the results of this test are at least 5 dB below the immediately previous ten (10) minute acoustic test results, for the acoustic background data to be valid. This test is necessary to detect undesired increase in the microphone and sound level meter internal self-noise. As a precaution sound measuring instrumentation should be removed from any air conditioned space at least an hour before use. Nighttime measurements are often performed very near the meteorological dew point. Minor moisture condensation inside a microphone or sound level meter can increase the instrument self noise and void the measured background data.

8.4 The remaining sections, starting at 8.4 in ANSI S12.9 Part 3 Standard do not apply.

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V. How to Include the Recommended Criteria in Ordinances and/or Community Noise Limits

The following two sections present the definitions, technical requirements, and complaint resolution processes that support the recommended criteria. Following the formal elements is a section discussing the measurement procedures and requirements for enforcement of these criteria. For the purpose of the following sections the government authority will be referred to as the Local Government Authority (LGA) as a place marker for State, County, Township or other authorized authority. The abbreviation 'WES' is used for industrial scale wind energy system.

The authors have based these criteria, procedures, and language on their current understanding of wind turbine sound emissions, land-use compatibility, and the effects of sound on health. However, use of the following, in part or total, by any party is strictly voluntary and the user assumes all risks. Please seek professional assistance in applying the recommendations of this document to any specific community or WES development.

VI. ELEMENTS OF A WIND ENERGY SYSTEMS LICENSING ORDINANCE FOR SOUND

I. Purpose and Intent.

Based upon the findings stated above, it is the intended purpose of the LGA to regulate Wind Energy Systems to promote the health, safety, and general welfare of the citizens of the Town and to establish reasonable and uniform regulations for the operation thereof so as to control potentially dangerous effects of these Systems on the community.

II. Definitions.

The following terms have the meanings indicated:

"Aerodynamic Sound" means a noise that is caused by the flow of air over and past the blades of a WES.

"Ambient Sound" Ambient sound encompasses all sound present in a given environment, being usually a composite of sounds from many sources near and far. It includes intermittent noise events, such as, from aircraft flying over, dogs barking, wind gusts, mobile farm or construction machinery, and the occasional vehicle traveling along a nearby road. The ambient also includes insect and other nearby sounds from birds and animals or people. The near-by and transient events are part of the ambient sound environment but are not to be considered part of the long-term background sound.

"American National Standards Institute (ANSI)" Standardized acoustical instrumentation and sound measurement protocol shall meet all the requirements of the following ANSI Standards:

ANSI S1.43 Integrating Averaging Sound Level Meters: Type-1 (or IEC 61672-1)

ANSI S1.11 Specification for Octave and One-third Octave-Band Filters (or IEC 61260)

ANSI S1.40 Verification Procedures for Sound Calibrators

ANSI S12.9 Part 3 Procedures for Measurement of Environmental Sound

ANSI S12.18 Measurement of Outdoor Sound Pressure Level

IEC 61400-11 Wind turbine generator systems –Part 11: Acoustic noise measurements

"Anemometer" means a device for measuring the speed and direction of the wind.

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"**Applicant**" means the individual or business entity that seeks to secure a license under this section of the Town municipal code.

"**A-Weighted Sound Level (dBA)**" A measure of over-all sound pressure level designed to reflect the response of the human ear, which does not respond equally to all frequencies. It is used to describe sound in a manner representative of the human ear's response. It reduces the effects of the low with respect to the frequencies centered around 1000 Hz. The resultant sound level is said to be "A-weighted" and the units are "dBA." Sound level meters have an A-weighting network for measuring A-weighted sound levels (dBA) meeting the characteristics and weighting specified in ANSI Specifications for Integrating Averaging Sound Level Meters, S1.43-1997 for Type 1 instruments and be capable of accurate readings (corrections for internal noise and microphone response permitted) at 20 dBA or lower. In this document dBA means L_{Aeq} unless specified otherwise.

"**Background Sound (L_{90})**" refers to the sound level present at least 90% of the time. Background sounds are those heard during lulls in the ambient sound environment. That is, when transient sounds from flora, fauna, and wind are not present. Background sound levels vary during different times of the day and night. Because WES operates 24/7 the background sound levels of interest are those during the quieter periods which are often the evening and night. Sounds from the WES of interest, near-by birds and animals or people must be excluded from the background sound test data. Nearby electrical noise from streetlights, transformers and cycling AC units and pumps etc must also be excluded from the background sound test data.

Background sound level (dBA and dBC (as L_{90})) is the sound level present 90% of the time during a period of observation that is representative of the quiet time for the soundscape under evaluation and with duration of ten (10) continuous minutes. Several contiguous ten (10) minute tests may be performed in one hour to determine the statistical stability of the sound environment. Measurement periods such as at dusk when bird and insect activity is high or the early morning hours when the 'dawn chorus' is present are not acceptable measurement times. Longer term sound level averaging tests, such as 24 hours or multiple days are not at all appropriate since the purpose is to define the quiet time background sound level. It is defined by the $L_{A\,90}$ and $L_{C\,90}$ descriptors. It may be considered as the quietest one (1) minute during a ten (10) minute test. $L_{A\,90}$ results are valid only when $L_{A\,10}$ results are no more than 10 dB above $L_{A\,90}$ for the same period. $L_{C\,10}$ less $L_{C\,90}$ are not to exceed 10 dB to be valid.

The background noise environment consists of a multitude of distant sources of sound. When a new nearby source is introduced the new background noise level would be increased. The addition of a new source with a noise level 10 below the existing background would increase the new background 0.4 dB. If the new source has the same noise level as the existing background then the new background is increased 3.0 dB. Lastly, if the new source is 3.3 dB above the existing background then the new background would have increased 5 dB. For example, to meet the requirement of L_{90A} + 5 dB = 31 dBA if the existing quiet nighttime background sound level is 26 dBA, the maximum wind turbine noise immission contribution independent of the background cannot exceed 29.3 dBA L_{eq} at a dwelling. When adding decibels, a 26 dBA background combined with 29.3 dBA from the turbines (without background) results in 31 dBA.

Further, background L_{90} sound levels documenting the pre-construction baseline conditions should be determined when the ten (10) minute maximum wind speed is less than 2 m/s (4.5 mph) near ground level/microphone location 1.5 m height.

"**Blade Passage Frequency**" (BPF) means the frequency at which the blades of a turbine pass a particular point during each revolution (e.g. lowest point or highest point in rotation) in terms of

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events per second. A three bladed turbine rotating at 28 rpm would have a BPF of 1.4 Hz. [E.g. ((3 blades times 28rpm)/60 seconds per minute = 1.4 Hz BPF)]

"**C-Weighted Sound Level (dBC)**" Similar in concept to the A-Weighted sound Level (dBA) but C-weighting does not de-emphasize the frequencies below 1k Hz as A-weighting does. It is used for measurements that must include the contribution of low frequencies in a single number representing the entire frequency spectrum. Sound level meters have a C-weighting network for measuring C-weighted sound levels (dBC)meeting the characteristics and weighting specified in ANSI S1.43-1997 Specifications for Integrating Averaging Sound Level Meters for Type 1 instruments. In this document dBC means L_{Ceq} unless specified otherwise.

"**Decibel (dB)**" A dimensionless unit which denotes the ratio between two quantities that are proportional to power, energy or intensity. One of these quantities is a designated reference by which all other quantities of identical units are divided. The sound pressure level (Lp) in decibels is equal to 10 times the logarithm (to the base 10) of the ratio between the pressure squared divided by the reference pressure squared. The reference pressure used in acoustics is 20 MicroPascals.

"**Emission**" Sound energy that is emitted by a noise source (wind farm) is transmitted to a receiver (dwelling) where it is immitted (see "immission).

"**Frequency**" The number of oscillations or cycles per unit of time. Acoustical frequency is usually expressed in units of Hertz (Hz) where one Hz is equal to one cycle per second.

"**Height**" means the total distance measured from the grade of the property as existed prior to the construction of the wind energy system, facility, tower, turbine, or related facility at the base to its highest point.

"**Hertz (Hz)**" Frequency of sound expressed by cycles per second.

"**Immission**" Noise immitted at a receiver (dwelling) is transmitted from noise source (wind turbine) that emitted sound energy (see "emission").

"**Immission spectra imbalance**" The spectra are not in balance when the C-weighted sound level is more than 20 dB greater than the A-weighted sound level. For the purposes of this requirement, the A-weighted sound level is defined as the long-term background sound level (L_{A90}) +5 dBA. The C-weighted sound level is defined as the L_{Ceq} measured during the operation of the wind turbine operated so as to result in its highest sound output. A Complaint test provided later in this document is based on the immission spectra imbalance criteria.

"**Infra-Sound**" sound with energy in the frequency range of 0-20 Hz is considered to be infra-sound. It is normally considered to not be audible for most people unless in relatively high amplitude. However, there is a wide range between the most sensitive and least sensitive people to perception of sound and perception is not limited to stimulus of the auditory senses. The most significant exterior noise induced dwelling vibration occurs in the frequency range between 5 Hz and 50 Hz. Moreover, levels below the threshold of audibility can still cause measurable resonances inside dwelling interiors. Conditions that support or magnify resonance may also exist in human body cavities and organs under certain conditions. Although no specific test for infrasound is provided in this document, the test for immission spectra imbalance will limit low frequency sound and thus, indirectly limit infrasound. See low-frequency noise (LFN) for more information.

"**Low Frequency Noise (LFN)**" refers to sounds with energy in the lower frequency range of 20 to 200 Hz. LFN is deemed to be excessive when the difference between a C-weighted sound level and an A-weighted sound level is greater than 20 decibels at any measurement point outside a residence or

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other occupied structure. The criteria for this condition is the "Immission Spectra Imbalance" entry in the **Table of Not-To-Exceed Property Line Sound Immission Limits."**

"**Measurement Point (MP)**" means location where sound measurements are taken such that no significant obstruction blocks sound from the site. The Measurement Point should be located so as to not be near large objects such as buildings and in the line-of-sight to the nearest turbines. Proximity to large buildings or other structures should be twice the largest dimension of the structure, if possible. Measurement Points should be at quiet locations remote from street lights, transformers, street traffic, flowing water and other local noise sources.

"**Measurement Wind Speed**" For measurements conducted to establish the background noise levels ($L_{A90\,10\,min}$, $L_{C90\,10\,min}$, and etc.) the maximum wind speed, sampled within 5m of the microphone and at its height, shall be less than 2 m/s (4.5 mph) for valid background measurements. For valid wind farm noises measurements conducted to establish the post-construction sound level the maximum wind speed, sampled within 5m of the microphone and at its height, shall be less than 4m/s (9 mph). The wind speed at the WES blade height shall be at or above the nominal rated wind speed and operating in its highest sound output mode. For purposes of enforcement, the wind speed and direction at the WES blade height shall be selected to reproduce the conditions leading to the enforcement action while also restricting maximum wind speeds at the microphone to less than 4 m/s (9 mph).

For purposes of models used to predict the sound levels and sound pressure levels of the WES to be submitted with the Application, the wind speed shall be the speed that will result in the worst-case L_{Aeq} and L_{Ceq} sound levels at the nearest non-participating properties to the WES. If there may be more than one set of nearby sensitive receptors, models for each such condition shall be evaluated and the results shall be included in the Application.

"**Mechanical Noise**" means sound produced as a byproduct of the operation of the mechanical components of a WES(s) such as the gearbox, generator and transformers.

"**Noise**" means any unwanted sound. Not all noise needs to be excessively loud to represent an annoyance or interference.

"**Project Boundary**" means the external property boundaries of parcels owned by or leased by the WES developers. It is represented on a plot plan view by a continuous line encompassing all WES(s) and related equipment associated with the WES project.

"**Property Line**" means the recognized and mapped property parcel boundary line.

"**Qualified Independent Acoustical Consultant**" Qualifications for persons conducting baseline and other measurements and reviews related to the application for a WES or for enforcement actions against an operating WES include, at a minimum, demonstration of competence in the specialty of community noise testing. An example is a person with Full Membership in the Institute of Noise Control Engineers (INCE). There are scientists and engineers in other professional fields that have been called upon by their local community for help in the development of a WES Noise Ordinance. Many of these scientists and engineers have recently spent hundreds of hours learning many important aspects of noise related to the introduction of WES into their communities. Then with field measurement experience with background data and wind turbine noise emission, they have become qualified independent acoustical consultants for WES siting. Certifications such as Professional Engineer (P.E.) do not test for competence in acoustical principles and measurement and are thus not, without further qualification, appropriate for work under this document. The Independent Qualified Acoustical Consultant can have no financial or other connection to a WES developer or related company.

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"**Sensitive Receptor**" means places or structures intended for human habitation, whether inhabited or not, public parks, state and federal wildlife areas, the manicured areas of recreational establishments designed for public use, including but not limited to golf courses, camp grounds and other nonagricultural state or federal licensed businesses. These areas are more likely to be sensitive to the exposure of the noise, shadow or flicker, etc. generated by a WES or WESF. These areas include, but are not limited to: schools, daycare centers, elder care facilities, hospitals, places of seated assemblage, non-agricultural businesses and residences.

"**Sound**" A fluctuation of air pressure which is propagated as a wave through air

"**Sound Power**" The total sound energy radiated by a source per unit time. The unit of measurement is the watt. Abbreviated as L_w. This information is determined for the WES manufacturer under laboratory conditions specified by IEC 61400-11 and provided to the local developer for use in computer model construction. There is known measurement error in this test procedure that must be disclosed and accounted for in the computer models. Even with the measurement error correction it cannot be assumed that the reported L_w values represent the highest sound output for all operating conditions. They reflect the operating conditions required to meet the IEC 61400-11 requirements. The lowest frequency is 50 Hz for acoustic power (L_w) requirement (at present) in IEC 61400-11. This Ordinance requires wind turbine certified acoustic power (L_w) levels at rated load for the total frequency range from 6.3 Hz to 10k Hz in one-third octave frequency bands tabulated to the nearest 1 dB. The frequency range of 6.3 Hz to 10k Hz shall be used throughout this Ordinance for all sound level modeling, measuring and reporting.

"**Sound Pressure**" The instantaneous difference between the actual pressure produced by a sound wave and the average or barometric pressure at a given point in space.

"**Sound Pressure Level (SPL)**" 20 times the logarithm, to the base 10, of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micronewtons per square meter. In equation form, sound pressure level in units of decibels is expressed as SPL (dB) = 20 log p/pr.

"**Spectrum**" The description of a sound wave's resolution into its components of frequency and amplitude. The WES manufacturer is required to supply a one-third octave band frequency spectrum of the wind turbine sound emission at 90% of rated power. The published sound spectrum is often presented as A-weighted values but C-weighted values are preferred. This information is used to construct a model of the wind farm's sound immission levels at locations of interest in and around the WES. The frequency range of interest for wind turbine noise is approximately 6 Hz to 10k Hz.

"**Statistical Noise Levels**" Sounds that vary in level over time, such as road traffic noise and most community noise, are commonly described in terms of the statistical exceedance levels L_{NA}, where L_{NA} is the A-weighted sound level exceeded for N% of a given measurement period. For example, L_{10} is the noise level exceeded for 10% of the time. Of particular relevance, are: L_{A10} and L_{C10} the noise level exceed for 10% of the ten (10) minute interval. This is commonly referred to as the average maximum noise level. L_{A90} and L_{C90} are the A-weighted and C-weighted sound levels exceeded for 90% of the ten (10) minute sample period. The L_{90} noise level is defined by ANSI as the long-term background sound level (i.e. the sounds one hears in the absence of the noise source under consideration and without short term or near-by sounds from other sources), or simply the "background level." L_{eq} is the A or C-weighted equivalent noise level (the "average" noise level). It is defined as the steady sound level that contains the same amount of acoustical energy as the corresponding time-varying sound.

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"**Tonal sound or tonality**" Tonal audibility. A sound for which the sound pressure is a simple sinusoidal function of the time, and characterized by its singleness of pitch. Tonal sound can be simple or complex.

"**Wind Energy Systems (WES)**" means equipment that converts and then transfers energy from the wind into usable forms of electrical energy.

"**Wind Turbine" or "Turbine" (WT)** means an industrial scale mechanical device which captures the kinetic energy of the wind and converts it into electricity. The primary components of a wind turbine are the blade assembly, electrical generator and tower.

III. APPLICATION PROCEDURE FOR WIND ENERGY SYSTEMS AND TECHNICAL REQUIREMENTS FOR LICENSING

This ordinance is intended to promote the safety and health of the community through criteria limiting sound emissions during operation of Wind Energy Systems. It is recognized that the requirements herein are neither exclusive, nor exhaustive. In instances where a health or safety concern is known to the wind project developer or identified by other means with regard to any application for a Wind Energy System, additional and/or more restrictive conditions may be included in the license to address such concerns. All rights are reserved to impose additional restrictions as circumstances warrant. Such additional or more restrictive conditions may include, without limitation (a) greater setbacks, (b) more restrictive noise limitations, or (c) limits restricting operation during night time periods or for any other conditions deemed reasonable to protect the community.

A. Application

Any Person desiring to secure a Wind Energy Systems license shall file an application form provided by the LGA Clerk, together with two additional copies of the application with the LGA Clerk.

B. Information to be submitted with Application

1. Information regarding the:

- Make and model of all turbines potentially used in this project,
- Sound Power Levels (L_w) for each 1/3 octave band from 6.3 Hz to 10,000 Hz, and
- A sound propagation model predicting the sound levels immitted into the community computed using at minimum 1/1 octave band sound power levels to compute the L_{Ceq} and L_{Aeq} levels to generate L_{Aeq} and L_{Ceq} contours in 5 dB increments overlaying an aerial view and property survey map from the WES property out to a distance to include all residential property within two (2) miles of the WES Property. Appropriate corrections for model algorithm error, IEC61400-11 test measurement accuracy, and directivity patterns of for each model of WT shall be disclosed and accounted for in the model(s). Predictions shall be made at all property lines within and outward for two (2) miles from the project boundary for the wind speed, direction and operating mode that would result in the worst case WT nighttime sound emissions.

The prediction model shall assume that the winds at hub height are sufficient for the highest sound emission operating mode. The projection shall include a description of all assumptions made in the model's construction and algorithms. If the model does not consider the effects of wind direction, geography of the terrain, and/or the effects of reinforcement from coherent sounds or tones from

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the turbines all these items should be identified and all other means used to adjust the model's output to account for these factors. The results shall be displayed as a contour map of the predicted levels as over-all L_{Aeq} and L_{Ceq} contours out to 2 miles from the WES property, and shall also include a table showing the 1/3 or 1/1 octave band sound pressure as L_{Ceq} levels for the nearest property line(s) for sensitive receptor sites (including residences) within the model's boundaries. The predicted values must include the over-all sound levels and 1/1 or 1/3 octave band sound pressure levels from 6 Hz to 10k Hz in data tables that include the location of each receiving point by GPS location or other repeatable means.

C. Preconstruction Background Noise Survey

1. The Town reserves the right to require the preparation of (a) a preconstruction noise survey for each proposed Wind Turbine location conducted per procedures provided in the section on Measurement Procedures showing long-term background L_{A90} and L_{C90} sound levels. This must be completed and accepted prior to approval of the final layout and issuance of project permits.

    a. If any proposed wind farm project locates a WES within two miles of a sensitive receptor these studies are mandatory. The preconstruction baseline studies shall be conducted by an Independent Qualified Acoustical Consultant selected and hired by the LGA.

    b. The applicant shall be responsible for paying the consultant's fees and costs associated with conducting the study. These fees and cost shall be negotiated with the consultant and determined prior to any work being done on the study. The applicant shall be required to set aside 100% of these fees in an escrow account managed by the LGA, before the study is commenced by the consultant. Payment for this study does not require the WES developer's acceptance of the study's results.

    c. If the review shows that the predicted L_{Aeq} and L_{Ceq} sound levels exceed any of the criteria specified in the **Table of Not-To-Exceed Property Line Sound Immission Limits** then the application cannot be approved.

2. The LGA will refer the application to the LGA engineer (if qualified in acoustics) or an independent qualified acoustical consultant for further review and comparison of the long-term background sound levels against the predicted L_{Aeq} and L_{Ceq} sound levels reported for the model using the criteria in the **Table of Not-To-Exceed Property Line Sound Immission Limits.** The reasonably necessary costs associated with such a review shall be the responsibility of the applicant, in accord with the terms of this ordinance.

D. Post Construction Noise Measurement Requirements

1. **Sound Regulations Compliance:** A WES shall be considered in violation of the conditional use permit unless the applicant demonstrates that the project complies with all sound level limits using the procedures specified in this ordinance. Sound levels in excess of the limits established in this ordinance shall be grounds for the LGA to order immediate shut down of all non-compliant WT units.

2. **Post-Construction Sound Measurements:** Within twelve months of the date when the project is fully operational, and within four weeks of the anniversary date of the pre-construction background noise measurements, repeat the existing sound environment measurements taken before the project approval. Post-construction sound level measurements shall be taken both with all WES's running and with all WES's off. At the discretion of the Town, the Pre-construction background sound levels (L_{A90} and L_{C90}) can be substituted for the "all WES off' tests if a random sampling of 10% of the pre-construction study sites shows that background L_{90A} and L_{90C} conditions have increased less than 3 dB from those measured under the pre-

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construction nighttime conditions. The post-construction measurements will be reported to the LGA (available for public review) using the same format as used for the preconstruction sound studies. Post-construction noise studies shall be conducted by a firm chosen and hired by the LGA. Costs of these studies are to be reimbursed by the Licensee in a similar manner to that described above. The wind farm developer's may ask to have its own consultant observe the publicly retained consultant at the convenience of the latter. The WES Licensee shall provide all technical information and wind farm data required by the qualified independent acoustical consultant before, during, and/or after any acoustical studies required by this document and for acoustical measurements.

3. Sound Limits

1. Establishing Long-Term Background Sound Level

a. Instrumentation: ANSI or IEC Type 1 Precision Integrating Sound Level Meter plus meteorological instruments to measure wind velocity, temperature and humidity near the sound measuring microphone. Measurement procedures must meet ANSI S12.9, Part 3 and Measurement Procedures Appendix to Ordinance following next Section.

b. Measurement location(s): Nearest property line(s) from proposed wind turbines representative of all non-participating residential property within 2.0 miles.

c. Time of measurements and prevailing weather: The atmosphere must be classified as stable with no vertical heat flow to cause air mixing. Stable conditions occur in the evening and middle of the night with a clear sky and very little wind near the surface. Sound measurements are only valid when the measured maximum wind speed at the microphone must be less than 2 m/s (4.5 mph).

d. Long-Term Background sound measurements: All data recording shall be a series of contiguous ten (10) minute measurements. The measurement objective is to determine the quietest ten minute period at each location of interest. Nighttime test periods are preferred unless daytime conditions are quieter. The following data shall be recorded simultaneously for each ten (10) minute measurement period: dBA data includes L_{A90}, L_{A10}, L_{Aeq} and dBC data includes L_{C90}, L_{C10}, and L_{Ceq}. The maximum wind speed at the microphone during the ten minutes, a single measurement of temperature and humidity at the microphone for each new location or each hour whichever is oftener shall also be recorded. A ten (10) minute measurement contains valid data provided: Both L_{A10} minus L_{A90} and L_{C10} minus L_{C90} are not greater than 10 dB and the maximum wind speed at the microphone is less than 2 m/s during the same ten (10) minute period as the acoustic data.

2. Wind Turbine Sound Immission Limits

No wind turbine or group of turbines shall be located so as to cause wind turbine sound immission at any location on non-participating property containing a residence in excess of the limits in the following table:

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Table of Not-To-Exceed Property Line Sound Immission Limits [1]			
Criteria	**Condition**	**dBA**	**dBC**
A	Immission above pre-construction background:	$L_{Aeq} = L_{A90} + 5$	$L_{Ceq} = L_{C90} + 5$
B	Maximum immission:	35 L_{Aeq}	55 L_{Ceq} for quiet[2] rural environment 60 L_{Ceq} for rural-suburban environment
C	Immission spectra imbalance (C - A $\leq$ 20dB)	L_{Ceq} (immission) minus (L_{A90} (background) +5 dB) $\leq$ 20 dB	
D	Prominent tone penalty:	5 dB	5 dB
Notes			
1	Each Test is independent and exceedances of any test establishes non-compliance Sound "immission" is the wind turbine sound emission as received at a property.		
2	A "quiet rural environment" is a location 2 miles from a major transportation artery without high traffic volume during otherwise quiet periods of the day or night.		
3	Prominent tone as defined in IEC 61400-11. This Standard is not to be used for any other purpose.		
[1] Required Procedures provided in VIII Reference Standards including ANSI 12.9 Part 3 as Amended			

3. Wind Farm Noise Compliance Testing

All of the measurements outlined above in 1. Establishing Long Term Background Noise Level must be repeated to determine compliance with 2. Wind Turbine Sound Immission Limits. The compliance test location is to be the pre-turbine background noise measurement location nearest to the home of the complainant in line with the wind farm and nearer to the wind farm. The time of day for the testing and the wind farm operating conditions plus wind speed and direction must replicate the conditions that generated the complaint. Procedures of ANSI S12.9- Part 3 apply as amended in the Appendix to Ordinance. The effect of instrumentation limits for wind and other factors must be recognized and followed.

3. Operations

The WES/WT is non-compliant and must be shut down immediately if it exceeds any of the limits in the **Table of Not-To-Exceed Property Line Sound Immission Limits.**

4. Complaint Resolution

1. The owner/operator of the WES shall respond within five (5) business days after notified of a noise complaint by any property owner within the project boundary and a one-mile radius beyond the project boundary.
2. The tests shall be performed by a qualified independent acoustical consultant acceptable to the complainant and the local agency charged with enforcement of this ordinance.
3. Testing shall commence within ten (10) working days of the request. If testing cannot be initiated within ten (10) days, the WES(s) in question shall be shut down until the testing can be started.
4. A copy of the test results shall be sent to the property owner, and the LGA's Planning or Zoning department within thirty (30) days of test completion.
5. If a Complaint is made, the presumption shall be that it is reasonable. The LGA shall undertake an investigation of the alleged operational violation by a qualified individual mutually acceptable to the LGA.

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a) The reasonable cost and fees incurred by the LGA in retaining said qualified individual shall be reimbursed by the owner of the WESF.

b) Funds for this assessment shall be paid or put into an escrow account prior to the study and payment shall be independent of the study findings.

6. After the investigation, if the LGA reasonably concludes that operational violations are shown to be caused by the WESF, the licensee/operator/owner shall use reasonable efforts to mitigate such problems on a case-by-case basis including such measures as not operating during the nighttime or other noise sensitive period if such operation was the cause of the complaints.

5. Reimbursement of Fees and Costs.

Licensee/operator/owner agrees to reimburse the LGA 's reasonable fees and costs incurred in the preparation, negotiation, administration and enforcement of this Ordinance, including, without limitation, the LGA 's attorneys' fees, engineering and/or consultant fees, LGA meeting and hearing fees and the costs of public notices. If requested by the LGA the funds shall be placed in an escrow account under the management of the LGA. The preceding fees are payable within thirty (30) days of invoice. Unpaid invoices shall bear interest at the rate of 1% per month until paid. The LGA may recover all reasonable costs of collection, including attorneys' fees.

VII. MEASUREMENT PROCEDURES

SUPPLEMENT TO WIND ENERGY SYSTEMS LICENSING ORDINANCE FOR SOUND

I. Introduction

The potential impact of sound and sound induced building vibration associated with the operation of wind powered electric generators is often a primary concern for citizens living near proposed wind energy systems (WES(s)). This is especially true of projects located near homes, residential neighborhoods, businesses, schools, and hospitals in quiet residential and rural communities. Determining the likely sound and vibration impacts is a highly technical undertaking and requires a serious effort in order to collect reliable and meaningful data for both the public and decision makers.

This protocol is based in part on criteria published in American National Standards S12.9 -Part 3 Quantities and Procedures for Description and Measurement of Environmental Sound, and S12.18 and for the measurement of sound pressure level outdoors.

The purpose is to first, establish a consistent and scientifically sound procedure for evaluating existing background levels of audible and low frequency sound in a WES project area, and second to use the information provided by the Applicant in its Application showing the predicted over-all sound levels in terms of L_{Aeq} and L_{Ceq} and 1/3 or 1/1 octave bands as part of the required information submitted with the application.

The over-all values shall be presented as overlays to the applicant's iso-level plot plan graphics and, for 1/1 or 1/3 octave data, in tabular form with location information sufficient to permit comparison of the baseline results to the predicted levels. This comparison will use the level limits of the ordinance to determine the likely impact operation of a new wind energy system project will have on the existing community soundscape. If the comparison demonstrates that the WES project will not exceed any of the level limits the project will be considered to be within allowable limits for safety and health. If the Applicant submits only partial information required for this comparison

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the application cannot be approved. In all cases the burden to establish the operation as meeting safety and health limits will be on the Applicant.

Next, it covers requirements for the sound propagation model to be supplied with the application.

Finally, if the project is approved, this section covers the study needed to compare the post-build sound levels to the predictions and the baseline study. The level limits in the ordinance apply to the post-build study. In addition, if there have been any complaints about WES sound or low frequency noise emissions or wind turbine noise induced dwelling vibration by any resident of an occupied dwelling that property will be included in the post-build study for evaluation against the rules for sound level limits and compliance.

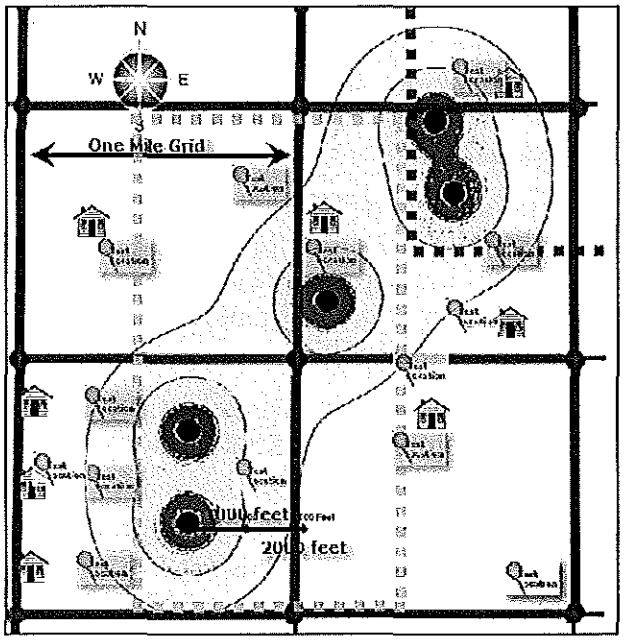
The characteristics of the proposed WES project and the features of the surrounding environment will influence the design of the sound and vibration study. Site layout, types of WES(s) selected and the existence of other significant local audible and low frequency sound sources and sensitive receptors should be taken into consideration when designing a sound study. The work will be performed by a qualified independent acoustical consultant for both the pre-construction background and post-construction sound studies as described in the body of the ordinance.

II. Instrumentation

All instruments and other tools used to measure audible, inaudible and low frequency sound shall meet the requirements for ANSI or IEC Type 1 Integrating Averaging Sound Level Meter Standards The principle standard reference for this document is ANSI 12.9/Part 3 with important additional specific requirements for the measuring instrumentation and measurement protocol.

III. Measurement of Pre-Construction Sound Environment (Base-line)

An assessment of the proposed WES project areas existing sound environment is necessary in order to predict the likely impact resulting from a proposed project. The following guidelines must be used in developing a reasonable estimate of an area's existing background sound environment. All testing is to be performed by an independent qualified acoustical consultant approved by the LGA as provided in the body of the ordinance. The WES applicant may file objections detailing any concerns it may have with the LGA's selection. These concerns will be addressed in the study. Objections must be filed prior to the start of the noise study. All measurements are to be conducted with ANSI or IEC Type 1 certified and calibrated test equipment per reference specification at the end of this section. Test results will be reported to the LGA or its appointed representative.



Sites with No Existing Wind Energy Systems (Base-line Sound Study)

Sound level measurements shall be taken as follows:

The results of the model showing the predicted worst case L_{Aeq} and L_{Ceq} sound emissions of the proposed WES project will be overlaid on a map (or separate L_{Aeq} and L_{Ceq} maps) of the project area. An example (right) shows an approximately two (2) mile square section with iso-level contour lines prepared by the

applicant, sensitive receptors (homes) and locations selected for the baseline sound tests whichever are the controlling metric. The test points shall be located at the property line bounding the property of the turbine's host closest to the wind turbine. Additional sites may be added if appropriate. A grid comprised of one (1) mile boundaries (each grid cell is one (1) square mile) should be used to assist in identifying between two (2) to ten (10) measurement points per cell. The grid shall extend to a minimum of two (2) miles beyond the perimeter of the project boundary. This may be extended to more than two (2) miles at the discretion of the LGA. The measurement points shall be selected to represent the noise sensitive receptor sites based on the anticipated sound propagation from the combined WT in the project. Usually, this will be the closest WT. If there is more than one WT near-by then more than one test site may be required.

The intent is to anticipate the locations along the bounding property line that will receive the highest sound immissions. The site that will most likely be negatively affected by the WES project's sound emissions should be given first priority in testing. These sites may include sites adjacent to occupied dwellings or other noise sensitive receptor sites. Sites shall be selected to represent the locations where the background soundscapes reflect the quietest locations of the sensitive receptor sites. Background sound levels (and 1/3 octave band sound pressure levels if required) shall be obtained according to the definitions and procedures provided in the ordinance and recognized acoustical testing practice and standards.

All properties within the proposed WES project boundaries will be considered for this study.

One test shall be conducted during the period defined by the months of April through November with the preferred time being the months of June through August. These months are normally associated with more contact with the outdoors and when homes may have open windows during the evening and night. Unless directed otherwise by the LGA the season chosen for testing will represent the background soundscape for other seasons. At the discretion of the LGA, tests may be scheduled for other seasons.

All measurement points (MPs) shall be located with assistance from the LGA staff and property owner(s) and positioned such that no significant obstruction (building, trees, etc.) blocks sound and vibration from the nearest proposed WES site.

Duration of measurements shall be a minimum of ten (10) continuous minutes for all criteria at each location. The duration must include at least six (6) minutes that are not affected by transient sounds from near-by and non-nature sources. Multiple ten (10) minute samples over longer periods such as 30 minutes or one (1) hour may be used to improve the reliability of the L_{A90} and L_{C90} values. The ten (10) minute sample with the lowest valid L_{90} values will be used to define the background sound.

The tests at each site selected for this study shall be taken during the expected 'quietest period of the day or night' as appropriate for the site. For the purpose of determining background sound characteristics the preferred testing time is from 10pm until 4 am. If circumstances indicated that a different time of the day should be sampled the test may be conducted at the alternate time if approved by the Town.

Sound level measurements shall be made on a weekday of a non-holiday week. Weekend measurements may also be taken at selected sites where there are weekend activities that may be affected by WT sound.

Measurements must be taken with the microphone at 1.2 to 1.5 meters above the ground and at least 15 feet from any reflective surface following ANSI 12.9 Part 3 protocol including selected options and other requirements outlined later in this Section.

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Reporting

1. For each Measurement Point and for each qualified measurement period, provide each of the following measurements:

a. L_{Aeq}, L_{A10}, and L_{A90}, and

b. L_{Ceq} , L_{C10}, and L_{C90}

2. A narrative description of any intermittent sounds registered during each measurement. This may be augmented with video and audio recordings.

3. A narrative description of the steady sounds that form the background soundscape. This may be augmented with video and audio recordings.

4. Wind speed and direction at the microphone (Measurement Point), humidity and temperature at time of measurement will be included in the documentation. Corresponding information from the nearest 10 meter weather reporting station shall also be obtained.

Measurements taken only when wind speeds are less than 2m/s (4.5 mph) at the microphone location will be considered valid for this study. A windscreen of the type recommended by the monitoring instrument's manufacturer must be used for all data collection.

5. Provide a map and/or diagram clearly showing (Using plot plan provided by LGA or Applicant):

- The layout of the project area, including topography, the project boundary lines, and property lines.
- The locations of the Measurement Points.
- The distance between any Measurement Points and the nearest WT(s).
- The location of significant local non-WES sound and vibration sources.
- The distance between all MPs and significant local sound sources. And,
- The location of all sensitive receptors including but not limited to: schools, day-care centers, hospitals, residences, residential neighborhoods, places of worship, and elderly care facilities.

Sites with Existing Wind Energy Systems

Two complete sets of sound level measurements must be taken as defined below:

1. One set of measurements with the wind generator(s) off unless the LGA elects to substitute the sound data collected for the background sound study. Wind speeds must be suitable for background sound tests as specified elsewhere in this ordinance.

2. One set of measurements with the wind generator(s) running with wind speed at hub height sufficient to meet nominal rated power output or higher and less than 2 m/s below at the microphone location. Conditions should reflect the worst case sound emissions from the WES project. This will normally involve tests taken during the evening or night when winds are calm (less than 2m/sec) at the ground surface yet, at hub height, sufficient to power the turbines.

Sound level measurements and meteorological conditions at the microphone shall be taken and documented as discussed above.

Sound level Estimate for Proposed Wind Energy Systems (when adding more WT to existing project)

In order to estimate the sound impact of the proposed WES project on the existing environment an estimate of the sound produced by the proposed WES(s) under worst-case conditions for

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producing sound emissions must be provided. This study may be conducted by a firm chosen by the WES operator with oversight provided by the LGA.

The qualifications of the firm should be presented along with details of the procedure that will be used, software applications, and any limitations to the software or prediction methods as required elsewhere in this ordinance for models.

Provide the manufacturer's sound power level (L_{Aw}) and (L_{Cw}) characteristics for the proposed WES(s) operating at full load utilizing the methodology in IEC 61400-11 Wind Turbine Noise Standard. Provide one-third octave band sound power level information from 6.3 Hz to 10k Hz. Furnish the data using no frequency weighting. A-weighted data is optional. Provide sound pressure levels predicted for the WES(s) in combination and at full operation and at maximum sound power output for all areas where the predictions indicate L_{Aeq} levels of 30 dBA and above. The same area shall be used for reporting the predicted L_{Ceq} levels. Contour lines shall be in increments of 5 dB.

Present tables with the predicted sound levels for the proposed WES(s) as L_{Aeq} and L_{Ceq} and at all octave band centers (8 Hz to 10k Hz) for distances of 500, 1000, 1500, 2000, 2500 and 5000 feet from the center of the area with the highest density of WES(s). For projects with multiple WES(s), the combined sound level impact for all WES(s) operating at full load must be estimated.

The above tables must include the impact (increased dBA and dBC (L_{eq}) above baseline L_{90} background sound levels) of the WES operations on all residential and other noise sensitive receiving locations within the project boundary. To the extent possible, the tables should include the sites tested (or likely to be tested) in the background study.

Provide a contour map of the expected sound level from the new WES(s), using 5dB L_{Aeq} and L_{Ceq} increments created by the proposed WES(s) extending out to a distance of two (2) miles from the project boundary, or other distance necessary, to show the 25 L_{Aeq} and 50 L_{Ceq} boundaries.

Provide a description of the impact of the proposed sound from the WES project on the existing environment. The results should anticipate the receptor sites that will be most negatively impacted by the WES project and to the extent possible provide data for each MP that are likely to be selected in the background sound study (note the sensitive receptor MPs):

1. Report expected changes to existing sound levels for L_{Aeq} and L_{A90}
2. Report expected changes to existing sound levels for L_{Ceq} and L_{C90}
3. Report the expected changes to existing sound pressure levels for each of the 1/1 or 1/3 octave bands in tabular form from 8 Hz to 10k Hz.
4. Report all assumptions made in arriving at the estimate of impact, any limitations that might cause the sound levels to exceed the values of the estimate, and any conclusions reached regarding the potential effects on people living near the project area. If the effects of coherence, worst case weather, or operating conditions are not reflected in the model a discussion of how these factors could increase the predicted values is required.
5. Include an estimate of the number of hours of operation expected from the proposed WES(s) and under what conditions the WES(s) would be expected to run. Any differences from the information filed with the Application should be addressed.

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IV. Post-Construction Measurements

Post Construction Measurements should be conducted by a qualified noise consultant selected by and under the direction of the LGA. The requirements of this Appendix for Sites with Existing Wind Energy Systems shall apply

1. Within twelve months of the date when the project is fully operational, preferably within two weeks of the anniversary date of the pre-construction background sound measurements, repeat the measurements. Post-construction sound level measurements shall be taken both with all WES(s) running and with all WES(s) off except as provided in this ordinance.

2. Report post-construction measurements to the LGA using the same format as used for the background sound study.

VIII. REFERENCE Standards and ANSI S12.9 Part 3 with Required Amendments

ANSI/ASA S12.9-1993/Part 3 (R2008) - American National Standard Quantities and Procedures for Description and Measurement of Environmental Sound, Part 3: Short-Term Measurements with an Observer Present.

This standard is the second in a series of parts concerning description and measurement of outdoor environmental sound. The standard describes recommended procedures for measurement of short-term, time-average environmental sound outdoors at one or more locations in a community for environmental assessment or planning for compatible land uses and for other purposes such as demonstrating compliance with a regulation. These measurements are distinguished by the requirement to have an observer present. Sound may be produced by one or more separate, distributed sources of sound such as a highway, factory, or airport. Methods are given to correct the measured levels for the influence of background sound.

Wind Turbine Siting Acoustical Measurements
ANSI S12.9 Part 3 Selected Options and Requirement Amendments

For the purposes of this ordinance specific options provided in ANSI S12.9-Part 3 (2008) shall apply with the additional following requirements to Sections in ANSI S12.9/Part 3:

5.2 background sound: Use definition (1) 'long-term'
5.2 long-term background sound: The L_{90} excludes short term background sounds
5.3 basic measurement period: Ten (10) minutes $L_{90(10\ min)}$
5.6 Sound Measuring Instrument: Type 1 Integrating Meter meeting ANSI S1.43 or IEC 61672-1. The sound level meter shall cover the frequency range from 6.3 Hz to 20k Hz and simultaneously measure dBA L_N and dBC L_N. The instrument must also be capable of accurately measuring low-level background sounds down to 20 dBA.
6.5 Windscreen: Required
6.6(a) An anemometer accurate to ± 10% at 2m/s. to full scale accuracy. The anemometer shall be located 1.5 to 2m above the ground and orientated to record maximum wind velocity. The maximum wind velocity, wind direction, temperature and humidity shall be recorded for each ten (10) minute sound measurement period observed within 5 m. of the measuring microphone..
7.1 Long-term background sound
7.2 Data collection Methods: Second method with observed samples to avoid contamination by short term sounds (purpose: to avoid loss of statistical data)
8 Source(s) Data Collection: All requirements in ANSI S12.18 Method #2 precision to the extent possible while still permitting testing of the conditions that lead to complaints. The

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meteorological requirements in ANSI S12.18 may not be applicable for some complaints. For sound measurements in response to a complaint, the compliance sound measurements should be made under conditions that replicate the conditions that caused the complaint without exceeding instrument and windscreen limits and tolerances.

8.1(b) Measuring microphone with windscreen shall be located 1.2m to 1.8m (1.5m preferred) above the ground and greater than 8m from large sound reflecting surface.

8.3(a) All meteorological observations required at both (not either) microphone and nearest 10m weather reporting station.

8.3(b) For a 10 minute background sound measurement to be valid the wind velocity shall be less then 2m/s (4.5 mph) measured less than 5m from the microphone. Compliance sound measurements shall be taken when winds shall be less than 4m/s at the microphone.

8.3(c) In addition to the required acoustic calibration checks, the sound measuring instrument internal noise floor, including microphone, must also be checked at the end of each series of ten minute measurements and no less frequently than once per day. Insert the microphone into the acoustic calibrator with the calibrator signal off. Record the observed dBA and dBC reading on the sound level meter to determine an approximation of the instrument self noise. Perform this test before leaving the background measurement location. This calibrator-covered microphone must demonstrate the results of this test are at least 5 dB below the immediately previous ten-minute acoustic test results, for the acoustic background data to be valid. This test is necessary to detect undesired increase in the microphone and sound level meter internal self-noise. As a precaution sound measuring instrumentation should be removed from any air-conditioned space at least an hour before use. Nighttime measurements are often performed very near the meteorological dew point. Minor moisture condensation inside a microphone or sound level meter can increase the instrument self noise and void the measured background data.

8.4 The remaining sections starting at 8.4 in ANSI S12.9 Part 3 Standard do not apply.

ANSI S12.18-1994 (R2004) American National Standard Procedures for Outdoor Measurement of Sound Pressure Level

This American National Standard describes procedures for the measurement of sound pressure levels in the outdoor environment, considering the effects of the ground, the effects of refraction due to wind and temperature gradients, and the effects due to turbulence. This standard is focused on measurement of sound pressure levels produced by specific sources outdoors. The measured sound pressure levels can be used to calculate sound pressure levels at other distances from the source or to extrapolate to other environmental conditions or to assess compliance with regulation. This standard describes two methods to measure sound pressure levels outdoors. METHOD No. 1: general method; outlines conditions for routine measurements. METHOD No. 2: precision method; describes strict conditions for more accurate measurements. This standard assumes the measurement of A-weighted sound pressure level or time-averaged sound pressure level or octave, 1/3-octave or narrow-band sound pressure level, but does not preclude determination of other sound descriptors.

ANSI S1.43-1997(R2007) American National Standard Specifications for Integrating Averaging Sound Level Meters

This Standard describes instruments for the measurement of frequency-weighted and time-average sound pressure levels. Optionally, sound exposure levels may be measured. This standard is consistent with the relevant requirements of ANSI S1.4-1983(R 1997) American National Standard Specification for Sound Level Meters, but specifies additional characteristics that are necessary to

measure the time-average sound pressure level of steady, intermittent, fluctuating, and impulsive sounds.

ANSI S1.11-2004 American National Standard 'Specification for Octave-Band and Fractional-Octave-Band Analog and Digital Filters'

This standard provides performance requirements for analog, sampled-data, and digital implementations of band-pass filters that comprise a filter set or spectrum analyzer for acoustical measurements. It supersedes ANSI S1.11-1986 (R1998) American National Standard Specification for Octave-Band and Fractional-Octave-Band Analog and Digital Filters, and is a counterpart to International Standard IEC 61260:1995 Electroacoustics - Octave-Band and Fractional-Octave-Band Filters. Significant changes from ANSI S1.11-1986 have been adopted in order to conform to most of the specifications of IEC 61260:1995. This standard differs from IEC 61260:1995 in three ways: (1) the test methods of IEC 61260 clauses 5 is moved to an informative annex, (2) the term 'band number,' not present in IEC 61260, is used as in ANSI S1.11-1986, (3) references to American National Standards are incorporated, and (4) minor editorial and style differences are incorporated.

ANSI S1.40-2006 American National Standard Specifications and Verification Procedures for Sound Calibrators

IEC 61400-11

Second edition 2002-12, Amendment 1 2006-05

IEC 61400-11

Second edition 2002-12, Amendment 1 2006-0

Wind turbine generator systems –Part 11: Acoustic noise measurement techniques

The purpose of this part of IEC 61400 is to provide a uniform methodology that will ensure consistency and accuracy in the measurement and analysis of acoustical emissions by wind turbine generator systems. The standard has been prepared with the anticipation that it would be applied by:

- the wind turbine manufacturer striving to meet well defined acoustic emission performance requirements and/or a possible declaration system;
- the wind turbine purchaser in specifying such performance requirements;
- the wind turbine operator who may be required to verify that stated, or required, acoustic performance specifications are met for new or refurbished units;
- the wind turbine planner or regulator who must be able to accurately and fairly define acoustical emission characteristics of a wind turbine in response to environmental regulations or permit requirements for new or modified installations.

This standard provides guidance in the measurement, analysis and reporting of complex acoustic emissions from wind turbine generator systems. The standard will benefit those parties involved in the manufacture, installation, planning and permitting, operation, utilization, and regulation of wind turbines. The measurement and analysis techniques recommended in this document should be applied by all parties to insure that continuing development and operation of wind turbines is carried out in an atmosphere of consistent and accurate communication relative to environmental concerns. This standard presents measurement and reporting procedures expected to provide accurate results that can be replicated by others.

End of Measurement Procedure

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VIII. Noise-Con 2008 Paper

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Simple guidelines for siting wind turbines to prevent health risks[30]

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Revision: 2.1[31]

Industrial scale wind turbines are a familiar part of the landscape in Europe, U.K. and other parts of the world. In the U.S., however, similar industrial scale wind energy developments are just beginning operation. The presence of industrial wind projects will increase dramatically over the next few years given the push by the Federal and state governments to promote renewable energy sources through tax incentives and other forms of economic and political support. States and local governments in the U.S. are promoting what appear to be lenient rules for how industrial wind farms can be located in communities, which are predominantly rural and often very quiet. Studies already completed and currently in progress describe significant health effects associated with living in the vicinity of industrial grade wind turbines. This paper reviews sound studies conducted by consultants for governments, the wind turbine owner, or the local residents for a number of sites with known health or annoyance problems. The purpose is to determine if a set of simple guidelines using dBA and dBC sound levels can serve as the 'safe' siting guidelines. Findings of the review and recommendations for sound limits will be presented. A discussion of how the proposed limits would have affected the existing sites where people have demonstrated pathologies apparently related to wind turbine sound will also be presented.

Background

A relatively new source of community noise is spreading rapidly across the rural U.S. countryside. Industrial grade wind turbines, a common sight in many European countries, are now being promoted by Federal and state governments as the way to minimize coal powered electrical energy and its effects on global warming. But, the initial developments using the newer 1.5 to 3 MWatt wind turbines here in the U.S. has also led to numerous complaints from

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[31] The criteria table at the end of this paper and portions of the narrative have been revised to reflect our current understanding of how to specify the sound limits with less ambiguity and to use the new format for presenting them.

residents who find themselves no longer in the quiet rural communities they were living in before the wind turbine developments went on-line. Questions have been raised about whether the current siting guidelines being used in the U.S. are sufficiently protective for the people living closest to the developments. Research being conducted into the health issues using data from established wind turbine developments is beginning to appear that supports the possibility there is a basis for the health concerns. Other research into the computer modeling and other methods used for determining the layout of the industrial wind turbine developments and the distances from residents in the adjacent communities are showing that the output of the models should not be considered accurate enough to be used as the sole basis for making the siting decisions.

The authors have reviewed a number of noise studies conducted in response to community complaints for wind energy systems sited in Europe, Canada, and the U.S. to determine if additional criteria are needed for establishing safe limits for industrial wind turbine sound immissions in rural communities. In several cases, the residents who filed the complaints have been included in studies by medical researchers who are investigating the potential health risks associated with living near industrial grade wind turbines 365 days a year. These studies were also reviewed by the authors to help in identifying what factors need to be considered in setting criteria for 'safe' sound limits at receiving properties. Due to concerns about medical privacy, details of these studies are not discussed in this paper. Current standards used in the U.S. and in most other parts of the world rely on not-to-exceed dBA sound levels, such as 50 dBA, or on not-to-exceed limits based on the pre-construction background sound level plus an adder (e.g. L_{90A} + 5 dBA).

Our review covered the community noise studies performed in response to complaints, research on health issues related to wind turbine noise, critiques of noise studies performed by consultants working for the wind developer, and research/technical papers on wind turbine sound immissions and related topics. The papers are listed in Tables 1-4.

Table 1-List of Studies Related to Complaints

Resource Systems Engineering, Sound Level Study – Ambient & Operations Sound Level Monitoring, Maine Department of Environmental Protection Order No. L-21635-26-A-N, June 2007
ESS Group, Inc., Draft Environmental Impact Statement For The Dutch Hill Wind Power Project – Town of Cohocton, NY, November 2006
David M. Hessler, Environmental Sound Survey and Noise Impact Assessment – Noble Wethersfield Wind park – Towns of Wethersfield and Eagle NY For: Noble Environmental Power, LLC January 2007
George Hessler, "Report Number 101006-1, Noise Assessment Jordanville Wind Power Project," October 2006
HGC Engineering, "Environmental Noise Assessment Pubnico Point Wind Farm, Nova Scotia, Natural Resources Canada Contract NRCAN-06-0046," August 23, 2006
John I. Walker, Sound Quality Monitoring, East Point, Prince Edward Island" by Jacques Whitford, Consultants for Prince Edward Island Energy Corporation, May 28, 2007

Table 2- List of Studies related to Health

Nina Pierpont, "Wind Turbine Syndrome – Abstract" from draft article and personal conversations. www.ninapierpont.com
Nina Pierpont, "Letter from Dr. Pierpont to a resident of Ontario, Canada, re: Wind Turbine Syndrome," Autumn 2007
Amanda Harry, "Wind Turbine Noise and Health" (2007)
Barbara J. Frey and Peter J. Hadden, "Noise Radiation from Wind Turbines Installed Near Homes, Effects on Health" (2007)
Eja Pedersen, "Human response to wind turbine noise – Perception, annoyance and moderating factors, Occupational and Environmental Medicine," The Sahlgrenska Academy, Gotenborg 2007
Robin Phipps, "In the Matter of Moturimu Wind Farm Application, Palmerston North, Australia," March 2007
WHO European Centre for Environment and Health, Bonn Office, "Report on the third meeting on night noise guidelines," April 2005

Table 3-List of Studies that review Siting Impact Statements

Richard H. Bolton, "Evaluation of Environmental Noise Analysis for 'Jordanville Wind Power Project,'" December 14, 2006 Rev 3.
Clifford P. Schneider, "Accuracy of Model Predictions and the Effects of Atmospheric Stability on Wind Turbine Noise at the Maple Ridge Wind Power Facility," Lowville, NY – 2007

Table 4-List of Research and Technical papers included in review process

Anthony L. Rogers, James F. Manwell, Sally Wright, "Wind Turbine Acoustic Noise," Renewable Energy Research Laboratory, Dept. of ME and IE, U of Mass, Amherst, amended June 2006
ISO. 1996. Acoustics - Attenuation of sound during propagation outdoors - Part 2: General method of calculation. International Organization of Standardization. ISO 9613-2. p. 18.
G.P. van den Berg, "The Sounds of High Winds – the effect of atmospheric stability on wind turbine sound and microphone noise," Ph.D. thesis, 2006
Fritz van den Berg, "Wind Profiles over Complex Terrain," Proceedings of Second International Meeting on Wind Turbine Noise, Lyons, France, Sept. 2007
William K. G. Palmer, "Uncloaking the Nature of Wind Turbines-Using the Science of Meteorology," Proceedings of Second International Meeting on Wind Turbine Noise, Lyons, France, Sept. 2007
Soren Vase Legarth, "Auralization and Assessment of Annoyance from Wind Turbines," Proceedings of Second International Meeting on Wind Turbine Noise, Lyons, France, Sept. 2007
Julian T. and Jane Davis, "Living with aerodynamic modulation, low frequency vibration

and sleep deprivation - how wind turbines inappropriately placed can act collectively and destroy rural quietitude," Proceedings of Second International Meeting on Wind Turbine Noise, Lyons, France, Sept. 2007
James D. Barnes, "A Variety of Wind Turbine Noise Regulations in the United States - 2007," Proceedings of Second International Meeting on Wind Turbine Noise, Lyons, France, Sept. 2007
M. Schwartz and D. Elliott, Wind Shear Characteristics at Central Plains Tall Towers, NREL 2006
IEC 61400 "Wind turbine generator systems, Part 11: Acoustic noise measurement techniques,".rev:2002

Discussion

After reviewing the materials in the tables; we have arrived at our current understanding of wind turbine noise and its impact on the host community and its residents. The review showed that some residents living as far as 3 km (two (2) miles) from a wind farm complain of sleep disturbance from the noise. Many residents living one-tenth this distance (300 m. or 1000 feet) from a wind farm are experiencing major sleep disruption and other serious medical problems from nighttime wind turbine noise. The peculiar acoustic characteristics of wind turbine noise immissions cause the sounds heard at the receiving properties to be more annoying and troublesome than the more familiar noise from traffic and industrial factories. Limits used for these other community noise sources do not appear to be appropriate for siting industrial wind turbines. The residents who are annoyed by wind turbine noise complain of the approximately one (1) second repetitive swoosh-boom-swoosh-boom sound of the turbine blades and "low frequency" noise. It is not apparent to these authors whether the complaints that refer to "low frequency" noise are about the audible low frequency part of the swoosh-boom sound, the one hertz amplitude modulation of the swoosh-boom sound, or some combination of both acoustic phenomena.

To assist in understanding the issues at hand, the authors developed the 'conceptual' graph for industrial wind turbine sound shown in Figure 1. This graph shows the data from one of the complaint sites plotted against the sound immission spectra for a modern 2.5 MWatt wind turbine; Young's threshold of perception for the 10% most sensitive population (ISO 0266); and a spectrum obtained for a rural community during a three hour, 20 minute test from 11:45 pm until 3:05 am on a windless June evening in near Ubly, Michigan a quiet rural community located in central Huron County. (Also called: Michigan's "Thumb.") It is worth noting that this rural community demonstrates how quiet a rural community can be when located at a distance from industry, highways, and airport related noise emitters.

During our review we posed a number of questions to ourselves related to what we were learning. The questions (italics) and our answers are:

Do National or International or local community Noise Standards for siting wind turbines near dwellings address the low frequency portion of the wind turbine's sound immissions?[32] No! State and Local governments are in the process of establishing wind farm noise limits and/or wind turbine

[32] Emissions refer to acoustic energy from the 'viewpoint' of the sound emitter, while immissions refer to acoustic energy from the viewpoint of the receiver.

setbacks from nearby residents, but the standards incorrectly presume that limits based on dBA levels are sufficient to protect the residents.

Do wind farm developers have noise limit criteria and/or wind turbine setback criteria that apply to nearby residents? Yes! But the Wind Industry recommended residential wind turbine noise levels (typically 50-55 dBA) are too high for the quiet nature of the rural communities and may be unsafe for the nearest residents. An additional concern is that some of the methods for implementing pre-construction computer models may predict sound levels that are too low. These two factors combined can lead to post-construction complaints and health risks.

Are all residents living near wind farms equally affected by wind turbine noise? No, children, people with pre-existing medical conditions, especially sleep disorders, and the elderly are generally the most susceptible. Some people are unaffected while some nearby neighbors develop serious health effects caused by exposure to the same wind turbine noise.

How does wind turbine noise impact nearby residents? Initially, the most common problem is chronic sleep deprivation during nighttime. According to the medical research documents, this may develop into far more serious physical and psychological problems

What are the technical options for reducing wind turbine noise immission at residences? There are only two options: 1) increase the distance between source and receiver, and/or 2) reduce the source sound power immission. Either solution is incompatible with the objective of the wind farm developer to maximize the wind power electrical generation within the land available.

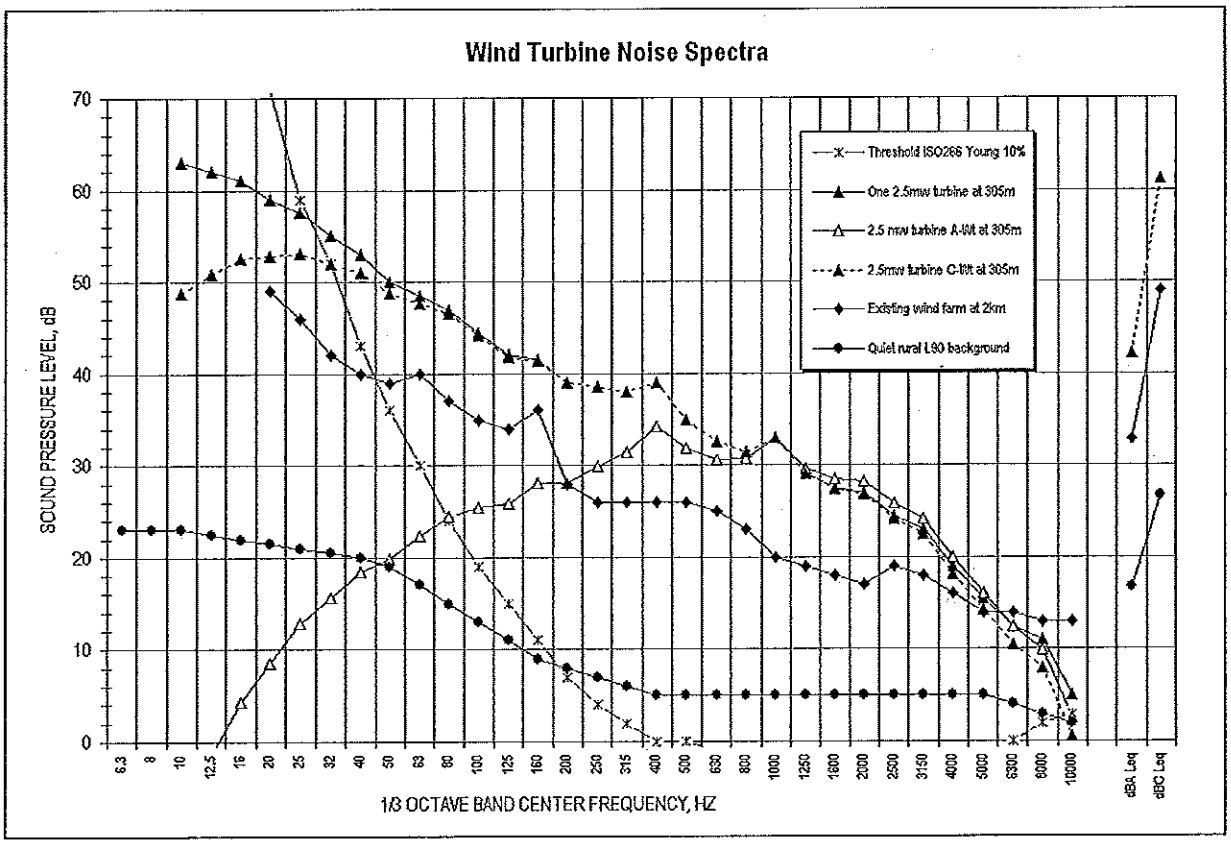

Figure 1-Generalized Sound Spectra vs. perception and rural community L_{90A} background 1/3 octave SPL

Is wind turbine noise at a residence much more annoying than traffic noise? Yes, researchers have found that "Wind turbine noise was perceived by about 85% of the respondents even when the calculated A-weighted SPL were as low as 35.0–37.5 dB. This could be due to the presence of

amplitude modulation in the noise, making it easy to detect and difficult to mask by ambient noise." [JASA 116(6), December 2004, pgs 3460-3470, "Perception and annoyance due to wind turbine noise-a dose-relationship" Eja Pedersen and Kerstin Persson Waye, Dept of Environmental Medicine, Goteborg University, Sweden]

Why do wind turbine noise immissions of only 35 dBA disturb sleep at night? This issue is now being studied by the medical profession. The affected residents complain of the middle to high frequency swooshing sounds of the rotating turbine blades at a constant repetitive rate of about 1 hertz plus low frequency noise. The amplitude modulation of the swooshing sound changes continuously. The short time interval between the blade's swooshing sounds described by residents as sometimes having a thump or low frequency banging sound that varies in amplitude up to 10 dBA. This may be a result of phase changes between turbine emissions, turbulence, or an operational mode.. The assumptions about wall and window attenuation being 15 dBA or more may not be sufficiently protective considering the relatively high amplitude of the wind turbine's low frequency immission spectra.

What are the typical wind farm noise immission criteria or standards? Limits are not consistent and may vary even within a particular country. Example criteria include: Australia-the lower of 35 dBA or L_{90} + 5 dBA, Denmark-40 dBA, France L_{90} + 3 (night) and L_{90} + 5 (day), Germany-40 dBA, Holland-40 dBA, United Kingdom-40 dBA (day) and 43 dBA (night) or L_{90} + 5 dBA, Illinois-55 dBA (day) and 51 dBA (night), Wisconsin-50 dBA and Michigan-55 dBA. Note: Illinois statewide limits are expressed only in nine contiguous octave frequency bands and no mention of A-weighting for the hourly l_{eq} limits. Typically, wind turbine noise just meeting the octave band limits would read 5 dB below the energy sum of the nine octave bands after applying A-weighting. So the Illinois limits are approximately 50 dBA (daytime 7 AM to 10 PM) and 46 dBA at night, assuming a wind farm is a Class C Property Line Noise Source.

What is a reasonable wind farm sound immission limit to protect the health of residences? We are proposing an immission limit of 35 dBA or L_{90A} + 5 dBA whichever is lower and also a C-weighted criteria to address the impacted resident's complaints of wind turbine low frequency noise: For the proposed criteria the dBC sound level at a receiving property shall not exceed L_{90A} + 20dB. In other words, the dBC operating immission limit shall not be more than 20 dB above the measured dBA (L_{90A}) pre-construction nighttime background sound level. A maximum not-to-exceed limit of 50 dBC is also proposed.

Why should the dBC immission limit not be permitted to be more than 20 dB above the background measured L_{90A}? The World Health Organization and others have determined a sound emitter's noise that results in a difference between the dBC and dBA value greater than 20 dB will be an annoying low frequency issue.

Is not L_{90A} the minimum dBA background noise level? This is not exactly correct. The L_{90} is the statistical descriptor representing the quietest 10% of the time. It may be understood as the sounds one hears when there are no nearby or short-term sounds from man-made or natural sources. It excludes sounds that are not part of the soundscape during all seasons. It is very important to establish the statistical average background noise environment outside a potentially impacted residence during the quietest (10 pm to 4 am) sleeping hours of the night. This nighttime sleep disturbance has generated the majority of the wind farm noise complaints throughout the world. The basis for a community's wind turbine sound immission limits would be the minimum 10 minute nighttime L_{90A} plus 5 dB for the time period of 10 pm to 7 am. This would become the Nighttime Immission Limits for the proposed wind farm. This can be accomplished with one or several ten (10) minute measurements during any night when the

atmosphere is classified stable with a light wind from the area of the proposed wind farm. The Daytime Limits (7 am to 7 pm) could be set 10 dB above the minimum nighttime L_{90A} measured noise, but the nighttime criteria will always be the limiting sound levels.

A nearby wind farm meeting these noise immission criteria will be clearly audible to the residents occasionally during nighttime and daytime. Compliance with this noise standard would be determined by repeating the initial nighttime minimum nighttime L_{90A} tests and adding the dBC (L_{eqC}) noise measurement with the turbines on and off. If the nighttime background noise level (turbines off) was found to be slightly higher than the measured background prior to the wind farm installation, then the results with the turbines on must be corrected to determine compliance with the pre-turbine established sound limits.

The common method used for establishing the background sound level at a proposed wind farm used in many of the studies in Table 1 was to use unattended noise monitors to record hundreds of ten (10) minute measurements to obtain a statistically significant sample over varying wind conditions or a period of weeks. The measured results for daytime and nighttime are combined to determine the statically average wind noise as a function of wind velocity measured at a height of ten (10) meters. This provides an enormous amount of data but the results have little relationship to the wind turbine sound immission or turbine noise impact in nearby residents. The purpose of this exhaustive exercise often only demonstrates how much noise is generated by the wind. In some cases it appears that the data is used to 'prove' that the wind noise masks the turbine's sound immissions.

The most glaring failure of this argument occurs during the frequent nighttime condition of a stable atmosphere. Then, the wind turbines operate at full or near full power and noise output while the wind at ground level is calm and the background noise level is low. This is the condition of maximum turbine noise impact on nearby residents. It is the condition which most directly causes chronic sleep disruption. Furthermore, the measurement methodology is usually faulty, as much of the wind noise measured by unattended sound monitors is the pseudo-wind noise generated by failure of the microphone's windscreen. This results in totally erroneous background sound levels being used for permitting and siting decisions. (See studies in Table 3, esp. Van den Berg)

Are there additional noise data to be recorded for a pre-wind turbine noise survey near selected dwellings? Yes, The measuring sound level meter(s) need document the L_{Aeq}, L_{A10}, L_{A90} and L_{Ceq}, L_{C10}, L_{C90} sound levels plus start time & date for each 10 minute sample. The L_{10} results will be utilized to help validate that conditions were appropriate for measuring the L_{90} long term background sound levels. For example, on a quiet night one would expect L_{A10} to be less than 10 dB higher than the L_{A90} long-term background sound level. On a windy night or day the difference may be more than 20 dB. There is a requirement for measurement of the wind velocity near the sound measurement microphone continuously throughout each ten (10) minute recorded noise sample. The ten (10) minute average of the wind speed near the microphone shall not exceed 2 m/s (4.5 mph) and the maximum wind speed for operational tests shall not exceed 4 m/s (9 mph). It is strongly recommended that observed samples be used for these tests.

Is there a need to record weather data during the background noise recording survey? One weather monitor is required at the proposed wind farm on the side nearest the residents. The weather station sensors are at standard ten (10) meter height above ground. It is critical the weather be recorded every ten (10) minutes synchronized with the clocks in the sound level recorders without ambiguity in the start and end time of each ten (10) minute period. The weather station should record wind speed and direction, temperature, humidity and rain.

Why do Canada and some other countries base the permitted wind turbine noise immission limits on the operational wind velocity at the 10m height wind speed instead of a maximum dBA or L_{A90} + 5 dBA immission level? First, it appears that the wind turbine industry will take advantage of every opportunity to elevate the maximum permitted noise immission level to reduce the setback distance from the nearby dwellings. Including wind as a masking source in the criteria is one method for elevating the permissible limits. Indeed the background noise level does increase with surface wind speed. When it does occur, it can be argued that the increased wind noise provides some masking of the wind farm turbine noise emission. However, in the middle of the night when the atmosphere is defined as stable (no vertical flow from surface heat radiation) the layers of the lower atmosphere can separate and permit wind velocities at the turbine hubs to be 2 to 4 times the wind velocity at the 10m high wind monitor but remain near calm at ground level. The result is the wind turbines can be operating at or close to full capacity while it is very quiet outside the nearby dwellings.

This is the heart of the wind turbine noise "problem" for residents within 3 km (approx. two miles) of a wind farm. When the turbines are producing the sound from operation it is quietest outside the surrounding homes. The PhD thesis of P.G. van den Berg "The Sounds of High Winds" is very enlightening on this issue. See also the letter by John Harrison in Ontario "On Wind Turbine Guidelines."

What sound monitor measurements would be needed for enforcement of the wind turbine sound ordinance? A similar sound and wind 10 minute series of measurements would be repeated at the pre-wind farm location nearest the resident registering the wind turbine noise complaint, with and without the operation of the wind turbines. An independent acoustics expert should be retained who reports to the County Board or other responsible governing body. This independent acoustics expert shall be responsible for all the acoustic measurements including instrumentation setup, calibration and interpretation of recorded results. An independent acoustical consultant shall also perform all pre-turbine background noise measurements and interpretation of results to establish the Nighttime (and Daytime if applicable) industrial wind turbine sound immission limits. At present the acoustical consultants are retained by, and work directly for, the wind farm developer.

This presents a serious problem with conflict of interest on the part of the consultant. The wind farm developer would like to show the significant amount of wind noise that is present to mask the sounds of the wind turbine immissions. The wind farm impacted community would like to know that wind turbine noise will be only barely perceptible and then only occasionally during the night or daytime.

Is frequency analysis required either during pre-wind farm background survey or for compliance measurements? Normally one-third octave or narrower band analysis would only be required if there is a complaint of tones immission from the wind farm.

Proposed Sound Limits

The simple fact that so many residents complain of low frequency noise from wind turbines is clear evidence that the single A-weighted (dBA) noise descriptor used in most jurisdictions for siting turbines is not adequate. The only other simple audio frequency weighting that is standardized and available on all sound level meters is C-weighting or dBC. A standard sound level meter set to measure dBA is increasingly less sensitive to low frequency below 500 Hz (one octave above middle-C). The same sound level meter set to measure dBC is equally sensitive to all frequencies above 32 Hz (lowest note on grand piano). It is well accepted that dBC readings

are more predictive of perceptual loudness than dBA readings if low frequency sounds are significant.

We are proposing to use the commonly accepted dBA criteria that is based on the pre-existing background sound levels plus a 5 dB allowance for the wind turbine's immissions (e.g. L_{90A} +5) for the audible sounds from wind turbines. In addition, to address the lower frequencies that are not considered in A-weighted measurements we are proposing to add limits based on dBC. The Proposed Sound Limits are presented in the text box at the end of this paper.

For the current industrial grade wind turbines in the 1.5 to 3 MWatt range, the addition of the dBC requirement will result in an increased distance between wind turbines and the nearby residents. For the generalized graphs shown in Figure 1, the distances would need to be approximately double the current distance. This will result in setbacks in the range of 1 km or greater for the current generation of wind turbines if they are to be located in rural areas where the L_{90A} background sound levels are 30 dBA or lower. When no man-made sounds are audible they can even be under 20 dBA. In areas with higher background sound levels, turbines could be located somewhat closer, but still at a distance greater than the 305 m (1000 ft.) or less setbacks commonly seen in U.S. based wind turbine standards set by many states and used for wind turbine developments.

1. Establishing Long-Term Background Noise Level

a. Instrumentation: ANSI or IEC Type 1 Precision Integrating Sound Level Meter plus meteorological instruments to measure wind velocity, temperature and humidity near the sound measuring microphone. Measurement procedures must meet ANSI S12.9, Part 3.

b. Measurement location(s): Nearest property line(s) from proposed wind turbines representative of all non-participating residential property within 2.0 miles.

c. Time of measurements and prevailing weather: The atmosphere must be classified as stable with no vertical heat flow to cause air mixing. Stable conditions occur in the evening and middle of the night with a clear sky and very little wind near the surface. Sound measurements are only valid when the measured wind speed at the microphone does not exceed 2 m/s (4.5 mph).

d. Long-Term Background sound measurements: All data recording shall be a series of contiguous ten (10) minute measurements. The measurement objective is to determine the quietest ten minute period at each location of interest. Nighttime test periods are preferred unless daytime conditions are quieter. The following data shall be recorded simultaneously for each ten (10) minute measurement period: dBA data includes L_{A90}, L_{A10}, L_{Aeq} and dBC data includes L_{C90}, L_{C10}, and L_{Ceq}. The maximum wind speed at the microphone during the ten minutes, a single measurement of temperature and humidity at the microphone for each new location or each hour whichever is oftener shall also be recorded. A ten (10) minute measurement contains valid data provided: Both L_{A10} minus L_{A90} and L_{C10} minus L_{C90} are not greater than 10 dB and the maximum wind speed at the microphone did not exceed 2 m/s during the same ten (10) minute period as the acoustic data.

2. Wind Turbine Sound Immission Limits

No wind turbine or group of turbines shall be located so as to cause wind turbine sound immission at any location on non-participating property containing a residence in excess of the limits in the following table:

Table of Not-To-Exceed Property Line Sound Immission Limits [1]

Criteria	Condition	dBA	dBC
A	Immission above pre-construction background:	$L_{Aeq} = L_{A90} + 5$	$L_{Ceq} = L_{C90} + 5$
B	Maximum immission:	35 L_{Aeq}	55 L_{Ceq} for quiet[2] rural environment 60 L_{Ceq} for rural-suburban environment
C	Immission spectra imbalance	L_{Ceq} (immission) minus (L_{A90} (background)+5) $\leq$ 20 dB	
D	Prominent tone penalty:	5 dB	5 dB

Notes	
1	Each Test is independent and exceedances of any test establishes non-compliance Sound "immission" is the wind turbine noise emission as received at a property
2	A "Quiet rural environment" is a location 2 miles from a state road or other major transportation artery without high traffic volume during otherwise quiet periods of the day or night.
3	Prominent tone as defined in IEC 61400-11. This Standard is not to be used for any other purpose.

[1] Procedures provided in Section 7. Measurement Procedures (Appendix to Ordinance) of the most recent version of "**The How To Guide To Siting Wind Turbines To Prevent Health Risks From Sound**" by Kamperman and James apply to this table.

3. Wind Farm Noise Compliance Testing

All of the measurements outlined above in 1. Establishing the Long-Term Background Noise Level must be repeated to determine compliance with 2. Wind Turbine Sound Immission Limits. The compliance test location is to be the pre-turbine background noise measurement location nearest to the home of the complainant in line with the wind farm and nearer to the wind farm. The time of day for the testing and the wind farm operating conditions plus wind speed and direction must replicate the conditions that generated the complaint. Procedures of ANSI S12.9-Part 3 apply as amended. Instrumentation limits for wind and other factors must be recognized and followed.

The authors have based these criteria, procedures, and language on their current understanding of wind turbine sound emissions, land-use compatibility, and the effects of sound on health. However, use of the following, in part or total, by any party is strictly voluntary and the user assumes all risks. Please seek professional assistance in applying the recommendations of this document to any specific community or WES development.

Wind Farms

Environmental Noise Guidelines

EPA South Australia

NOISE

Government of South Australia

Environmental Noise Guidelines: Wind Farms

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1 INTRODUCTION

This document aims to help developers, planning and enforcement authorities, other government agencies and the broader community assess environmental noise impacts from wind farms.

The core objective of these guidelines is to balance the advantage of developing wind energy projects in this State with protecting the amenity of the surrounding community from adverse noise impacts.

Wind farms need specific guidelines because wind turbines have unique noise generating characteristics and the environments surrounding wind farm sites usually have low ambient noise.

A workshop with approximately 40 participants was held to help develop these guidelines. A technical subgroup, formed from the workshop group, provided specific technical consultation during development. An earlier draft of these guidelines was distributed to the original workshop participants and their submissions were used to prepare this final document.

In addition, the Environment Protection Authority (EPA) has taken into consideration the documents listed in the Bibliography (Section 11).

Shaded boxes throughout this draft document contain explanatory comments.

Guidelines

The *Environment Protection Act 1993* requires a duty of care for the environment. This is specified under Section 25 of the Act and states:

A person must not undertake an activity that pollutes, or might pollute, the environment unless the person takes all reasonable and practicable measures to prevent or minimise any resulting environmental harm.

Guidelines published by the EPA indicate the standard of care that is likely to be required to secure compliance with the general environmental duty as outlined in s. 25 of the Act.

They have the advantage of flexibility and can be adapted to a range of circumstances.

2 NOISE CRITERIA

The general approach in setting noise criteria for new developments is to require compliance with a base noise level.

This base noise level is typically 5 dB(A) lower than the level considered to reflect the amenity of the receiving environment. Designing new developments at a lower level accounts for the cumulative effect of noise from other similar development and for the increased sensitivity of receivers to a new noise source.

The impact of a given noise is also closely linked to the amount it exceeds the background noise. For example, the same noise in a quiet rural area will generally have a greater adverse impact than in a busy urban area because of the masking effect of high ambient noise environments.

If the noise generated does not exceed the background noise by more than 5 dB(A) the impact will be marginal and acceptable.

A unique characteristic of wind farms is that the noise level from each wind turbine generator (WTG) increases as the wind speed at the site increases. As an offset, the background noise also generally increases under these conditions and can mask the WTG noise.

Comparison with a base noise level alone will therefore not be sufficient to indicate the potential impact of a wind farm: a farm could comply with this base level at lower wind speeds but exceed it when the wind speed rises.

Most international and interstate jurisdictions (see examples below) set a base noise level for low wind speeds and also ensure that the wind farm noise does not exceed the background noise by more than 5 dB(A) as the wind speed increases.

This general approach recognises the unique noise generating characteristics of wind turbines and the particular ambient noise environments of most sites and is the one used by these guidelines.

The New Zealand Standard NZS 6808 sets the predicted base level (L_{Aeq}) at 40 dB(A). This is higher than the approach of these guidelines, but the specified propagation model to be used in accordance with that standard does not account for factors such as ground absorption and topography effects that can substantially reduce the noise level in practice. In addition, the New Zealand Standard requires the criteria to be met at all receivers, regardless of their relative amenity or relationship with the wind farm development.

A comprehensive publication developed by the wind farm industry for the UK Department of Trade and Industry (1996) sets the base level (L_{A90}) at 35–40 dB(A). The actual value chosen within this range depends on the number of dwellings affected, the effect on the capacity of the wind farm of meeting the standard, and the duration and level of exposure.

Wind turbines and wind farms have been being developed in Denmark for over 20 years. Denmark has set a base noise level only (and does not consider the influence of background noise). The base noise level (L_{Aeq}) is set at 40 dB(A) for a wind speed of V_{10m} = 8 m/s. These guidelines will provide a similar result given the expected influence of background noise.

The NSW EPA has not published specific guidelines for wind farms but has assessed a number of development applications using the same base noise level and background noise approach as these guidelines.

Most wind farm sites are within or next to areas where low ambient noise levels are a significant component of that area's amenity. These might include rural living zones or zones that are not intended to be subject to any other significant ambient noise sources from adjacent premises.

The criteria in these guidelines have been established for just such a scenario and have been developed in accordance with the objects of the *Environment Protection Act 1993* (the Act).

Where the wind farm sites are within or next to areas where more intensive activity is expected, the base noise level may also be increased commensurate with the amenity of that area. It is recommended that the developer discuss such a situation with the EPA and the relevant planning authority.

2.1 Determining wind farm operating criteria

The *Environment Protection (Industrial Noise) Policy 1994* limits the noise level from non-domestic noise sources including wind farms to 40 dB(A) or the lowest typical background noise level plus 5 dB(A) (whichever is the greater) in rural areas from 2200 hrs until 0700 hrs the following day.

This limit applies to existing noise sources and does not necessarily reflect the preferred noise criterion for new (planning) development. The general approach for new development applies a night time level of 35 dB(A) to significant development in a rural location.

To prevent adverse impacts from the increased noise of WTGs under high wind conditions, the increasing noise level must also be compared to the corresponding background noise at the relevant receiver.

2.2 Noise criteria—new wind farm development

The predicted equivalent noise level ($L_{Aeq,10}$), adjusted for tonality in accordance with these guidelines, should not exceed:

- 35 dB(A), or
- the background noise ($L_{A90,10}$) by more than 5 dB(A)

whichever is the greater, at all relevant receivers for each integer wind speed from cut-in to rated power of the WTG.

The background noise should be as determined by the data collection and regression analysis procedure recommended under these guidelines (Section 3). It should be read from the resultant graph at the relevant integer wind speed.

2.3 Agreements with wind farm developers

Wind farm developers commonly enter into agreements with the owners of private land suitable for a wind farm site. The agreement provides the wind farm developers with the appropriate siting and generally provides the landowner with a level of compensation and diversity in their income stream.

The criteria have been developed to minimise the impact on the amenity of premises that **do not** have an agreement with wind farm developers.

Notwithstanding this, the EPA cannot ignore noise impacts on the basis that an agreement has been made between the developer and the landowner. Developers cannot absolve themselves of their obligations under the Act by entering into an agreement with a landowner.

If it is shown that a development is having an 'adverse effect on an amenity value of an area that ... unreasonably interferes with ... the enjoyment of the area' then appropriate action can be taken under the Act.

However, the existence of an agreement will affect the consideration of whether the interference is unreasonable in a given situation. It is unlikely that there will be *unreasonable* interference if:

- a formal agreement is documented between the parties
- the agreement clearly outlines to the landowner the expected impact of the noise from the wind farm and its effect upon the landowner's amenity
- the likely impact of exposure will not result in adverse health impacts (e.g. the level does not result in sleep disturbance).

A risk associated with relying on such agreements still remains where the criteria in these guidelines are **exceeded**. This is because an interpretation of 'unreasonable' is required in any future assessment of the impact of wind farm noise initiated by a complaint from the landowner (or future landowners).

2.4 Staged development

The procedure and criteria presented in these guidelines are for greenfield sites but a wind farm may be developed over a number of separate stages.

A previous stage of the wind farm that is installed and operating may raise the background noise level at the relevant receivers by up to 5 dB(A).

Any subsequent stage in the development of the wind farm site should meet the criteria using the background noise levels as they existed prior to the wind farm. Therefore, the noise generated by existing WTGs from a previous stage should not be considered as part of the background noise in determining criteria for subsequent stages.

2.5 Cumulative development

Separate wind farm developments in close proximity to each other may impact on the same relevant receiver.

Therefore, as for staged development, any additional wind farm that may impact on the same relevant receiver as an existing wind farm should meet the criteria using the background noise levels as they existed before the original wind farm site development. The noise generated by existing WTGs from another wind farm should not be considered as part of the background noise in determining criteria for subsequent development.

On occasion it will not be possible to determine the background noise levels as they existed before the original wind farm development.

This may result in subsequent developers of new wind farm sites needing to provide sufficient distance from a relevant receiver (who is common to an existing site) such that the base noise level is met at that receiver for all operating wind speeds of the WTGs (V_{10m})[1] up to 10 m/s.

[1] Refer to 3.1 – Background noise

3 MEETING THE CRITERIA

This section describes the steps to be taken to assess whether the wind farm noise reaching receivers at relevant locations will comply with the criteria of these guidelines.

Background noise is measured at relevant receiver locations over continuous 10-minute intervals and particularly over the range of wind speeds at which the WTGs operate. The data must adequately represent conditions at the site and cover approximately 2000 intervals.

Wind speed is measured at 10 m above the ground and in intervals that correlate with the background noise measurements. The wind speed data, together with the manufacturer's noise data for the WTG and using a suitable model, is then used to predict noise levels at each integer wind speed from cut-in to rated power, at relevant receiver locations.

The correlated wind speed and background noise data are plotted against each other to give a standard graph for background noise at each relevant receiver. This graph is then used in conjunction with the predicted noise levels to assess whether the wind farm will meet the criteria of these guidelines.

3.1 Background noise

What is background noise?

Background noise is the 'lull' in the ambient noise environment.

Intermittent noise events such as from aircraft flying over, dogs barking, mobile farm machinery and the occasional vehicle travelling along a nearby road are all part of the ambient noise environment but would not be considered part of the background noise unless they were present for at least 90% of the time.

Why is background noise important?

Background noise can mask the noise effects of new development such as a wind farm and the level of masking is a critical factor in assessing the impact of a wind farm.

Wind generated noise can provide a good masking effect, particularly as it has similar characteristics to wind farm generated noise.

Background noise measurement locations

Background noise measurements should be carried out at locations that are relevant for assessing the impact of WTG noise on nearby premises (relevant receivers).

Relevant receiver locations are premises:

- on which someone resides or has development approval to build a residential dwelling
- at which the predicted noise level exceeds the relevant base noise level for wind speeds (V_{10m}) of 10 m/s or less
- that are representative of the worst case situation when considering the range of premises, e.g. a house located among a group of nearby houses within a residential zone.

1. A proposed wind farm site with a zone in its vicinity that is primarily for residential land use and is yet to be fully developed should be discussed with the relevant planning authority and the EPA.

   These locations will probably also be considered relevant receivers and background noise levels will be required at the zone boundary.

   The relevant planning authority can then be informed about the potential impacts on any future residential development.

   Nearby areas for which the zoning intent is not clear should also be discussed with the relevant planning authority and the EPA.

2. Background noise generally increases at a greater rate than noise from WTGs at high wind speeds. If the wind farm is predicted to achieve the base noise level at the very high wind speed of 10 m/s, 10 m above the ground (V_{10m}; see Section 3.4) the wind farm noise at even higher wind speeds is expected to be masked by the increasing background noise. Therefore the impact will not be adverse and further investigation is not required.

   The only exception is a receiver within 1500 m of the wind farm site that is in an area unlikely to be exposed to a windy environment. This specific circumstance should be discussed with the EPA.

3. The worst case situation may not always be the closest receiver to the wind farm site. The closest receiver should always be a measurement position but other locations where the background noise environment may differ due to prevailing weather patterns and/or local topography should also be included as relevant receivers.

   Background noise environments likely to differ at receivers around a wind farm site should also be discussed with the EPA.

Background noise measurement position

All measurements should be made outdoors. The microphone should be positioned 1200–1500 mm above the ground and at least 5 m from any reflecting surface (other than the ground).

The property boundary of the receiving premises is not necessarily a valid measuring position (particularly for large rural properties) unless it is likely that someone would regularly be there or the Development Plan clearly envisages noise sensitive development at such a location.

In general, any area within 20 m of a house and in the direction of the wind farm would be a valid measuring position.

Background noise levels can be significantly affected by local conditions, such as the presence of trees nearby. Where this is expected then it is recommended that photographs be taken showing the noise measurement position and associated surroundings, such as buildings, trees and topography.

This will ensure that no significant physical changes have been made to the locations between the time of the initial background noise measurements and of compliance checking.

Data collection

Equipment

Background noise levels should be collected for continuous 10-minute time intervals using sound level meters or loggers of at least Type 2 certification in accordance with Australian Standard AS 1259–1990 or IEC-61672 (International Electrotechnical Commission 2002).

The meters or loggers must be calibrated on site immediately before and after any measurement period using a calibrator complying with IEC 942 and approved by the meter manufacturer.

> Type 2 certified monitoring equipment provides a sufficient level of accuracy for assessing the impact of wind farms under these guidelines.
>
> Type 1 certified monitoring equipment will probably become commercially available in South Australia in the future, possibly sooner if an Australian Standard is prepared dealing with measurement procedures for wind farm sites. The EPA intends to modify this guideline to suit technical advancements and relevant standards/policy development.

Wind

Microphones should be protected with windshields in accordance with the microphone manufacturer's instructions, and the protection should be sufficient to ensure the noise level threshold of the monitoring equipment does not adversely affect the data used in the analysis. If microphones cannot be appropriately protected then affected data should not be collected.

As part of the development application, developers may need to confirm that the reported noise levels aren't influenced by high wind speed across the microphone, particularly where average wind speeds at the noise measurement position are expected to exceed 5 m/s (a high wind speed for the purposes of noise level measurement conditions).

Affected data can be identified by monitoring the wind speed at the noise measurement position (1200–1500 mm above ground level at the relevant receiver) over 10-minute intervals that correspond with the noise level measurement intervals. This information would then be compared with both the collected data for that interval and the manufacturer's specifications for microphone performance under those conditions.

> The EPA is currently sponsoring a 12-month field trial, started in January 2003, to determine typical wind speeds at a background noise level measurement site and how these speeds relate to background noise level data. When the trials are complete the data collection procedure will be reviewed.

Rain

Rain periods during monitoring may also adversely affect the collected data. If rain was recorded in the vicinity during the collection period the developer must supply evidence that the affected data has not been used in the analysis.

The nearest weather station might not provide a sufficient indication of localised conditions in remote areas. A simple method might record rain using a local gauge or collection method that is regularly checked, and discard all data in periods where rain was detected. High sensitivity tipping rain gauges have been used overseas but they are not readily available.

Data

Data not adversely affected by the effects of wind or rain should be collected for a sufficient period to cover the range of wind speeds and directions generally expected at the wind farm site.

Particular emphasis should be placed on collecting background noise data corresponding to the operating wind speed range of the WTGs.

Sufficient data is considered to be approximately 2000 measurement intervals (or the equivalent of two weeks worth of data).

The EPA field trials will also evaluate the quantity of data required to provide reliable regression analysis and to adequately represent the expected range of conditions at the site. When the trials are complete the data collection procedure will be reviewed.

Compliance checking will require the background noise level data collection process to be repeated when the wind farm is operational (see Section 4).

Background noise varies naturally throughout the year, with different prevailing wind directions, foliage on trees, atmospheric conditions and the like.

A community concern is that the developer may measure during a limited (minimum 2 week) period that is not representative of the rest of the year.

This guideline recommends that compliance checking be repeated at different periods of the year where valid concerns exist.

The developer must collect representative background noise data. Non-compliance may result in one or a number of WTGs being stopped under certain conditions.

3.2 Wind speed measurements

Manufacturers of wind turbines publish noise level data for their machines derived through a comprehensive international measurement standard.

The noise level generated by a wind turbine increases as the wind speed driving it increases. Generally data is provided for at least each integer wind speed from cut-in speed up to rated power.

Wind speeds for the purposes of the WTG noise level data are measured at 10 m above ground level.

The noise level data for each WTG is used as the basis for predicting the total noise level from a wind farm.

Wind speed 10 m above the ground at the wind farm site and background noise at the relevant receiver must be correlated so that background noise and wind farm noise can be compared. Therefore, wind speed measurements must be made in 10-minute intervals that correlate/ synchronise with the background noise data collection.

Measurement height

The wind speed should be measured at 10 m above ground level.

A developer will often measure wind speed at different heights to determine whether wind conditions at the site are suitable for an economic wind farm development. It may be acceptable to

convert the results from a different measurement height to 10 m provided the wind shear model used to do this is clearly stated and is accepted by the EPA.

All wind speeds referred to in these guidelines and within any development application referred to a planning authority should be expressed at 10 m above ground level unless otherwise stated.

All predicted noise levels should be based on noise level data derived from wind speed measurements taken at 10 m above ground level.

Measurement location

The same location should be used for measuring wind speed and direction for all of the following procedures:

- background noise measurements
- compliance checking
- noise predictions.

Therefore the wind speed measurement location at the wind farm site should not:

- be significantly affected by the operation of the WTGs in their final location
- provide lower wind speed results than other locations on the wind farm site, where those locations will house WTGs that affect the noise level at a relevant receiver.

For large or topographically diverse wind farm sites, the suitability of the wind speed measurement location may need to be confirmed as part of the development assessment process.

3.3 Noise level prediction

Prediction locations

The noise level associated with the wind farm should be predicted at all locations identified as relevant receivers under these guidelines for each integer wind speed from cut-in speed to the speed of rated power.

> WTG manufacturers generally do not test or extrapolate tested results above wind speeds of rated power.
>
> The measurement of noise levels under high wind speeds (used to determine the sound power level of a turbine model) is difficult.
>
> Where wind farms comply with the noise level criteria in these guidelines up to rated power it is unlikely that adverse impacts will occur at higher wind speeds.

Propagation model

A suitable model must be selected (or developed) to predict the worst case noise level at all relevant receivers.

The following information should be provided as part of the development application:

- the propagation model, and any variation of the model, used for the prediction
- an estimate of the model accuracy in dB(A)

- the assumptions used as input to the model, including allowances for noise absorption due to air, ground, topographical and wind effects.

The noise level at the relevant receiver locations should be predicted allowing for the propagating effect of wind (the noise sounds louder downwind than upwind) in the direction from the wind farm to that receiver at each integer wind speed. This represents a worst case situation. (In most situations there will be different wind directions and wind speeds between each WTG on a wind farm site and the relevant receiver. These effects will reduce the actual noise level when compared to that predicted under worst case conditions.)

Noise levels should be predicted by an acoustic engineer defined for the purposes of these guidelines as an engineer who is eligible for membership of both the Australian Acoustical Society and the Institution of Engineers Australia.

The New Zealand Standard NZS 6808:1998 uses a simple propagation model that does not account for wind, ground or topographical effects, and uses a simplified approach to account for atmospheric effects.

The model is expected to predict higher than actual noise levels where topography (land rise or structure between receiver and wind farm) or ground effects (heavy foliage) are important. However, on other sites it may predict with similar accuracy to more complex propagation models because it does not account for the propagating effect of the wind.

This model can be used with limited background in acoustic engineering. If it, or a similar simple propagation model, is intended to be used, this should be discussed with the EPA. Use of such a model and input by someone other than an acoustic engineer may be acceptable where the predicted levels easily meet the criteria.

Sound power data

The sound power level can be thought of as the noise signature for the WTG model proposed for the wind farm.

The sound power level data at each integer wind speed from cut-in speed to the speed of rated power should be specified in the development application as determined in accordance with International Electrotechnical Standard IEC 61400-11.

Tonality is a characteristic that can increase the adverse impact of a given noise source and it can be determined by breaking the noise signature down into discrete frequency bands.

If tonality is a characteristic of the WTG noise, 5 dB(A) should be added to the predicted or measured noise level from the wind farm.

To help determine whether there is tonality, the method and results of testing (such as in accordance with IEC 61400-11) carried out on the proposed WTG model to determine the presence of tonality should also be specified in the development application.

At the time of development application, the contractual arrangements for which particular WTG model may not have been finalised between the developer and WTG supplier. If the WTG model to be installed differs from that assumed at the time of development application, the developer should assess and discuss the effect on the propagation model with the EPA.

The wind farm developer must also discuss changes to the type, location or operation of the WTGs with the relevant planning authority.

3.4 Data analysis

Background noise and wind speed data

At the completion of the data collection period there should be a minimum of 2000 pairs of synchronised background noise and wind speed measurements at wind speeds between the cut-in speed and the speed of rated power.

The background noise should be plotted against the corresponding wind speed measurement for each relevant receiver. It is common to plot the wind speed along the x axis and the background noise along the y axis.

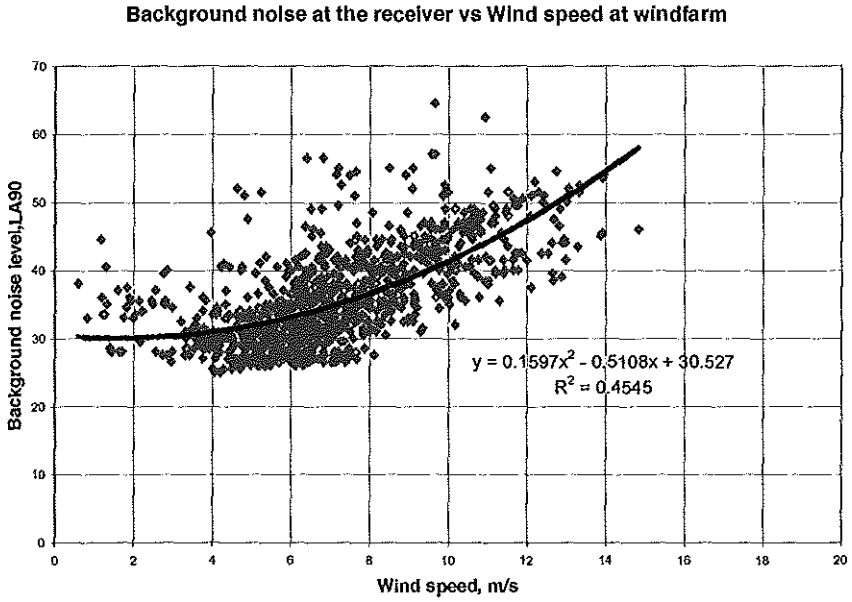
A best fit regression analysis should be carried out on the data. The polynomial order (from linear up to third order) providing the best correlation co-efficient should be used to provide the fitted regression line.

The correlation co-efficient should be specified for each polynomial order.

Data that has been collected at the extreme ends of the range of wind speeds (below and above the operating wind speeds of the WTG) can influence the slope of the fitted regression line and should not be included in the regression analysis.

The graph for each relevant receiver showing the plotted points, the fitted regression line, the polynomial describing that line and the correlation co-efficient should be included in the development application.

A typical graph is shown below for information. (In this example graph the operating speeds of the WTG are not known and thus, unlike real situations, data above and below the operating have not been removed.)



The predicted noise level should be overlaid on such a graph to determine compliance with the criteria.

4 COMPLIANCE CHECKING

It is unlikely that the worst case noise propagation conditions of the prediction procedure of these guidelines will often be repeated during operation of the wind farm. The actual impacts are therefore likely to be less than the predicted impacts.

Notwithstanding this, the prediction process relies on assumptions about a range of inputs, and the procedure given in this section for measuring the actual noise impacts is a means of confirming compliance or otherwise with the predicted impacts.

The measurement of wind farm noise is expected to be difficult due to the masking effect of the ambient noise and its influence on the base noise level descriptor (L_{Aeq}). The background noise descriptor (L_{A90}) is used to remove this effect.

In setting the compliance checking criteria, the cumulative pre-existing effect of the background noise and the wind farm noise, and the level of accuracy of the measurement procedure have been considered.

4.1 Procedure

Compliance checking follows a similar procedure to compliance prediction (Section 3).

Ambient noise levels with the wind farm operating are measured at relevant receiver locations, over continuous 10-minute intervals and over at least the range of wind speeds at which the WTGs operate. The data must cover approximately 2000 intervals.

Wind speed is measured at 10 m above the ground and in intervals that correlate with the ambient noise measurements.

Compliance checking should collect data associated with the worst case wind direction from the wind farm to the relevant receiver. A wind direction spread of 45 degrees either side of the direct line between the nearest WTG and the relevant receiver is considered acceptable (International Electrotechnical Commission 1998, 1(j) p9). This will not always be practical, given prevailing wind conditions.

Cases in which it appears to be impractical to collect 2000 data points under worst case wind direction conditions or in which all WTGs are not operating, should be discussed with the EPA.

4.2 Data analysis

Regression analysis should be repeated on the ambient noise and wind speed measurement data using the same polynomial order regression formula as for Section 3.5. The correlation co-efficient should be specified in the compliance checking report.

Data below the cut-in speed and above the speed for rated power should not be included (see Section 3.5).

A graph should be prepared for each relevant receiver showing the plotted points, the fitted regression line, the polynomial describing that line and the correlation co-efficient in the compliance checking report.

In addition, the graph should have the criteria determined in accordance with these guidelines superimposed.

4.3 Criteria

The ambient noise level ($L_{A90,10}$) measured in accordance with the compliance checking procedure and determined by the regression analysis procedure should be read from the resultant graph at

the relevant integer wind speed. It should then be adjusted for tonality in accordance with these guidelines and should not exceed:

- 35 dB(A), or
- the pre-existing background noise by more than 5 dB(A)

whichever is the greater, at all relevant receivers for each integer wind speed from cut-in to rated power.

4.4 Tonality

Where, in the opinion of an officer authorised under the Environment Protection Act, the wind farm exhibits tonality as a characteristic, the developer should conduct a tonality test in accordance with a procedure acceptable to the EPA.

An addition of 5 dB(A) should be made to the measured background noise level from a wind farm where tonality is shown to be a characteristic.

4.5 Annoying characteristics

These guidelines have been developed with the fundamental characteristics of noise from a wind farm taken into account. These include the aerodynamic noise from the passing blades (commonly termed 'swish') and the infrequent and short-term braking noise.

However, annoying characteristics that are not fundamental to a typical wind farm should be rectified. Such characteristics may include infrasound (low frequency noise below the audible frequency range that manifests as a rattle in lightweight materials such as glass) or adverse mechanical noise (perhaps generated as a failure of a component).

Infrasound was a characteristic of some early wind turbine models that has been attributed to early designs in which turbine blades were downwind of the main tower—the turbulence generated around the tower was cut through by the blades, generating this effect.

Modern designs generally have the blades upwind of the tower. Wind conditions onto the blades and improved blade design minimise the generation of the effect. The EPA has consulted the working group and completed an extensive literature search but is not aware of infrasound being present at any modern wind farm site.

4.6 Excessive noise

The operation of the wind farm should comply with the criteria at all relevant receivers[2]. The extent of relevant receivers should not be confined to those identified during the development assessment stage.

The EPA can require the developer to repeat the compliance checking procedure if it receives any complaint that may be valid about an unreasonable interference on those premises from noise impacts.

An Environment Protection Order as provided under s. 93 of the Environment Protection Act may be issued by the EPA to secure compliance with the criteria in these guidelines.

This may mean that the operation of certain WTGs would be restricted under certain wind speed conditions.

[2] See shaded panel

The EPA recognises that measurements in a windy environment are technically difficult and subject to variation. Exceeding the compliance checking criteria may be the result of varying background noise, rather than of excessive wind farm noise.

It is expected that there will be natural variations in background noise throughout the year[3], with different prevailing wind directions, foliage on trees, atmospheric conditions and possibly with changes to local conditions such as buildings, trees or topography that may affect compliance with the criteria. Where this may be the case, the onus of responsibility for proof resides with the developer.

A range of alternative compliance checking procedures, such as those detailed in the Clause 6 of the International Energy Agency recommended practices (1997), can remove the influence of background noise to accurately determine the wind farm noise in isolation.

[3] The EPA field trials are expected to provide information on the extent of variation of the background noise. When the trials are complete the compliance checking procedure will be reviewed.

5 DOCUMENTATION

Development applications for wind farms are often referred to the EPA by the relevant planning authority for assessment of the environmental noise impact.

The draft Planning SA Bulletin at the time of drafting these guidelines indicates that the referral may become formal by adding wind farm developments as a scheduled item in the *Development Act 1993*.

If it appears likely that the criteria under these guidelines will be approached, developers should discuss the development with the EPA before submitting the application to ensure they provide all relevant information.

All relevant information on the noise impacts must be included with the application. Possible information requirements are summarised below.

5.1 Predicted noise from the wind farm

(a) make and model of WTGs to be used, including hub height

(b) one third octave band sound power levels and associated wind speed of WTGs to be used

(c) positions of all WTGs

(d) positions of all affected premises within 1.5 km of any WTG, noting which premises are part of the development and which are not

(e) distance of all affected premises in d above from nearest WTG

(f) description of the zone category for all receivers in (d), as outlined in the relevant Development Plan under the *Development Act 1993*

(g) predicted noise levels for those premises in (d) for worst case wind direction and over the operating wind speed range of the WTGs

(h) the model used and the method for deriving the noise levels in (g)

(i) amount of noise reduction, if any, allowed for acoustic screening to estimate the levels in (g)

(j) topographical map of wind farm and affected premises showing contour lines

(k) location of wind measuring position(s) used for noise assessment and compliance purposes.

5.2 Measurement and assessment

(a) description of noise measuring equipment used, including make, model and type and including type and model of windscreen used for the microphone

(b) noise measurement position including height above ground, wind speed (at the noise measurement position) and distance to nearest building structure

(c) description and photograph of measurement position showing nearby trees and building structures

(d) atmospheric conditions at the wind farm including wind speed and direction

(e) time and duration of monitoring

(f) sampling time for wind and noise measurements

(g) number of data pairs measured (wind farm speed and background noise level)

(h) description of regression analysis method

(i) graphical plot of data in Section 5.1 (g) above and regression curve

(j) correlation co-efficient for regression curve

(k) graphical plot and corresponding tabulated data analysing predicted noise levels and criteria against integer wind speeds.

5.3 Compliance checking

(a) description of all noise monitoring equipment, including type of microphone wind protection used

(b) noise monitoring position(s)

(c) photographs of noise monitoring position taken before the wind farm was installed (at the noise modelling stage) and at the time of compliance checking, showing the noise measurement position and associated surroundings, such as buildings, trees and topography

(d) description of wind speed and direction measuring equipment used and the location on the wind farm, including height above ground level

(e) description of wind speed measuring equipment used for the purposes in Section 5.2

(f) details of which WTGs were operating during compliance check

(g) atmospheric conditions

(h) time and duration of monitoring period

(i) list of all monitored data showing wind speed, wind direction and noise level

(j) graphical plot and tabulated data overlaying line of best fit and criteria against integer wind speeds

(k) noise level at target and WTG cut-in speeds

(l) assessment of any audible annoying noise characteristics

6 GLOSSARY

A-weighted: frequency weighted as specified in Australian Standard AS 1259–1990 noise level meters or its replacement.

Authorised officer: a person appointed to be an authorised officer under Division 1 of Part 10 of the *Environment Protection Act 1993.*

Ambient noise: the total noise in a given environment.

Background noise: ambient noise, in the absence of the noise under investigation, measured using time weighting 'F', that is equalled or exceeded for 90% of the measurement time interval. Expressed as $L_{A90,T}$, where T refers to the measurement time interval in minutes.

Base noise level: means an $L_{Aeq,10}$ of 35 dB(A) unless otherwise stated.

dB(A): the noise level in decibels, obtained using the 'A' weighted network of a noise level meter as specified in Australian Standard AS 1259–1990 Noise Level Meters or its replacement.

EPA: Environment Protection Authority.

Equivalent noise level: the equivalent continuous A-weighted sound pressure level obtained using time weighting 'F', over the measurement time interval. Expressed as $L_{Aeq,T}$, where T refers to the measurement time interval in minutes.

Extraneous noise: noise from animals, excessive wind effects, insects, birds, aircraft or unusual traffic conditions or any other infrequently occurring component of the ambient noise.

Impulsive noise: noise containing impulse components as part of its characteristics, comprising a single pressure peak, or sequence of such peaks, or a single burst with multiple pressure peaks, whose amplitude decays with time, or a sequence of such bursts.

Low frequency noise: a noise with perceptible and definite content in the audible frequency range below 250 Hz.

Measurement place: a place at the receiver where the noise level is to be measured.

Noise source: premises at which an activity or process is undertaken that results in the emission of noise.

Predicted noise level: the $L_{Aeq,10}$ wind farm noise level at a receiver predicted in accordance with these guidelines.

Premises: any land, or the whole or part of a building or structure.

Prevailing background noise level: the background noise level derived from regression analysis of the background noise data.

Receiver: premises that may be affected by the noise source, other than premises on the same land as the noise source.

T: measurement time interval; taken to be 10 minutes unless stated otherwise.

Tonal noise: noise with perceptible and definite pitch or tone.

V_{10m}: wind speed measured in metres per second (m/s) at the wind farm site at 10 m above the ground.

WTG: wind turbine generator.

Wind farm: a group of WTGs installed in the same region and all operated by the same operator. It is not necessary that all WTGs are located on the same premises.

Zone: an area of land delineated as a zone, precinct or otherwise in the relevant Development Plan under the *Development Act 1993*, that is subject to a set of land use rules under that Plan.

7 BIBLIOGRAPHY

Australian Standard AS 1055–1997 Acoustics—Description and measurement of environmental noise

Australian Standard AS 1259–1990 Acoustics—Sound level meters

Development Act 1993

Environment Protection Act 1993

New Zealand Standard NZS 6808:1998 Acoustics—The Assessment and Measurement of Sound from Wind Turbine Generators

UK Department of Trade and Industry 1996, The assessment and rating of windfarm noise. Noise Working Group Final Report, ETSU-R-97.

Australian Wind Energy Association 2002, Best practice guidelines for implementation of wind energy projects in Australia.

International Electrotechnical Commission 1998, Wind turbine generator systems—Part 11: Acoustic emission measurement techniques, IEC Wind Energy Standard 61400-11.

International Electrotechnical Commission 2002, Electroacoustics—Sound level meters—Part 1: Specifications, IEC Standard 61672-1.

International Energy Agency 1997, IEA Recommended practices for wind turbine testing and evaluation—10, Measurement of noise emission from wind turbine at receptor locations.

World Health Organization 1999, WHO Guidelines for Community Noise, [Copy held at EPA.]

Nelson, PM 1973, The combination of noise from separate time varying sources, *Applied Acoustics*, (6)1–21.

[Standards Australia provides access to Australian and New Zealand Standards, and standards and guidelines from the International Electrotechnical Commission and International Energy Agency.]

Public Health Impacts
of
Wind Turbines

Prepared by:
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Environmental Health Division

In response to a request from:
Minnesota Department of Commerce
Office of Energy Security

May 22, 2009

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I. Introduction

In late February 2009 the Minnesota Department of Health (MDH) received a request from the Office of Energy Security (OES) in the Minnesota Department of Commerce, for a "white paper" evaluating possible health effects associated with low frequency vibrations and sound arising from large wind energy conversion systems (LWECS). The OES noted that there was a request for a Contested Case Hearing before the Minnesota Public Utilities Commission (PUC) on the proposed Bent Tree Wind Project in Freeborn County Minnesota; further, the OES had received a long comment letter from a citizen regarding a second project proposal, the Lakeswind Wind Power Plant in Clay, Becker and Ottertail Counties, Minnesota. This same commenter also wrote to the Commissioner of MDH to ask for an evaluation of health issues related to exposure to low frequency sound energy generated by wind turbines. The OES informed MDH that a white paper would have more general application and usefulness in guiding decision-making for future wind projects than a Contested Case Hearing on a particular project. (Note: A Contested Case Hearing is an evidentiary hearing before an Administrative Law Judge, and may be ordered by regulatory authorities, in this case the PUC, in order to make a determination on disputed issues of material fact. The OES advises the PUC on need and permitting issues related to large energy facilities.)

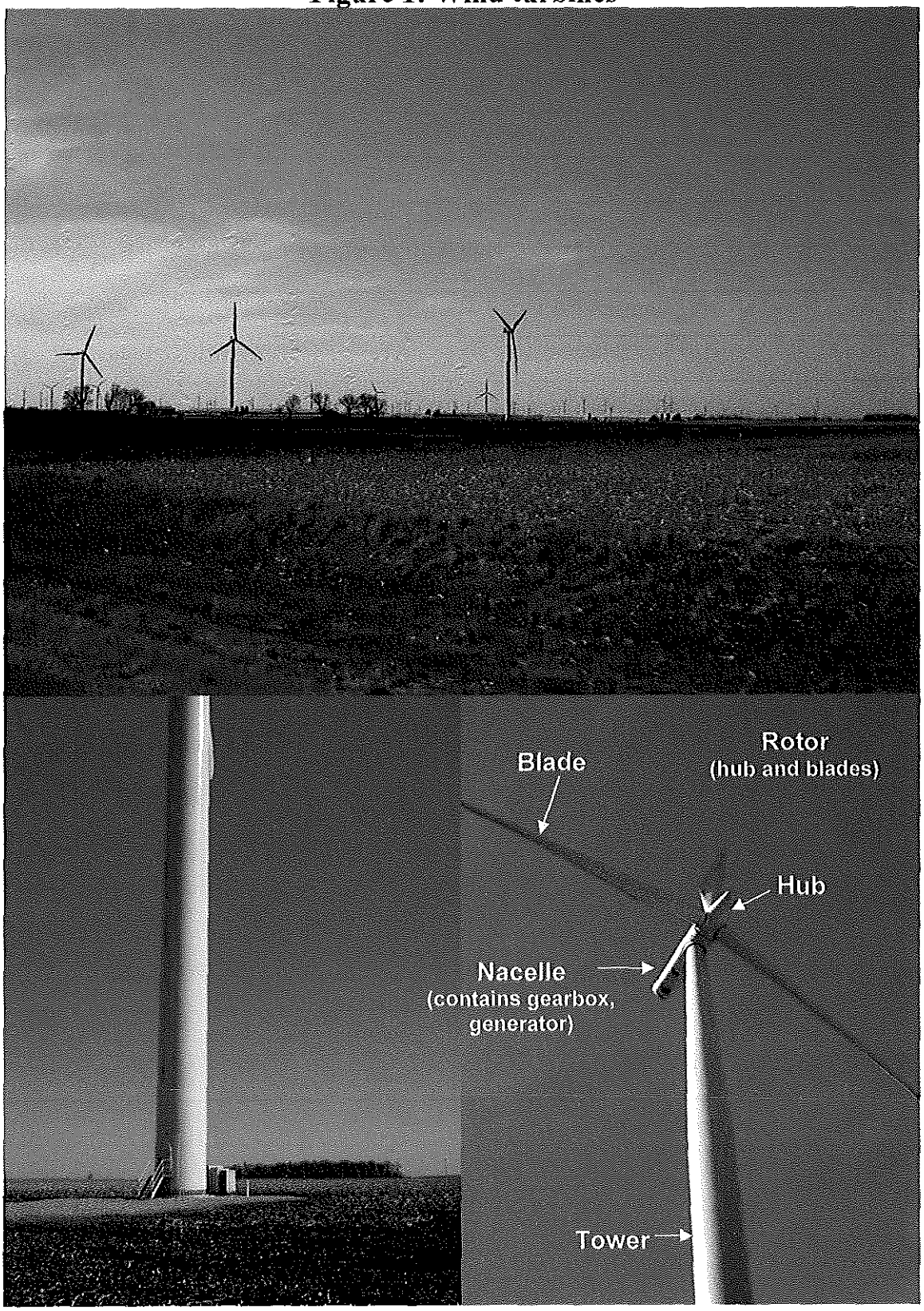
In early March 2009, MDH agreed to evaluate health impacts from wind turbine noise and low frequency vibrations. In discussion with OES, MDH also proposed to examine experiences and policies of other states and countries. MDH staff appeared at a hearing before the PUC on March 19, 2009, and explained the purpose and use of the health evaluation. The Commissioner replied to the citizen letter, affirming that MDH would perform the requested review.

A brief description of the two proposed wind power projects, and a brief discussion of health issues to be addressed in this report appear below.

A. Site Proposals

Wind turbines are huge and expensive machines requiring large capitol investment. Figure 1 shows some existing wind turbines in Minnesota. Large projects require control of extensive land area in order to optimize spacing of turbines to minimize turbulence at downwind turbines. Towers range up to 80 to 100 meters (260 to 325 feet), and blades can be up to 50 meters long (160 feet) (see Tetra Tech, 2008; WPL, 2008). Turbines are expected to be in place for 25-30 years.

Figure 1: Wind turbines



1. Bent Tree Wind Project in Freeborn County

This is a proposal by the Wisconsin Power and Light Company (WPL) for a 400 megawatt (MW) project in two phases of 200 MW each (requiring between 80 and 130 wind turbines). The cost of the first phase is estimated at $497 million. The project site area would occupy approximately 40 square miles located 4 miles north and west of the city of Albert Lea, approximately 95 miles south of Minneapolis (Figure 2) (WPL, 2008). The Project is a LWECS and a Certificate of Need (CON) from the PUC is required (*Minnesota Statutes 216B.243)*. The PUC uses the CON process to determine the basic type of facility (if any) to be constructed, the size of the facility, and when the project will be in service. The CON process involves a public hearing and preparation of an Environmental Report by the OES. The CON process generally takes a year, and is required before a facility can be permitted.

WPL is required to develop a site layout that optimizes wind resources. Accordingly, project developers are required to control areas at least 5 rotor diameters in the prevailing (north-south) wind directions (between about 1300 and 1700 feet for the 1.5 to 2.5 MW turbines under consideration for the project) and 3 rotor diameters in the crosswind (east-west) directions (between about 800 and 1000 feet). Thus, these are minimum setback distances from properties in the area for which easements have not been obtained. Further, noise rules promulgated by the Minnesota Pollution Control Agency (MPCA; *Minnesota Rules* Section 7030), specify a maximum nighttime noise in residential areas of 50 A-weighted decibels (dB(A). WPL has proposed a minimum setback of 1,000 feet from occupied structures in order to comply with the noise rule.

2. Noble Flat Hill Wind Park in Clay, Becker and Ottertail Counties

This is a LWECS proposed by Noble Flat Hill Windpark I (Noble), a subsidiary of Noble Environmental Power, based in Connecticut. The proposal is for a 201 MW project located 12 miles east of the City of Moorhead, about 230 miles northwest of Minneapolis (Figure 3) (Tetra Tech, 2008). The cost of the project is estimated to be between $382 million and $442 million. One hundred thirty-four GE 1.5 MW wind turbines are planned for an area of 11,000 acres (about 17 square miles); the site boundary encompasses approximately 20,000 acres. Setback distances of a minimum of 700 feet are planned to comply with the 50 dB(A) noise limit. However, rotor diameters will be 77 meters (250 feet). Therefore, setback distances in the prevailing wind direction of 1,300 feet are planned for properties where owners have not granted easements. Setbacks of 800 feet are planned in the crosswind direction.

Figure 2: Bent Tree Wind Project, Freeborn County

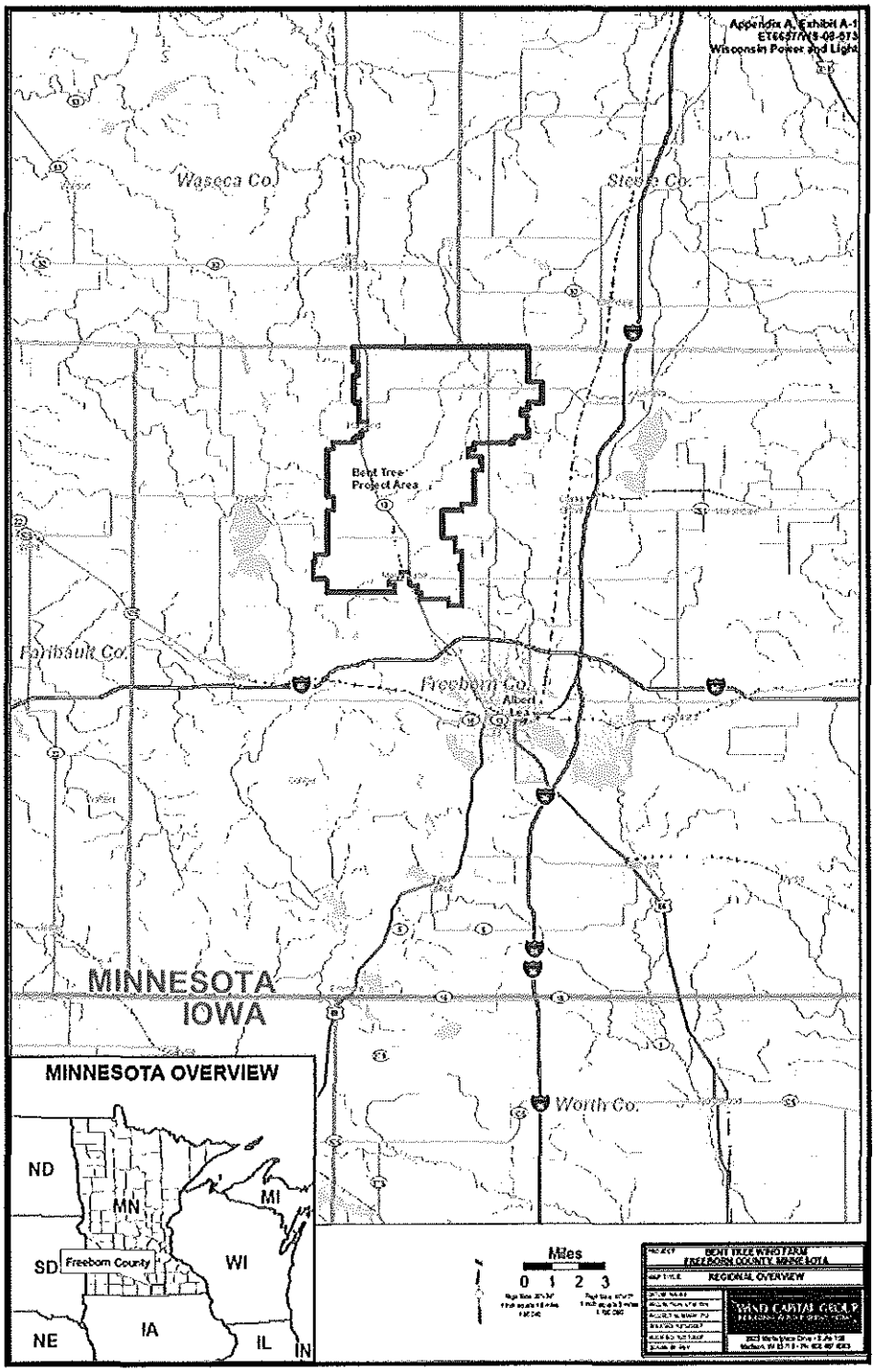
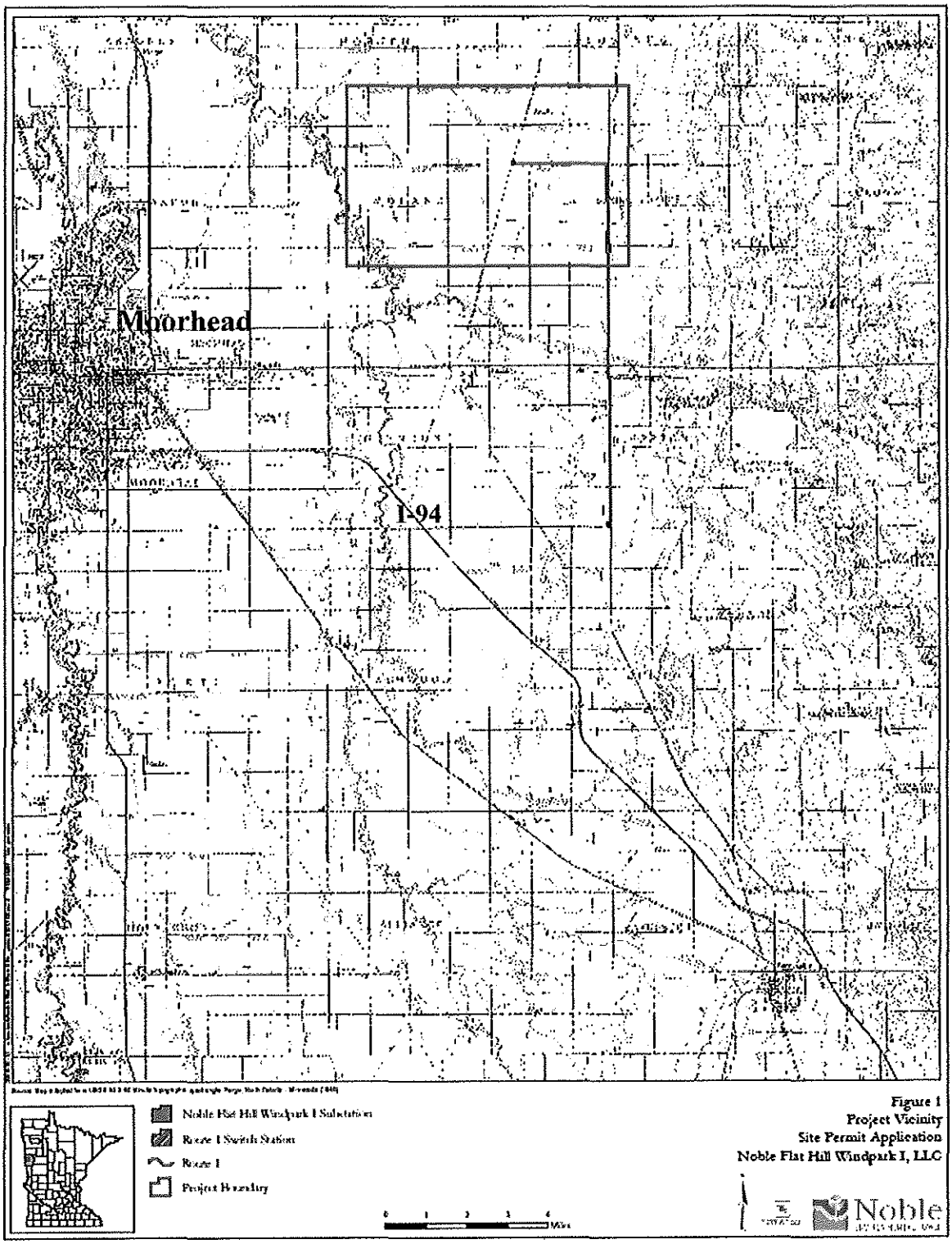


Figure 3: Noble Flat Hill Wind Park, Clay, Becker, Ottertail Counties



B. Health Issues

The National Research Council of the National Academies (NRC, 2007) has reviewed impacts of wind energy projects on human health and well-being. The NRC begins by observing that wind projects, just as other projects, create benefits and burdens, and that concern about impacts is natural when the source is near one's home. Further, the NRC notes that different people have different values and levels of sensitivity. Impacts noted by the NRC that may have the most effect on health include noise and low frequency vibration, and shadow flicker. While noise and vibration are the main focus of this paper, shadow flicker (casting of moving shadows on the ground as wind turbine blades rotate) will also be briefly discussed.

Noise originates from mechanical equipment inside the nacelles of the turbines (gears, generators, etc.) and from interaction of turbine blades with wind. Newer wind turbines generate minimal noise from mechanical equipment. The most problematic wind turbine noise is a broadband "whooshing" sound produced by interaction of turbine blades with the wind. Newer turbines have upwind rotor blades, minimizing low frequency "infrasound" (i.e., air pressure changes at frequencies below 20-100 Hz that are inaudible). However, the NRC notes that during quiet conditions at night, low frequency modulation of higher frequency sounds, such as are produced by turbine blades, is possible. The NRC also notes that effects of low frequency (infrasound) vibration (less than 20 Hz) on humans are not well understood, but have been asserted to disturb some people.

Finally, the NRC concludes that noise produced by wind turbines is generally not a major concern beyond a half mile. Issues raised by the NRC report and factors that may affect distances within which wind turbine noise may be problematic are discussed more extensively below.

II. Elementary Characteristics of Sensory Systems and Sound

A. Sensory Systems

1. Hearing

Sensory systems respond to a huge dynamic range of physical stimuli within a relatively narrow dynamic range of mechanical, chemical and/or neuronal (electrophysiological) output. Compression of the dynamic range is accomplished by systems that respond to logarithmic increases in intensity of physical stimuli with arithmetically increasing sensory responses. This general property is true for hearing, and has been recognized since at least the mid-19th century (see e.g., Woodworth and Schlosberg, 1964). "Loudness" is the sensory/perceptual correlate of the physical intensity of air pressure changes to which the electro-mechanical transducers in the ear and associated neuronal pathways are sensitive. Loudness increases as the logarithm of air pressure, and it is convenient to relate loudness to a reference air pressure (in dyne/cm^2 or pascals) in tenths of logarithmic units (decibels; dB). Further, the ear is sensitive to only a relatively narrow frequency range of air pressure changes: those between approximately 20 and 20,000 cycles per second or Herz (Hz). In fact, sensitivity varies within this range, so that the sound pressure level relative to a reference value that is audible in the middle of the range

(near 1,000 Hz) is about 4 orders of magnitude smaller than it is at 20 Hz and about 2 orders of magnitude smaller than at 20,000 Hz (Fig. 3). Accordingly, measurements of loudness in dB generally employ filters to equalize the loudness of sounds at different frequencies or "pitch." To approximate the sensitivity of the ear, A-weighted filters weigh sound pressure changes at frequencies in the mid-range more than those at higher or lower frequencies. When an A-weighted filter is used, loudness is measured in dB(A). This is explained in greater detail in Section B below.

The ear accomplishes transduction of sound through a series of complex mechanisms (Guyton, 1991). Briefly, sound waves move the eardrum (tympanic membrane), which is in turn connected to 2 small bones (ossicles) in the middle ear (the malleus and incus). A muscle connected to the malleus keeps the tympanic membrane tensed, allowing efficient transmission to the malleus of vibrations on the membrane. Ossicle muscles can also relax tension and attenuate transmission. Relaxation of muscle tension on the tympanic membrane protects the ear from very loud sounds and also masks low frequency sounds, or much background noise. The malleus and incus move a third bone (stapes). The stapes in turn applies pressure to the fluid of the cochlea, a snail-shaped structure imbedded in temporal bone. The cochlea is a complex structure, but for present purposes it is sufficient to note that pressure changes or waves of different frequencies in cochlear fluid result in bending of specialized hair cells in regions of the cochlea most sensitive to different frequencies or pitch. Hair cells are directly connected to nerve fibers in the vestibulocochlear nerve (VIII cranial nerve).

Transmission of sound can also occur directly through bone to the cochlea. This is a very inefficient means of sound transmission, unless a device (e.g. a tuning fork or hearing aid) is directly applied to bone (Guyton, 1991).

2. Vestibular System

The vestibular system reacts to changes in head and body orientation in space, and is necessary for maintenance of equilibrium and postural reflexes, for performance of rapid and intricate body movements, and for stabilizing visual images (via the vestibulo-ocular reflex) as the direction of movement changes (Guyton, 1991).

The vestibular apparatus, like the cochlea, is imbedded in temporal bone, and also like the cochlea, hair cells, bathed in vestibular gels, react to pressure changes and transmit signals to nerve fibers in the vestibulocochlear nerve. Two organs, the utricle and saccule, called otolith organs, integrate information about the orientation of the head with respect to gravity. Otoliths are tiny stone-like crystals, embedded in the gels of the utricle and saccule, that float as the head changes position within the gravitational field. This movement is translated to hair cells. Three semi-circular canals, oriented at right angles to each other, detect head rotation. Stimulation of the vestibular apparatus is not directly detected, but results in activation of motor reflexes as noted above (Guyton, 1991).

Like the cochlea, the vestibular apparatus reacts to pressure changes at a range of frequencies; optimal frequencies are lower than for hearing. These pressure changes can be caused by body movements, or by direct bone conduction (as for hearing, above) when vibration is applied directly to the temporal bone (Todd et al., 2008). These investigators

found maximal sensitivity at 100 Hz, with some sensitivity down to 12.5 Hz. The saccule, located in temporal bone just under the footplate of the stapes, is the most sound-sensitive of the vestibular organs (Halmagyi et al., 2004). It is known that brief loud clicks (90-95 dB) are detected by the vestibular system, even in deaf people. However, we do not know what the sensitivity of this system is through the entire range of sound stimuli.

While vestibular system activation is not directly felt, activation may give rise to a variety of sensations: vertigo, as the eye muscles make compensatory adjustments to rapid angular motion, and a variety of unpleasant sensations related to internal organs. In fact, the vestibular system interacts extensively with the "autonomic" nervous system, which regulates internal body organs (Balaban and Yates, 2004). Sensations and effects correlated with intense vestibular activation include nausea and vomiting and cardiac arrhythmia, blood pressure changes and breathing changes.

While these effects are induced by relatively intense stimulation, it is also true that A-weighted sound measurements attuned to auditory sensitivity, will underweight low frequencies for which the vestibular system is much more sensitive (Todd et al., 2008). Nevertheless, activation of the vestibular system *per se* obviously need not give rise to unpleasant sensations. It is not known what stimulus intensities are generally required for for autonomic activation at relatively low frequencies, and it is likely that there is considerable human variability and capacity to adapt to vestibular challenges.

B. Sound

1. Introduction

Sound is carried through air in compression waves of measurable frequency and amplitude. Sound can be tonal, predominating at a few frequencies, or it can contain a random mix of a broad range of frequencies and lack any tonal quality (white noise). Sound that is unwanted is called noise.

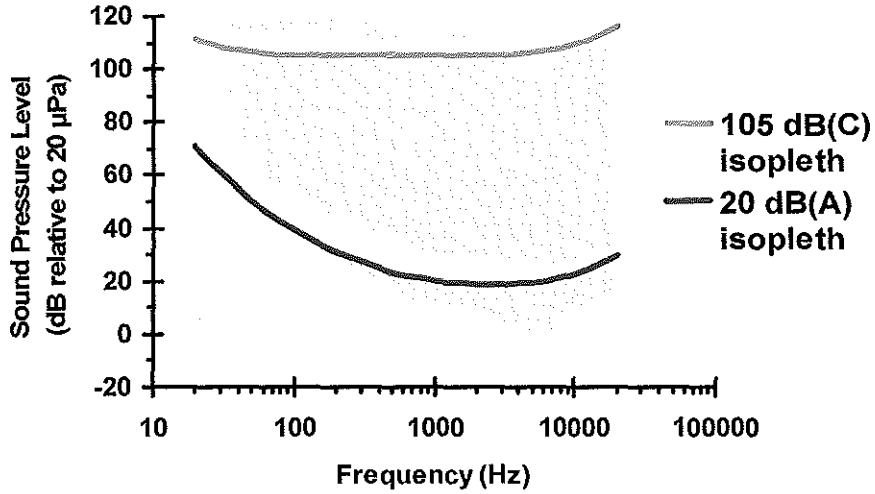
Audible Frequency Sound

Besides frequency sensitivity (between 20 and 20,000 Hz), humans are also sensitive to changes in the amplitude of the signal (compression waves) within this audible range of frequencies. Increasing amplitude, or increasing sound pressure, is perceived as increasing volume or loudness. The sound pressure level in air (SPL) is measured in micro Pascals (μPa). SPLs are typically converted in measuring instruments and reported as decibels (dB) which is a log scale, relative unit (see above). When used as the unit for sound, dBs are reported relative to a SPL of 20 μPa. Twenty μPa is used because it is the approximate threshold of human hearing sensitivity at about 1000 Hz. Decibels relative to 20 μPa are calculated from the following equation:

$$\text{Loudness (dB)} = \text{Log}\left((\text{SPL} / 20\ \mu\text{Pa})^2\right) * 10$$

Figure 4 shows the audible range of normal human hearing. Note that while the threshold sensitivity varies over the frequency range, at high SPLs sensitivity is relatively consistent over audible frequencies.

Figure 4: Audible Range of Human Hearing



Equivalence curves for different frequencies, when sound meter readings in dB are taken with A or C-weighting filters. (Adapted from EPD Hong Kong SAR, 2009)

Sub-Audible Frequency Sound

Sub-audible frequency sound is often called infrasound. It may be sensed by people, similar to audible sound, in the cochlear apparatus in the ear; it may be sensed by the vestibular system which is responsible for balance and physical equilibrium; or it may be sensed as vibration.

Resonance and modulation

Sound can be attenuated as it passes through a physical structure. However, because the wavelength of low frequency sound is very long (the wavelength of 40 Hz in air at sea level and room temperature is 8.6 meters or 28 ft), low frequencies are not effectively attenuated by walls and windows of most homes or vehicles. (For example, one can typically hear the bass, low frequency music from a neighboring car at a stoplight, but not the higher frequencies.) In fact, it is possible that there are rooms within buildings exposed to low frequency sound or noise where some frequencies may be amplified by resonance (e.g. ½ wavelength, ¼ wavelength) within the structure. In addition, low frequency sound can cause vibrations within a building at higher, more audible frequencies as well as throbbing or rumbling.

Sounds that we hear generally are a mixture of different frequencies. In most instances these frequencies are added together. However, if the source of the sound is not constant, but changes over time, the effect can be re-occurring pulses of sound or low frequency modulation of sound. This is the type of sound that occurs from a steam engine, a jack hammer, music and motor vehicle traffic. Rhythmic, low frequency pulsing of higher frequency noise (like the sound of an amplified heart beat) is one type of sound that can be caused by wind turbine blades under some conditions.

2. Human Response to Low Frequency Stimulation

There is no consensus whether sensitivity below 20 Hz is by a similar or different mechanism than sensitivity and hearing above 20 Hz (Reviewed by Møller and Pedersen, 2004). Possible mechanisms of sensation caused by low frequencies include bone conduction at the applied frequencies, as well as amplification of the base frequency and/or harmonics by the auditory apparatus (eardrum and ossicles) in the ear. Sensory thresholds are relatively continuous, suggesting (but not proving) a similar mechanism above and below 20 Hz. However, it is clear that cochlear sensitivity to infrasound (< 20 Hz) is considerably less than cochlear sensitivity to audible frequencies.

Møller and Pedersen (2004) reviewed human sensitivity at low and infrasonic frequencies. The following findings are of interest:

- When whole-body pressure-field sensitivity is compared with ear-only (earphone) sensitivity, the results are very similar. These data suggest that the threshold sensitivity for low frequency is through the ear and not vestibular.
- Some individuals have extraordinary sensitivity at low frequencies, up to 25 dB more sensitive than the presumed thresholds at some low frequencies.
- While population average sensitivity over the low frequency range is smooth, sound pressure thresholds of response for individuals do not vary smoothly but are inconsistent, with peaks and valleys or "microstructures". Therefore the sensitivity response of individuals to different low frequency stimulation may be difficult to predict.
- Studies of equal-loudness-levels demonstrate that as stimulus frequency decreases through the low frequencies, equal-loudness lines compress in the dB scale. (See Figure 4 as an example of the relatively small difference in auditory SPL range between soft and loud sound at low frequencies).
- The hearing threshold for pure tones is different than the hearing threshold for white noise at the same total sound pressure.

3. Sound Measurements

Sound measurements are taken by instruments that record sound pressure or the pressure of the compression wave in the air. Because the loudness of a sound to people is usually the primary interest in measuring sound, normalization schemes or filters have been applied to absolute measurements. dB(A) scaling of sound pressure measurements was intended to normalize readings to equal loudness over the audible range of frequencies at low loudness. For example, a 5,000 Hz (5 kHz) and 20 dB(A) tone is expected to have the same intensity or loudness as a 100 Hz, 20 dB(A) tone. However, note that the absolute sound pressures would be about 20,000 μPa and 40,000 μPa, respectively, or about a difference of 20 dB (relative to 20 μPa), or as it is sometimes written 20 dB(linear).

Most sound is not a single tone, but is a mixture of frequencies within the audible range. A sound meter can add the total SPLs for all frequencies; in other words, the dB readings over the entire spectrum of audible sound can be added to give a single loudness metric. If sound is reported as A-weighted, or dB(A), it is a summation of the dB(A) scaled sound pressure from 20 Hz to 20 kHz.

In conjunction with the dB(A) scale, the dB(B) scale was developed to approximate equal loudness to people across audible frequencies at medium loudness, and dB(C) was developed to approximate equal-loudness for loud environments. Figure 4 shows isopleths for 20 dB(A) and 105 dB(C). While dB(A), dB(B), dB(C) were developed from empirical data at the middle frequencies, at the ends of the curves these scales were extrapolated, or sketched in, and are not based on experimental or observational data (Berglund et al., 1996). As a result, data in the low frequency range (and probably the highest audible frequencies as well) cannot be reliably interpreted using these scales. The World Health Organization (WHO, 1999) suggests that A-weighting noise that has a large low frequency component is not reliable assessment of loudness.

The source of the noise, or the noise signature, may be important in developing equal-loudness schemes at low frequencies. C-weighting has been recommended for artillery noise, but a linear, unweighted scale may be even better at predicting a reaction (Berglund et al., 1996). A linear or equal energy rating also appears to be the most effective predictor of reaction to low frequency noise in other situations, including blast noise from mining. The implication of the analysis presented by Berglund et al. (1996) is that annoyance from non-tonal noise should not be estimated from a dB(A) scale, but may be better evaluated using dB(C), or a linear non-transformed scale.

However, as will be discussed below, a number of schemes use a modified dB(A) scale to evaluate low frequency noise. These schemes differ from a typical use of the dB(A) scale by addressing a limited frequency range below 250 Hz, where auditory sensitivity is rapidly changing as a function of frequency (see Figure 4).

III. Exposures of Interest

A. Noise From Wind Turbines

1. Mechanical noise

Mechanical noise from a wind turbine is sound that originates in the generator, gearbox, yaw motors (that intermittently turn the nacelle and blades to face the wind), tower ventilation system and transformer. Generally, these sounds are controlled in newer wind turbines so that they are a fraction of the aerodynamic noise. Mechanical noise from the turbine or gearbox should only be heard above aerodynamic noise when they are not functioning properly.

2. Aerodynamic noise

Aerodynamic noise is caused by wind passing over the blade of the wind turbine. The tip of a 40-50 meter blade travels at speeds of over 140 miles per hour under normal operating conditions. As the wind passes over the moving blade, the blade interrupts the laminar flow of air, causing turbulence and noise. Current blade designs minimize the amount of turbulence and noise caused by wind, but it is not possible to eliminate turbulence or noise.

Aerodynamic noise from a wind turbine may be underestimated during planning. One source of error is that most meteorological wind speed measurements noted in wind farm literature are taken at 10 meters above the ground. Wind speed above this elevation, in

much less than the difference at night (1.85 m/s (4.1 mph) and 4.5 m/s (10 mph), respectively). As a result one would expect that the blade angle can be better tuned to the wind speed during the daytime. Consequently, blade noise would be greater at night.

A number of reports have included discussion of aerodynamic modulation (van den Berg, 2005; UK Department of Transport and Industry, 2006; UK Department for Business Enterprise and Regulatory Reform, 2007; van den Berg, 2008). They suggest that aerodynamic modulation is typically underestimated when noise estimates are calculated. In addition, they suggest that detailed modeling of wind, terrain, land use and structures may be used to predict whether modulation of aerodynamic noise will be a problem at a proposed wind turbine site.

4. Wind farm noise

The noise from multiple turbines similarly distant from a residence can be noticeably louder than a lone turbine simply through the addition of multiple noise sources. Under steady wind conditions noise from a wind turbine farm may be greater than noise from the nearest turbine due to synchrony between noise from more than one turbine (van den Berg, 2005). Furthermore, if the dominant frequencies (including aerodynamic modulation) of different turbines vary by small amounts, an audible beat or dissonance may be heard when wind conditions are stable.

B. Shadow Flicker

Rhythmic light flicker from the blades of a wind turbine casting intermittent shadows has been reported to be annoying in many locations (NRC, 2007; Large Wind Turbine Citizens Committee, 2008). (Note: Flashing light at frequencies around 1 Hz is too slow to trigger an epileptic response.)

Modeling conducted by the Minnesota Department of Health suggests that a receptor 300 meters perpendicular to, and in the shadow of the blades of a wind turbine, can be in the flicker shadow of the rotating blade for almost 1½ hour a day. At this distance a blade may completely obscure the sun each time it passes between the receptor and the sun. With current wind turbine designs, flicker should not be an issue at distances over 10 rotational diameters (~1000 meters or 1 km (0.6 mi) for most current wind turbines). This distance has been recommended by the Wind Energy Handbook (Burton et al., 2001) as a minimum setback distance in directions that flicker may occur, and has been noted in the Bent Tree Permit Application (WPL, 2008).

Shadow flicker is a potential issue in the mornings and evenings, when turbine noise may be masked by ambient sounds. While low frequency noise is typically an issue indoors, shadow flicker can be an issue both indoors and outdoors when the sun is low in the sky. Therefore, shadow flicker may be an issue in locations other than the home.

Ireland recommends wind turbines setbacks of at least 300 meters from a road to decrease driver distraction (Michigan State University, 2004). The NRC (2007) recommends that shadow flicker is addressed during the preliminary planning stages of a wind turbine project.

IV. Impacts of Wind Turbine Noise

A. Potential Adverse Reaction to Sound

Human sensitivity to sound, especially to low frequency sound, is variable. Individuals have different ranges of frequency sensitivity to audible sound; different thresholds for each frequency of audible sound; different vestibular sensitivities and reactions to vestibular activation; and different sensitivity to vibration.

Further, sounds, such as repetitive but low intensity noise, can evoke different responses from individuals. People will exhibit variable levels of annoyance and tolerance for different frequencies. Some people can dismiss and ignore the signal, while for others, the signal will grow and become more apparent and unpleasant over time (Moreira and Bryan, 1972; Bryan and Tempest, 1973). These reactions may have little relationship to will or intent, and more to do with previous exposure history and personality.

Stress and annoyance from noise often do not correlate with loudness. This may suggest, in some circumstances, other factors impact an individual's reaction to noise. A number of reports, cited in Staples (1997), suggest that individuals with an interest in a project and individuals who have some control over an environmental noise are less likely to find a noise annoying or stressful.

Berglund et al. (1996) reviewed reported health effects from low frequency noise. Loud noise from any source can interfere with verbal communication and possibly with the development of language skills. Noise may also impact mental health. However, there are no studies that have looked specifically at the impact of low frequency noise on communication, development of language skills and mental health. Cardiovascular and endocrine effects have been demonstrated in studies that have looked at exposures to airplane and highway noise. In addition, possible effects of noise on performance and cognition have also been investigated, but these health studies have not generally looked at impacts specifically from low frequency noise. Noise has also been shown to impact sleep and sleep patterns, and one study demonstrated impacts from low frequency noise in the range of 72 to 85 dB(A) on chronic insomnia (Nagai et al., 1989 as reported in Berglund et al., 1996).

Case studies have suggested that health can be impacted by relatively low levels of low frequency noise. But it is difficult to draw general conclusions from case studies. Feldmann and Pitten (2004)) describe a family exposed during the winter to low frequency noise from a nearby heating plant. Reported health impacts were: "indisposition, decrease in performance, sleep disturbance, headache, ear pressure, crawl parästhesy [crawling, tingling or numbness sensation on the skin] or shortness of breath."

Annoyance, unpleasant sounds, and complaints

Reported health effects from low frequency stimulation are closely associated with annoyance from audible noise. "There is no reliable evidence that infrasounds below the hearing threshold produce physiological or psychological effects" (WHO, 1999). It has not been shown whether annoyance is a symptom or an accessory in the causation of

health impacts from low frequency noise. Studies have been conducted on some aspects of low frequency noise that can cause annoyance.

Noise complaints are usually a reasonable measure of annoyance with low frequency environmental noise. Leventhall (2004) has reviewed noise complaints and offers the following conclusions:

> " The problems arose in quiet rural or suburban environments
> The noise was often close to inaudibility and heard by a minority of people
> The noise was typically audible indoors and not outdoors
> The noise was more audible at night than day
> The noise had a throb or rumble characteristic
> The main complaints came from the 55-70 years age group
> The complainants had normal hearing.
> Medical examination excluded tinnitus.
>
> " These are now recognised as classic descriptors of low frequency noise problems."

These observations are consistent with what we know about the propagation of low intensity, low frequency noise. Some people are more sensitive to low frequency noise. The difference, in dB, between soft (acceptable) and loud (annoying) noise is much less at low frequency (see Figure 4 audible range compression). Furthermore, during the daytime, and especially outdoors, annoying low frequency noise can be masked by high frequency noise.

The observation that "the noise was typically audible indoors and not outdoors" is not particularly intuitive. However, as noted in a previous section, low frequencies are not well attenuated when they pass through walls and windows. Higher frequencies (especially above 1000 Hz) can be efficiently attenuated by walls and windows. In addition, low frequency sounds may be amplified by resonance within rooms and halls of a building. Resonance is often characterized by a throbbing or a rumbling, which has also been associated with many low frequency noise complaints.

Low frequency noise, unlike higher frequency noise, can also be accompanied by shaking, vibration and rattling. In addition, throbbing and rumbling may be apparent in some low frequency noise. While these noise features may not be easily characterized, numerous studies have shown that their presence dramatically lowers tolerance for low frequency noise (Berglund et al., 1996).

As reviewed in Leventhall (2003), a study of industrial exposure to low frequency noise found that fluctuations in total noise averaged over 0.5, 1.0 and 2.0 seconds correlated with annoyance (Holmberg et al., 1997). This association was noted elsewhere and led (Broner and Leventhall, 1983) to propose a 3dB "penalty" be added to evaluations of annoyance in cases where low frequency noise fluctuated.

In another laboratory study with test subjects controlling loudness, 0.5 – 4 Hz modulation of low frequency noise was found to be more annoying than non-modulated low

frequency noise. On average test subjects found modulated noise to be similarly annoying as a constant tone 12.9 dB louder (Bradley, 1994).

B. Studies of Wind Turbine Noise Impacts on People

1. Swedish Studies

Two studies in Sweden collected information by questionnaires from 341 and 754 individuals (representing response rates of 68% and 58%, respectively), and correlated responses to calculated exposure to noise from wind farms (Pedersen and Waye, 2004; Pedersen, 2007; Pedersen and Persson, 2007). Both studies showed that the number of respondents perceiving the noise from the wind turbines increased as the calculated noise levels at their homes increased from less than 32.5 dB(A) to greater than 40 dB(A). Annoyance appeared to correlate or trend with calculated noise levels. Combining the data from the two studies, when noise measurements were greater than 40 dB(A), about 50% of the people surveyed (22 of 45 people) reported annoyance. When noise measurements were between 35 and 40 dB(A) about 24% reported annoyance (67 of 276 people). Noise annoyance was more likely in areas that were rated as quiet and in areas where turbines were visible. In one of the studies, 64% respondents who reported noise annoyance also reported sleep disturbance; 15% of respondents reported sleep disturbance without annoyance.

2. United Kingdom Study

Moorhouse et al. (UK Department for Business Enterprise and Regulatory Reform, 2007) evaluated complaints about wind farms. They found that 27 of 133 operating wind farms in the UK received formal complaints between 1991 and 2007. There were a total of 53 complainants for 16 of the sites for which good records were available. The authors of the report considered that many complaints in the early years were for generator and gearbox noise. However, subjective analyses of reports about noise ("like a train that never gets there", "distant helicopter", "thumping", "thudding", "pulsating", "thumping", "rhythmical beating", and "beating") suggested that aerodynamic modulation was the likely cause of complaints at 4 wind farms. The complaints from 8 other wind farms may have had "marginal" association with aerodynamic modulation noise.

Four wind farms that generated complaints possibly associated with aerodynamic modulation were evaluated further. These wind farms were commissioned between 1999 and 2002. Wind direction, speed and times of complaints were associated for 2 of the sites and suggested that aerodynamic modulation noise may be a problem between 7% and 25% of the time. Complaints at 2 of the farms have stopped and at one farm steps to mitigate aerodynamic modulation (operational shutdown under certain meteorological conditions) have been instituted.

3. Netherlands Study

F. van den Berg et al. (2008) conducted a postal survey of a group selected from all residents in the Netherlands within 2.5 kilometers (km) of a wind turbine. In all, 725 residents responded (37%). Respondents were exposed to sound between 24 and 54 dB(A). The percentage of respondents annoyed by sound increased from 2% at levels of 30 dB(A) or less, up to 25% at between 40 and 45 dB. Annoyance decreased above 45 dB. Most residents exposed above 45 dB(A) reported economic benefits from the

turbines. However, at greater than 45 dB(A) more respondents reported sleep interruption. Respondents tended to report more annoyance when they also noted a negative effect on landscape, and ability to see the turbines was strongly related to the probability of annoyance.

4. Case Reports

A number of un-reviewed reports have catalogued complaints of annoyance and some more severe health impacts associated with wind farms. These reports do not contain measurements of noise levels, and do not represent random samples of people living near wind turbines, so they cannot assess prevalence of complaints. They do generally show that in the people surveyed, complaints are more likely the closer people are to the turbines. The most common complaint is decreased quality of life, followed by sleep loss and headache. Complaints seem to be either from individuals with homes quite close to turbines, or individuals who live in areas subject to aerodynamic modulation and, possibly, enhanced sound propagation which can occur in hilly or mountainous terrain. In some of the cases described, people with noise complaints also mention aesthetic issues, concern for ecological effects, and shadow flicker concerns. Not all complaints are primarily about health.

Harry (2007) describes a meeting with a couple in Cornwall, U.K. who live 400 meters from a wind turbine, and complained of poor sleep, headaches, stress and anxiety. Harry subsequently investigated 42 people in various locations in the U.K. living between 300 meters and 2 kilometers (1000 feet to 1.2 miles) from the nearest wind turbine. The most frequent complaint (39 of 42 people) was that their quality of life was affected. Headaches were reported by 27 people and sleep disturbance by 28 people. Some people complained of palpitations, migraines, tinnitus, anxiety and depression. She also mentions correspondence and complaints from people in New Zealand, Australia, France, Germany, Netherlands and the U.S.

Phipps (2007) discusses a survey of 619 households living up to 10 kilometers (km; 6 miles) from wind farms in mountainous areas of New Zealand. Most respondents lived between 2 and 2.5 km from the turbines (over 350 households). Most respondents (519) said they could see the turbines from their homes, and 80% of these considered the turbines intrusive, and 73% considered them unattractive. Nine percent said they were affected by flicker. Over 50% of households located between 2 and 2.5 km and between 5 and 9.5 km reported being able to hear the turbines. In contrast, fewer people living between 3 and 4.5 km away could hear the turbines. Ninety-two households said that their quality of life was affected by turbine noise. Sixty-eight households reported sleep disturbances: 42 of the households reported occasional sleep disturbances, 21 reported frequent sleep disturbances and 5 reported sleep disturbances most of the time.

The Large Wind Turbine Citizens Committee for the Town of Union (2008) documents complaints from people living near wind turbines in Wisconsin communities and other places in the U.S. and U.K. Contained in this report is an older report prepared by the Wisconsin Public Service Corporation in 2001 in response to complaints in Lincoln County, Wisconsin. The report found essentially no exceedances of the 50 dB(A) requirement in the conditional use permit. The report did measure spectral data

accumulated over very short intervals (1 minute) in 1/3 octave bands at several sites while the wind turbines were functioning, and it is of interest that at these sites the sound pressure level at the lower frequencies (below 125 Hz) were at or near 50 dB(A).

Pierpont (2009) postulates wind turbine syndrome, consisting of a constellation of symptoms including headache, tinnitus, ear pressure, vertigo, nausea, visual blurring, tachycardia, irritability, cognitive problems and panic episodes associated with sensations of internal pulsation. She studied 38 people in 10 families living between 1000 feet and slightly under 1 mile from newer wind turbines. She proposes that the mechanism for these effects is disturbance of balance due to "discordant" stimulation of the vestibular system, along with visceral sensations, sensations of vibration in the chest and other locations in the body, and stimulation of the visual system by moving shadows. Pierpont does report that her study subjects maintain that their problems are caused by noise and vibration, and the most common symptoms reported are sleep disturbances and headache. However, 16 of the people she studied report symptoms consistent with (but not necessarily caused by) disturbance of equilibrium.

V. Noise Assessment and Regulation

1. Minnesota noise regulation

The Minnesota Noise Pollution Control Rule is accessible online at: https://www.revisor.leg.state.mn.us/rules/?id=7030 . A summary of the Minnesota Pollution Control Agency (MPCA) noise guidance can be found online at: http://www.pca.state.mn.us/programs/noise.html . The MPCA standards require A-weighting measurements of noise; background noise must be at least 10 dB lower than the noise source being measured. Different standards are specified for day and night, as well as standards that may not be exceeded for more than 10 percent of the time during any hour (L10) and 50 percent of the time during any hour (L50). Household units, including farm houses, are Classification 1 land use. The following are the Class 1 noise limits:

Table 1: Minnesota Class 1 Land Use Noise Limits

Daytime		Nighttime	
L50	L10	L50	L10
60 dB(A)	65 dB(A)	50 dB(A)	55 dB(A)

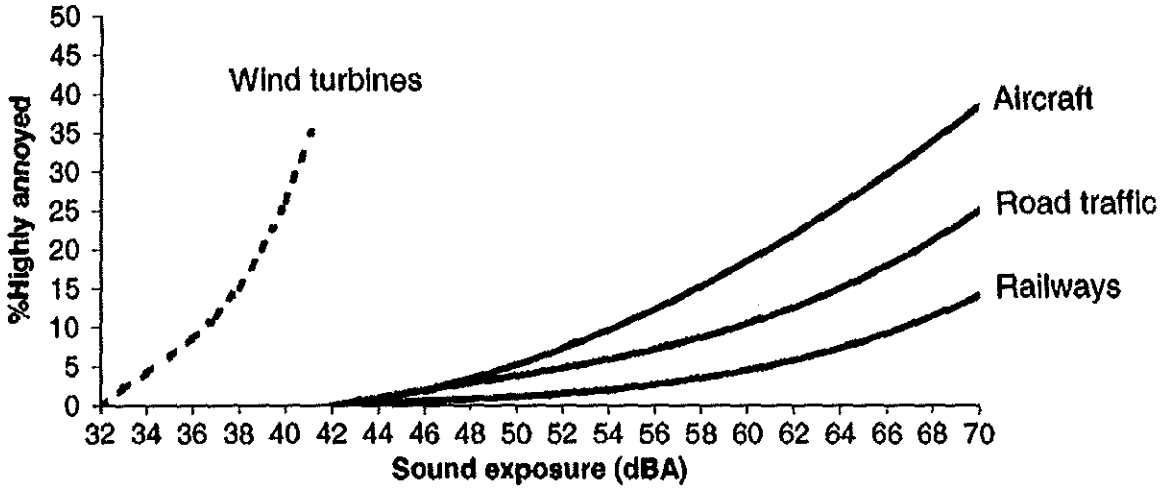
These noise limits are single number limits that rely on the measuring instrument to apply an A-weighting filter over the entire presumed audible spectrum of frequencies (20 Hz to 20 KHz) and then integrating that signal. The result is a single number that characterizes the audible spectrum noise intensity.

2. Low frequency noise assessment and regulation

Pedersen and Waye (2004) looked at the relationship between total dB(A) sound pressure and the annoyance of those who are environmentally exposed to noise from different sources. Figure 6 demonstrates the difficulty in using total dB(A) to evaluate annoyance. Note how lower noise levels (dB(A)) from wind turbines engenders annoyance similar to

much higher levels of noise exposure from aircraft, road traffic and railroads. Sound impulsiveness, low frequency noise and persistence of the noise, as well as demographic characteristics may explain some of the difference.

Figure 6: Annoyance associated with exposure to different environmental noises



Reprinted with permission from Pedersen, E. and K.P. Waye (2004). Perception and annoyance due to wind turbine noise–a dose-response relationship. The Journal of the Acoustical Society of America 116: 3460. Copyright 2004, Acoustical Society of America.

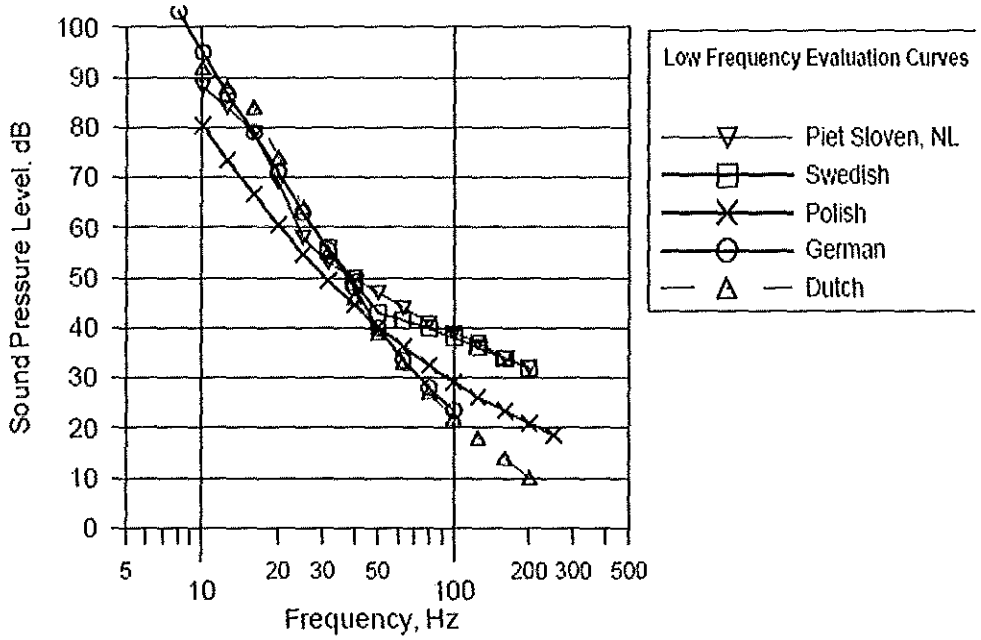
Kjellberg et al. (1997) looked at the ability of different full spectrum weighting schemes to predict annoyance caused by low frequency audio noise. They found that dB(A) is the worst predictor of annoyance of available scales. However, if 6 dB ("penalty") is added to dB(A) when dB(C) – dB(A) is greater than 15 dB, about 71% of the predictions of annoyance are correct. It is important to remember that integrated, transformed measurements of SPL (e.g. dB(A), dB(C)) do not measure frequencies below 20 Hz. While people detect stimuli below 20 Hz, as discussed in above sections, these frequencies are not measured using an A-weighted or C-weighted meter.

The World Health Organization (WHO) recommends that if dB(C) is greater than 10 dB more than dB(A), the low frequency components of the noise may be important and should be evaluated separately. In addition, WHO says "[i]t should be noted that a large proportion of low-frequency components in noise may increase considerably the adverse effects on health." (WHO, 1999)

Many governments that regulate low frequency noise look at noise within bands of frequencies instead of summing the entire spectrum. A study by Poulsen and Mortensen (Danish Environmental Protection Agency, 2002) included a summary of low frequency noise guidelines. German, Swedish, Polish, and Dutch low frequency evaluation curves were compared (see Figure 7). While there are distinctions in how the evaluation curves are described, generally, these curves are sound pressure criterion levels for 1/3 octaves from about 8 Hz to 250 Hz. Exceedance in any 1/3 octave measurement suggests that the noise may be annoying. However, note that regulations associated with low frequency

noise can be quite complex and the regulatory evaluations associated with individual curves can be somewhat different.

Figure 7: 1/3 Octave Sound Pressure Level Low frequency Noise Evaluation Curves



(Danish Environmental Protection Agency, 2002)

The Danish low frequency evaluation requires measuring noise indoors with windows closed; SPL measurements are obtained in 1/3 octave bands and transformed using the A-weighting algorithm for all frequencies between 10 and 160 Hz. These values are then summed into a single metric called $L_{pA,LF}$. A 5 dB "penalty" is added to any noise that is "impulsive". Danish regulations require that 20 dB $L_{pA,LF}$ is not exceeded during the evening and night, and that 25 dB $L_{pA,LF}$ is not exceeded during the day.

Swedish guidance recommends analyzing 1/3 octave bands between 31.5 and 200 Hz inside a home, and comparing the values to a Swedish assessment curve. The Swedish curve is equal to the United Kingdom (UK) Department of Environment, Food and Rural Affairs (DEFRA) low frequency noise criterion curve for overlapping frequencies (31.5 – 160 Hz).

The German "A-level" method sums the A-weighted equivalent levels of 1/3 octave bands that exceed the hearing threshold from 10 – 80 Hz. If the noise is not tonal, the measurements are added. The total cannot exceed 25 dB at night and 35 dB during the day. A frequency-dependent adjustment is applied if the noise is tonal.

In the Poulsen and Mortensen, Danish EPA study (2002), 18 individuals reported annoyance levels when they were exposed through earphones in a controlled environment to a wide range of low frequency environmental noises, all attenuated down to 35 dB, as depicted in Table 2. Noise was simulated as if being heard indoors, filtering out noise at

higher frequencies and effectively eliminating all frequencies above 1600 Hz. Noise levels in 1/3 octave SPLs from 8 Hz to 1600 Hz were measured and low frequencies (below 250 Hz) were used to predict annoyance using 7 different methods (Danish, German A-level, German tonal, Swedish, Polish, Sloven, and C-level). Predictions of annoyance were compared with the subjective annoyance evaluations. Correlation coefficients for these analyses ranged from 0.64 to 0.94, with the best correlation in comparison with the Danish low frequency noise evaluation methods.

As would be expected, at 35 dB nominal (full spectrum) loudness, every low frequency noise source tested exceeded all of the regulatory standards noted in the Danish EPA report. Table 2 shows the Danish and Swedish regulatory exceedances of the different 35 dB nominal (full spectrum) noise.

Table 2: 35 dB(A) (nominal, 8 Hz-20KHz) Indoor Noise from Various Outdoor Environmental Sources

	Traffic Noise	Drop Forge	Gas Turbine	Fast Ferry	Steel Factory	Generator	Cooling Compressor	Discotheque
Noise	67.6 dB(lin)	71.1 dB(lin)	78.4 dB(lin)	64.5 dB(lin)	72.7 dB(lin)	60.2 dB(lin)	60.3 dB(lin)	67.0 dB(lin)
Noise ≥ 20 Hz	35.2 dB(A)	36.6 dB(A)	35.0 dB(A)	35.1 dB(A)	33.6 dB(A)	36.2 dB(A)	36.6 dB(A)	33.6 dB(A)
	62.9 dB(C)	67.3 dB(C)	73.7 dB(C)	61.7 dB(C)	66.0 dB(C)	58.6 dB(C)	59.0 dB(C)	57.8 dB(C)
Danish Environmental Protection Agency	14.5 dB	21.5 dB *	14.8 dB	15.0 dB	13.1 dB	16.1 dB	14.0 dB	18.0 dB *
Swedish National Board of Health and Welfare	14.1 dB	19.7 dB	15.9 dB	16.8 dB	15.5 dB	18.3 dB	16.0 dB	10.0 dB

* includes 5 dB "penalty"

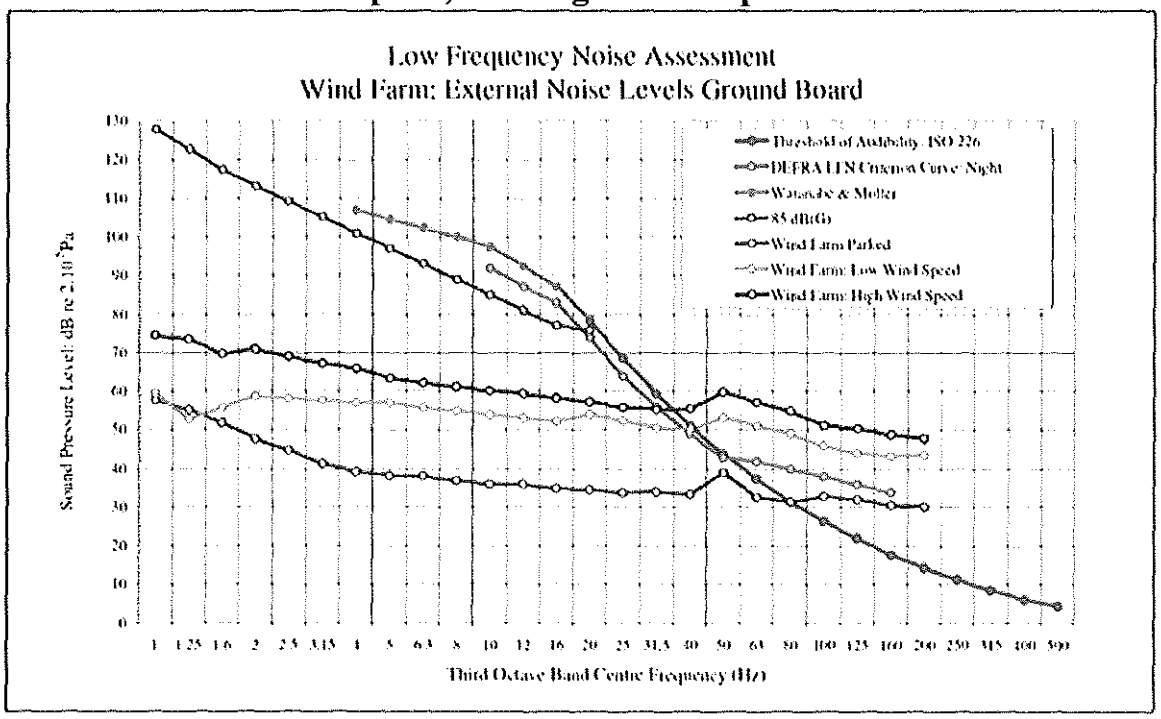
Noise adjusted to dB(lin), dB(A), dB(C) scales. Calculated exceedances of Danish and Swedish indoor criteria. (data from Danish Environmental Protection Agency, 2002)

In their noise guidance, the WHO (1999) recommends 30 dB(A) as a limit for "a good night's sleep". However, they also suggest that guidance for noise with predominating low frequencies be less than 30 dB(A).

3. Wind turbine sound measurements

Figure 8 shows examples of the SPLs at different frequencies from a representative wind turbine in the United Kingdom. Sound pressure level measurements are reported for a Nordex N-80 turbine at 200 meters (UK Department of Transport and Industry, 2006) when parked, at low wind speeds, and at high wind speeds. Figure 8 also includes, for reference, 3 sound threshold curves (ISO 226, Watanabe & Moller, 85 dB(G)) and the DEFRA Low Frequency Noise Criterion Curve (nighttime).

Figure 8: Low Frequency Noise from Wind Farm: Parked, Low Wind Speed, and High Wind Speed

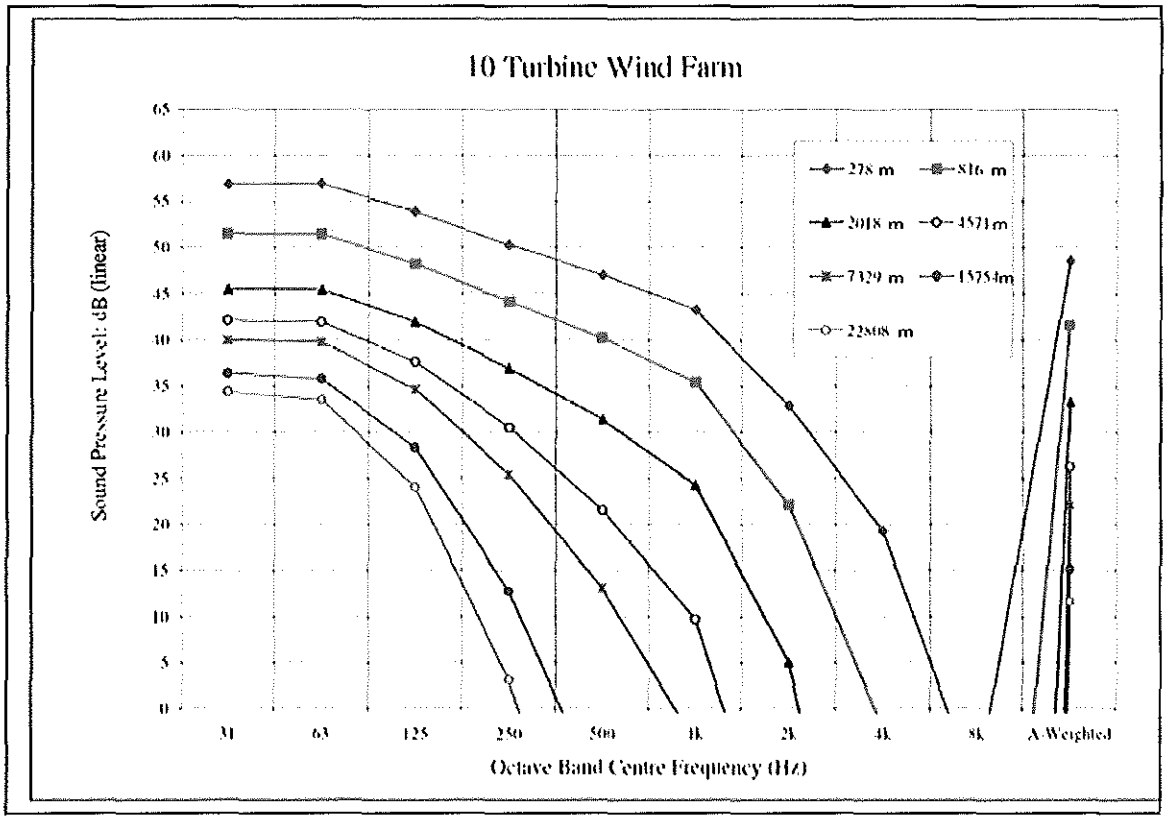


(UK Department of Transport and Industry, 2006)

In general, sound tends to propagate as if by spherical dispersion. This creates amplitude decay at a rate of about -6 dB per doubling of distance. However, low frequency noise from a wind turbine has been shown to follow more of a cylindrical decay at long distances, about -3 dB per doubling of distance in the downwind direction (Shepherd and Hubbard, 1991). This is thought to be the result of the lack of attenuation of low frequency sound waves by air and the atmospheric refraction of the low frequency sound waves over medium to long distances (Hawkins, 1987).

Figure 9 shows the calculated change in spectrum for a wind farm from 278 meters to 22,808 meters distant. As one moves away from the noise source, loudness at higher frequencies decreases more rapidly (and extinguishes faster) than at lower frequencies. Measurement of A-weighted decibels, shown at the right of the figure, obscures this finding.

Figure 9: Change in Noise Spectrum as Distance from Wind Farm Changes



(UK Department of Transport and Industry, 2006)

Thus, although noise from an upwind blade wind turbine is generally broad spectrum, without a tonal quality, high frequencies are efficiently attenuated by both the atmosphere, and by walls and windows of structures, as noted above. As a result, as one moves away from a wind turbine, the low frequency component of the noise becomes more pronounced.

Kamperman and James (2008) modeled indoor noise from outdoor wind turbine noise measurements, assuming a typical vinyl siding covered 2X4 wood frame construction. The wind turbine noise inside was calculated to be 5 dB less than the noise outside. Model data suggested that the sound of a single 2.5 MW wind turbine at 1000 feet will likely be heard in a house with the windows sealed. They note that models used for siting turbines often incorporate structure attenuation of 15dB. In addition, Kamperman and James demonstrate that sound from 10 2.5 MW turbines (acoustically) centered 2 km (1¼ mile) away and with the nearest turbine 1 mile away will only be 6.3 dB below the sound of a single turbine at 1000 feet (0.19 mile).

4. Wind turbine regulatory noise limits

Ramakrishnan (2007) has reported different noise criteria developed for wind farm planning. These criteria include common practices (if available) within each jurisdiction for estimating background SPLs, turbine SPLs, minimum setbacks and methods used to

assess impacts. Reported US wind turbine noise criteria range from: ambient + 10 dB(A) where ambient is assumed to be 26 dB(A) (Oregon); to 55 dB(A) or "background" + 5 dB(A) (Michigan). European criteria range from 35 dB(A) to 45 dB(A), at the property. US setbacks range from 1.1 times the full height of the turbine (consenting) and 5 times the hub height (non-consenting; Pennsylvania); to 350 m (consenting) and 1000 m (non-consenting; Oregon). European minimum setbacks are not noted.

VI. Conclusions

Wind turbines generate a broad spectrum of low-intensity noise. At typical setback distances higher frequencies are attenuated. In addition, walls and windows of homes attenuate high frequencies, but their effect on low frequencies is limited. Low frequency noise is primarily a problem that may affect some people in their homes, especially at night. It is not generally a problem for businesses, public buildings, or for people outdoors.

The most common complaint in various studies of wind turbine effects on people is annoyance or an impact on quality of life. Sleeplessness and headache are the most common health complaints and are highly correlated (but not perfectly correlated) with annoyance complaints. Complaints are more likely when turbines are visible or when shadow flicker occurs. Most available evidence suggests that reported health effects are related to audible low frequency noise. Complaints appear to rise with increasing outside noise levels above 35 dB(A). It has been hypothesized that direct activation of the vestibular and autonomic nervous system may be responsible for less common complaints, but evidence is scant.

The Minnesota nighttime standard of 50 dB(A) not to be exceeded more than 50% of the time in a given hour, appears to underweight penetration of low frequency noise into dwellings. Different schemes for evaluating low frequency noise, and/or lower noise standards, have been developed in a number of countries.

For some projects, wind velocity for a wind turbine project is measured at 10 m and then modeled to the height of the rotor. These models may under-predict wind speed that will be encountered when the turbine is erected. Higher wind speed will result in noise exceeding model predictions.

Low frequency noise from a wind turbine is generally not easily perceived beyond ½ mile. However, if a turbine is subject to aerodynamic modulation because of shear caused by terrain (mountains, trees, buildings) or different wind conditions through the rotor plane, turbine noise may be heard at greater distances.

Unlike low frequency noise, shadow flicker can affect individuals outdoors as well as indoors, and may be noticeable inside any building. Flicker can be eliminated by placement of wind turbines outside of the path of the sun as viewed from areas of concern, or by appropriate setbacks.

Prediction of complaint likelihood during project planning depends on: 1) good noise modeling including characterization of potential sources of aerodynamic modulation noise and characterization of nighttime wind conditions and noise; 2) shadow flicker modeling; 3) visibility of the wind turbines; and 4) interests of nearby residents and community.

VII. Recommendations

To assure informed decisions:

- Wind turbine noise estimates should include cumulative impacts (40-50 dB(A) isopleths) of all wind turbines.
- Isopleths for dB(C) - dB(A) greater than 10 dB should also be determined to evaluate the low frequency noise component.
- Potential impacts from shadow flicker and turbine visibility should be evaluated.

Any noise criteria beyond current state standards used for placement of wind turbines should reflect priorities and attitudes of the community.

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IX. References

Balaban, C. and B. Yates (2004). Vestibuloautonomic Interactions: A Teleologic Perspective. In: The Vestibular System. Hightstein, S., R. Fay and A. Popper. New York, Springer.

Berglund, B., P. Hassmen and R.F. Soames Job (1996). Sources and effects of low-frequency noise. J. Acoust. Soc. Am 99(5).

Bradley, J.S. (1994). Annoyance caused by constant-amplitude and amplitude-modulated sounds containing rumble. Noise Control Engineering Journal 42(6): 203-208.

Broner, N. and H.G. Leventhall (1983). Low Frequency Noise Annoyance Assessment by Low Frequency Noise Rating (LFNR) Curves. Journal of Low Frequency Noise and Vibration 2(1): 20-28.

Bryan, M.E. and W. Tempest (1973). Are our noise laws adequate. Applied Acoustics 6(3): 219.

Burton, T., D. Sharpe, N. Jenkins and E. Bossanyi (2001). Wind Energy Handbook. West Sussex, England, John Wiley and Sons.

Danish Environmental Protection Agency (2002) Laboratory evaluation of annoyance of low frequency noise. Authors Poulsen, T., Mortensen, F. R. Laboratoriet for Akustik, Danmarks Tekniske Universitet, http://www.miljøstyrelsen.dk/udgiv/publications/2002/87-7944-955-7/pdf/87-7944-956-5.pdf Accessed: April 17, 2009

EPD Hong Kong SAR (2009). Audible Range of the Human Ear. Environmental Protection Department, Government of the Hong Kong Special Administrative Region, People's Republic of China. http://www.epd.gov.hk/epd/noise_education/web/ENG_EPD_HTML/m1/intro_3.html Accessed: March 3, 2009

Feldmann, J. and F.A. Pitten (2004). Effects of low frequency noise on man-a case study. Noise and Health 7(25): 23-28.

Guyton, A. (1991). Textbook of Medical Physiology. 8th Ed. Philadelphia, WB Saunders.

Halmagyi, G., I. Curthoys, S. Aw and J. Jen (2004). Clinical Applications of Basis Vestibular Research. In: The Vestibular System. Hightstein, S., R. Fay and A. Popper. New York, Springer.

Harry, A. (2007). Wind turbines, noise, and health. February 2007, 62 pg. http://www.wind-watch.org/documents/wp-content/uploads/wtnoise_health_2007_a_harry.pdf Accessed: April 27, 2009

Hawkins, J.A. (1987). Application of ray theory to propagation of low frequency noise from wind turbines, National Aeronautics and Space Administration, Langley Research Center.

Holmberg, K., U. Landström and A. Kjellberg (1997). Low frequency noise level variations and annoyance in working environments. Journal of low frequency noise, vibration and active control 16(2): 81-87.

Kamperman, G.W. and R.R. James (2008). The "How To" Guide To Siting Wind Turbines To Prevent Health Risks From Sound. October 28, 2008. http://www.windturbinesyndrome.com/wp-content/uploads/2008/11/kamperman-james-10-28-08.pdf Accessed: March 2, 2009

Kjellberg, A., M. Tesarz, K. Holmberg and U. Landström (1997). Evaluation of frequency-weighted sound level measurements for prediction of low-frequency noise annoyance. Environment International 23(4): 519-527.

Large Wind Turbine Citizens Committee: Town of Union (2008). Setback Recommendations Report. Union, Rock County, Wisconsin. January 6, 2008, 318 pg. http://betterplan.squarespace.com/town-of-union-final-report/LWTCC%20Town%20of%20Union%20Final%20Report%2001-14-08.pdf Accessed: February 25, 2009

Leventhall, G., P. Pelmear and S. Benton (2003). A review of published research on low frequency noise and its effects. Department for Environment, Food and Rural Affairs. 88 pg. http://eprints.wmin.ac.uk/4141/1/Benton_2003.pdf Accessed: April 14, 2009

Leventhall, H.G. (2004). Low frequency noise and annoyance. Noise and Health 6(23): 59-72.

Michigan State University (2004). Land Use and Zoning Issues Related to Site Development for Utility Scale Wind Turbine Generators. http://web1.msue.msu.edu/cdnr/otsegowindflicker.pdf Accessed: April 28, 2009

Møller, H. and C.S. Pedersen (2004). Hearing at low and infrasonic frequencies. Noise and Health 6(23): 37.

Moreira, N.M. and M.E. Bryan (1972). Noise annoyance susceptibility. Journal of Sound and Vibration 21(4): 449.

National Research Council (2007). Environmental Impacts of Wind-Energy Projects. Committee on Environmental Impacts of Wind Energy Projects, Board on Environmental Studies and Toxicology, Division on Earth and Life Studies. 346 pg.

Pedersen, E. (2007). Human response to wind turbine noise. The Sahlgrenska Academy, Göteborg University, Göteborg ISBN. 88 pg. https://guoa.ub.gu.se/dspace/bitstream/2077/4431/1/Pedersen_avhandling.pdf Accessed: March 9, 2009

Pedersen, E. and W.K. Persson (2007). Wind turbine noise, annoyance and self-reported health and well-being in different living environments. Occup Environ Med 64(7): 480-6.

Pedersen, E. and K.P. Waye (2004). Perception and annoyance due to wind turbine noise—a dose–response relationship. The Journal of the Acoustical Society of America 116: 3460.

Phipps, Robyn (2007) In the Matter of Moturimu Wind Farm Application. Evidence to the Joint Commissioners, Palmerston North. March 8-26, 2007 http://www.ohariupreservationsociety.org.nz/phipps-moturimutestimony.pdf Accessed: April 17, 2009

Pierpoint, N. (2009). Wind Turbine Syndrome: A Report on a Natural Experiment (Pre-publication Draft). Santa Fe, NM, K-selected Books.

Ramakrishnan, R. (2007) Wind Turbine Facilities Noise Issues. Ontario Ministry of the Environment, Aiolos Engineering Corporation https://ozone.scholarsportal.info/bitstream/1873/13073/1/283287.pdf Accessed: March 9, 2009

Shepherd, K.P. and H.H. Hubbard (1991). Physical characteristics and perception of low frequency noise from wind turbines. Noise control engineering journal 36(1): 5-15.

Staples, S.L. (1997). Public Policy and Environmental Noise: Modeling Exposure or Understanding Effects. American Journal of Public Health 87(12): 2063.

Tetra Tech (2008). Public Utilities Commission Site Permit Application for a Large Wind Energy Conversion System, Noble Flat Hill Windpark I, LLC, Clay County, Minnesota. Docket No.: IP6687/WS-08-1134.

Todd, N., S.M. Rosengren and J.G. Colebatch (2008). Tuning and sensitivity of the human vestibular system to low-frequency vibration. Neuroscience Letters 444(1): 36-41.

UK Department for Business Enterprise and Regulatory Reform (2007) Research into Aerodynamic Modulation of Wind Turbine Noise: Final report. Report by: University of Salford. Authors: A. Moorhouse, M.H., S. von Hünerbein, B. Piper, M. Adams, http://usir.salford.ac.uk/1554/1/Salford_Uni_Report_Turbine_Sound.pdf Accessed: March 6, 2009

UK Department of Transport and Industry (2006) The measurement of low frequency noise at three UK wind farms. United Kingdom DTI Technology Programme: New and Renewable Energy. Contractor: Hayes McKenzie Partnership Ltd. Author: G. Leventhall, http://www.berr.gov.uk/files/file31270.pdf Accessed: March 9, 2009

van den Berg, F., E. Pedersen, J. Bouma and R. Bakker (2008). Project WINDFARMperception: Visual and acoustic impact of wind turbine farms on residents. Final report, FP6-2005-Science-and-Society-20, Specific Support Action project no. 044628. June 3, 2008, 99 pg. http://www.windaction.org/?module=uploads&func=download&fileId=1615 Accessed: May 11, 2009

van den Berg, G.P. van den Berg, G.P. (2008). Wind turbine power and sound in relation to atmospheric stability. Wind Energy 11(2): 151-169.

van den Berg, G.P. (2005). The Beat is Getting Stronger: The Effect of Atmospheric Stability on Low Frequency Modulated Sound of Wind Turbines. Noise Notes 4(4): 15-40.

van den Berg, G.P. (2004). Effects of the wind profile at night on wind turbine sound. Journal of Sound and Vibration 277(4-5): 955-970.

World Health Organization (1999). Guidelines for community noise. Geneva; OMS, 1999, 94 p. Ilus, Authors: Berglund, B., Lindvall, T., Schwela, D. H. http://www.bvsde.paho.org/bvsci/i/fulltext/noise/noise.pdf Accessed: April 17, 2009

Woodworth, R.S. and H. Schlosberg (1964). Experimental Psychology. New York, Holt, Rinehart and Winston.

Wisconsin Power & Light Company (2008). Minnesota Public Utlilities Commission Site Permit Application for a Large Wind Energy Conversion System, Bent Tree Wind Project, Freeborn County, Minnesota. Docket No.: ET6657/WS-08-573

340-035-0035

Noise Control Regulations for Industry and Commerce

(1) Standards and Regulations:

(a) Existing Noise Sources. No person owning or controlling an existing industrial or commercial noise source shall cause or permit the operation of that noise source if the statistical noise levels generated by that source and measured at an appropriate measurement point, specified in subsection (3)(b) of this rule, exceed the levels specified in Table 7, except as otherwise provided in these rules.

(b) New Noise Sources:

(A) New Sources Located on Previously Used Sites. No person owning or controlling a new industrial or commercial noise source located on a previously used industrial or commercial site shall cause or permit the operation of that noise source if the statistical noise levels generated by that new source and measured at an appropriate measurement point, specified in subsection (3)(b) of this rule, exceed the levels specified in Table 8, except as otherwise provided in these rules. For noise levels generated by a wind energy facility including wind turbines of any size and any associated equipment or machinery, subparagraph (1)(b)(B)(iii) applies.

(B) New Sources Located on Previously Unused Site:

(i) No person owning or controlling a new industrial or commercial noise source located on a previously unused industrial or commercial site shall cause or permit the operation of that noise source if the noise levels generated or indirectly caused by that noise source increase the ambient statistical noise levels, L10 or L50, by more than 10 dBA in any one hour, or exceed the levels specified in Table 8, as measured at an appropriate measurement point, as specified in subsection (3)(b) of this rule, except as specified in subparagraph (1)(b)(B)(iii).

(ii) The ambient statistical noise level of a new industrial or commercial noise source on a previously unused industrial or commercial site shall include all noises generated or indirectly caused by or attributable to that source including all of its related activities. Sources exempted from the requirements of section (1) of this rule, which are identified in subsections (5)(b) - (f), (j), and (k) of this rule, shall not be excluded from this ambient measurement.

(iii) For noise levels generated or caused by a wind energy facility:

(I) The increase in ambient statistical noise levels is based on an assumed background L50 ambient noise level of 26 dBA or the actual ambient background level. The person owning the wind energy facility may conduct measurements to determine the actual ambient L10 and L50 background level .

(II) The "actual ambient background level" is the measured noise level at the appropriate measurement point as specified in subsection (3)(b) of this rule using generally accepted noise engineering measurement practices. Background noise measurements shall be obtained at the appropriate measurement point, synchronized with windspeed measurements of hub height conditions at the nearest wind turbine location. "Actual ambient background level" does not include noise generated or caused by the wind energy facility.

(III) The noise levels from a wind energy facility may increase the ambient statistical noise levels L10 and L_{50} by more than 10 dBA (but not above the limits specified in Table 8), if the person who owns the noise sensitive property executes a legally effective easement or real covenant that benefits the property on which the wind energy facility is located. The easement or covenant must authorize the wind energy facility to increase the ambient statistical noise levels, L_{10} or L_{50} on the sensitive property by more than 10 dBA at the appropriate measurement point.

(IV) For purposes of determining whether a proposed wind energy facility would satisfy the ambient noise standard where a landowner has not waived the standard, noise levels at the appropriate measurement point are predicted assuming that all of the proposed wind facility's turbines are operating between cut-in speed and the wind speed corresponding to the maximum sound power level established by IEC 61400-11 (version 2002-12). These predictions must be compared to the highest of either the assumed ambient noise level of 26 dBA or to the actual ambient background L10 and L50 noise level, if measured. The facility complies with the noise ambient background standard if this comparison shows that the increase in noise is not more than 10 dBA over this entire range of wind speeds.

(V) For purposes of determining whether an operating wind energy facility complies with the ambient noise standard where a landowner has not waived the standard, noise levels at the appropriate measurement point are measured when the facility's nearest wind turbine is operating over the entire range of wind speeds between cut-in speed and the windspeed corresponding to the maximum sound power level and no turbine that could contribute to the noise level is disabled. The facility complies with the noise ambient background standard if the increase in noise over either the assumed ambient noise level of 26 dBA or to the actual ambient background L10 and L50 noise level, if measured, is not more than 10 dBA over this entire range of wind speeds.

(VI) For purposes of determining whether a proposed wind energy facility would satisfy the Table 8 standards, noise levels at the appropriate measurement point are predicted by using the turbine's maximum sound power level following procedures established by IEC 61400-11 (version 2002-12), and assuming that all of the proposed wind facility's turbines are operating at the maximum sound power level.

(VII) For purposes of determining whether an operating wind energy facility satisfies the Table 8 standards, noise generated by the energy facility is measured at the appropriate measurement point when the facility's nearest wind turbine is operating at the windspeed corresponding to the maximum sound power level and no turbine that could contribute to the noise level is disabled.

(c) Quiet Areas. No person owning or controlling an industrial or commercial noise source located either within the boundaries of a quiet area or outside its boundaries shall cause or permit the operation of that noise source if the statistical noise levels generated by that source exceed the levels specified in Table 9 as measured within the quiet area and not less than 400 feet (122 meters) from the noise source.

(d) Impulse Sound. Notwithstanding the noise rules in Tables 7 through 9, no person owning or controlling an industrial or commercial noise source shall cause or permit the operation of that noise source if an impulsive sound is emitted in air by that source which exceeds the sound pressure levels specified below, as measured at an appropriate measurement point, as specified in subsection (3)(b) of this rule:

(A) Blasting. 98 dBC, slow response, between the hours of 7 a.m. and 10 p.m. and 93 dBC, slow response, between the hours of 10 p.m. and 7 a.m.

(B) All Other Impulse Sounds. 100 db, peak response, between the hours of 7 a.m. and 10 p.m. and 80 dB, peak response, between the hours of 10 p.m. and 7 a.m.

(f) Octave Bands and Audible Discrete Tones. When the Director has reasonable cause to believe that the requirements of subsection (1)(a), (b), or (c) of this rule do not adequately protect the health, safety, or welfare of the public as provided for in ORS Chapter 467, the Department may require the noise source to meet the following rules:

(A) Octave Bands. No person owning or controlling an industrial or commercial noise source shall cause or permit the operation of that noise source if such operation generates a median octave band sound pressure level which, as measured at an appropriate measurement point, specified in subsection (3)(b) of this rule, exceeds applicable levels specified in Table 10.

(B) One-third Octave Band. No person owning or controlling an industrial or commercial noise source shall cause or permit the operation of that noise source if such operation generates a median one-third octave band sound pressure level which, as measured at an appropriate measurement point, specified in subsection (3)(b) of this rule, and in a one-third octave band at a preferred frequency, exceeds the arithmetic average of the median sound pressure levels of the two adjacent one-third octave bands by:

(i) 5 dB for such one-third octave band with a center frequency from 500 Hertz to 10,000 Hertz, inclusive. Provided: Such one-third octave band sound pressure level exceeds the sound pressure level of each adjacent one-third octave band; or

(ii) 8 dB for such one-third octave band with a center frequency from 160 Hertz to 400 Hertz, inclusive. Provided: Such one-third octave band sound pressure level exceeds the sound pressure level of each adjacent one-third octave band; or

(iii) 15 dB for such one-third octave band with a center frequency from 25 Hertz to 125 Hertz, inclusive. Provided: Such one-third octave band sound pressure level exceeds the sound pressure level of each adjacent one-third octave band;

(iv) This rule shall not apply to audible discrete tones having a one-third octave band sound pressure level 10 dB or more below the allowable sound pressure levels specified in Table 10 for the octave band which contains such one-third octave band.

(2) Compliance. Upon written notification from the Director, the owner or controller of an industrial or commercial noise source operating in violation of the adopted rules shall submit a compliance schedule acceptable to the Department. The schedule will set forth the dates, terms, and conditions by which the person responsible for the noise source shall comply with the adopted rules.

(3) Measurement:

(a) Sound measurements procedures shall conform to those procedures which are adopted by the Commission and set forth in Sound Measurement Procedures Manual (NPCS-1), or to such other procedures as are approved in writing by the Department;

(b) Unless otherwise specified, the appropriate measurement point shall be that point on the noise sensitive property, described below, which is further from the noise source:

(A) 25 feet (7.6 meters) toward the noise source from that point on the noise sensitive building nearest the noise source;

(B) That point on the noise sensitive property line nearest the noise source.

(4) Monitoring and Reporting:

(a) Upon written notification from the Department, persons owning or controlling an industrial or commercial noise source shall monitor and record the statistical noise levels and operating times of equipment, facilities, operations, and activities, and shall submit such data to the Department in the form and on the schedule requested by the Department. Procedures for such measurements shall conform to those procedures which are adopted by the Commission and set forth in Sound Measurement Procedures Manual (NPCS-1);

(b) Nothing in this rule shall preclude the Department from conducting separate or additional noise tests and measurements. Therefore, when requested by the Department, the owner or operator of an industrial or commercial noise source shall provide the following:

(A) Access to the site;

(B) Reasonable facilities, where available, including but not limited to, electric power and ladders adequate to perform the testing;

(C) Cooperation in the reasonable operation, manipulation, or shutdown of various equipment or operations as needed to ascertain the source of sound and measure its emission.

(5) Exemptions: Except as otherwise provided in subparagraph (1)(b)(B)(ii) of this rule, the rules in section (1) of this rule shall not apply to:

(a) Emergency equipment not operated on a regular or scheduled basis;

(b) Warning devices not operating continuously for more than 5 minutes;

(c) Sounds created by the tires or motor used to propel any road vehicle complying with the noise standards for road vehicles;

(d) Sounds resulting from the operation of any equipment or facility of a surface carrier engaged in interstate commerce by railroad only to the extent that such equipment or facility is regulated by pre-emptive federal regulations as set forth in Part 201 of Title 40 of the Code of Federal Regulations, promulgated pursuant to Section 17 of the Noise Control Act of 1972, 86 Stat. 1248, Public Law 92-576; but this exemption does not apply to any standard, control, license, regulation, or restriction necessitated by special local conditions which is approved by the Administrator of the EPA after consultation with the Secretary of Transportation pursuant to procedures set forth in Section 17(c)(2) of the Act;

(e) Sounds created by bells, chimes, or carillons;

(f) Sounds not electronically amplified which are created by or generated at sporting, amusement, and entertainment events, except those sounds which are regulated under other noise standards. An event is a noteworthy happening and does not include informal, frequent, or ongoing activities such as, but not

limited to, those which normally occur at bowling alleys or amusement parks operating in one location for a significant period of time;

(g) Sounds that originate on construction sites.

(h) Sounds created in construction or maintenance of capital equipment;

(i) Sounds created by lawn care maintenance and snow removal equipment;

(j) Sounds generated by the operation of aircraft and subject to pre-emptive federal regulation. This exception does not apply to aircraft engine testing, activity conducted at the airport that is not directly related to flight operations, and any other activity not pre-emptively regulated by the federal government or controlled under OAR 340-035-0045;

(k) Sounds created by the operation of road vehicle auxiliary equipment complying with the noise rules for such equipment as specified in OAR 340-035-0030(1)(e);

(l) Sounds created by agricultural activities;

(m) Sounds created by activities related to the growing or harvesting of forest tree species on forest land as defined in subsection (1) of ORS 526.324.

(6) Exceptions: Upon written request from the owner or controller of an industrial or commercial noise source, the Department may authorize exceptions to section (1) of this rule, pursuant to rule 340-035-0010, for:

(a) Unusual and/or infrequent events;

(b) Industrial or commercial facilities previously established in areas of new development of noise sensitive property;

(c) Those industrial or commercial noise sources whose statistical noise levels at the appropriate measurement point are exceeded by any noise source external to the industrial or commercial noise source in question;

(d) Noise sensitive property owned or controlled by the person who controls or owns the noise source;

(e) Noise sensitive property located on land zoned exclusively for industrial or commercial use.

[ED. NOTE: The Table(s) referenced in this rule are not printed in the OAR Compilation. Copies are available from the agency.]

[Publication: The Publication(s) referred to or incorporated by reference in this rule are available from the agency.]

Stat. Auth.: ORS 467
Stats. Implemented: ORS 467.030
Hist.: DEQ 77, f. 9-5-74, ef. 9-25-74; DEQ 135, f. & ef. 6-7-77; DEQ 8-1980, f. & ef. 3-11-80; DEQ 7-1983, f. & ef. 4-22-83

Wind Turbines, Health, Ridgelines, and Valleys

Montpelier, VT, May 7 2010

It is a medical fact that sleep disturbance and perceived stress result in ill effects, including and especially cardiovascular disease, but also chronic feelings of depression, anger, helplessness, and, in the aggregate, the banishment of happiness and reduced quality of life.

Cardiovascular disease, as we all now, leads to reduced life expectancy. Try and get reasonably priced life insurance if you are hypertensive or have suffered a heart attack.

If industrial wind turbines installed in close proximity to human habitation result in sleep disturbance and stress, then it follows as surely as day follows night that wind turbines will, over the long term, result in these serious health effects and reduced quality of life.

The question is, then, do they?

In my investigation of Mars Hill, Maine, 22 out of about 30 adults ('exposed') who live within 3500 feet of a ridgeline arrangement of 28 1.5 MW wind turbines were evaluated to date, and compared with 27 people of otherwise similar age and occupation living about 3 miles away (Not Exposed).

Here is what was found:

82% (18/22) of exposed subjects reported new or worsened chronic sleep deprivation, versus 4% (1 person) in the non-exposed group. 41% of exposed people reported new chronic headaches vs 4% in the control group. 59% (13/22) of the exposed reported 'stress' versus none in the control group, and 77% (17/22) persistent anger versus none in the people living 3 miles away. More than a third of the study subjects had new or worsened depression, with none in the control group. 95% (21/22) of the exposed subjects perceived reduced quality of life, versus 0% in the control group. Underlining these findings, there were 26 new prescription medications offered to the exposed subjects, of which 15 were accepted, compared to 4 new or increased prescriptions in the control group. The prescriptions ranged

from anti-hypertensives and antidepressants to anti migraine medications among the exposed. The new medications for the non exposed group were anti-hypertensives and anti-arthritics.

The Mars Hill study will soon be completed and is being prepared for publication. Preliminary findings have been presented to the Chief Medical Officer for Ontario, and have been presented to Health Canada, by invitation. Earlier partial results were presented to the Maine Medical Association, which passed a Resolution calling for caution, further study, and appropriate modification of siting regulations, at its annual meeting in 2009.

There is absolutely no doubt that people living within 3500 feet of a ridgeline arrangement of turbines 1.5 MW or larger turbines in a rural environment will suffer negative effects.

The study was undertaken as a pilot project to evaluate for a cluster of symptoms after numerous media reports, in order to present data to the Maine Medical Association, after the Maine CDC failed to more fully investigate.

While the study is not perfect, it does suggest a real problem that warrants not only further more detailed investigation, but the tenderest caution, in the meantime, when decisions on how to site industrial wind turbines are made.

What is it about northeast USA ridgelines that contribute to these ill effects, and how can they be avoided?

Consider, the Northeast is prone to icing conditions. Icing will increase the sound coming off of turbines by up to 6 dBA. As the icing occurs symmetrically on all blades, imbalance detectors do not kick on, and the blades keep turning, contrary to wind industry claims.

Sound is amplified coming off of ridgelines into valleys. This is because the background noise in rural valleys is low to begin with, increasing the sensitivity to changes, particularly the beating, pulsatile nature of wind turbine noise, and sound sources at elevation do not undergo the same attenuation that occurs from groundcover when noise sources are at ground level. The noise travels farther and hits homes and people at greater

amplitude that it would from a lower elevation. Even though this is not rocket science, it was conclusively proven in a NASA funded study in 1990.

Snow pack and ice contribute to increased noise transmission. Vermont valleys have both, I believe.

Preconstruction sound modeling fails to take the tendency of the homes that people live in to respond and vibrate perceptibly to sound at frequencies that the occupants of the dwellings cannot necessarily hear. They hear, and feel, the walls and windows rattle, and the floors vibrate, in a pulsing manner at a frequency or the turbine rpm.

When pre construction modeling fails to take the pulsatile nature, propensity for icing, and ridgeline elevation into account, as well as a linear as opposed to point source of noise, problems can be expected. What distance is safe? It depends on the terrain, the climate, the size of the project and the turbines themselves. Accurate preconstruction modeling with safe targets in mind is critical. The WHO says that 30dbA is ideal, and noise levels of above 40dbA have definite health consequences. At Mars Hill, where affected homes are present at 3500 feet, sound levels have been measured at over 52.5dbA. The fiasco there has been acknowledged by the local wind energy company, and by a former Maine governor.

Vermont would do well to learn from the affected people in Mars Hill.

I have seen the preliminary plans for the planned Deerfield Wind Facility, and have particular concerns regarding the dwellings to the north and northeast of the northernmost extension of the turbine layout. These homes are well within a mile, generally downwind, and downhill from what I am told may well be 2 MW turbines (or larger?), in a snowy and icy part of the Northeast.

The parallels to Mars Hill are striking.

We know that preconstruction sound modeling failed at Mars Hill. No matter what the preconstruction modeling at Deerfield shows, the real world experiment at Mars Hill suggests that there will be problems for homes at the setbacks that seem to be planned for Deerfield on the attached image.

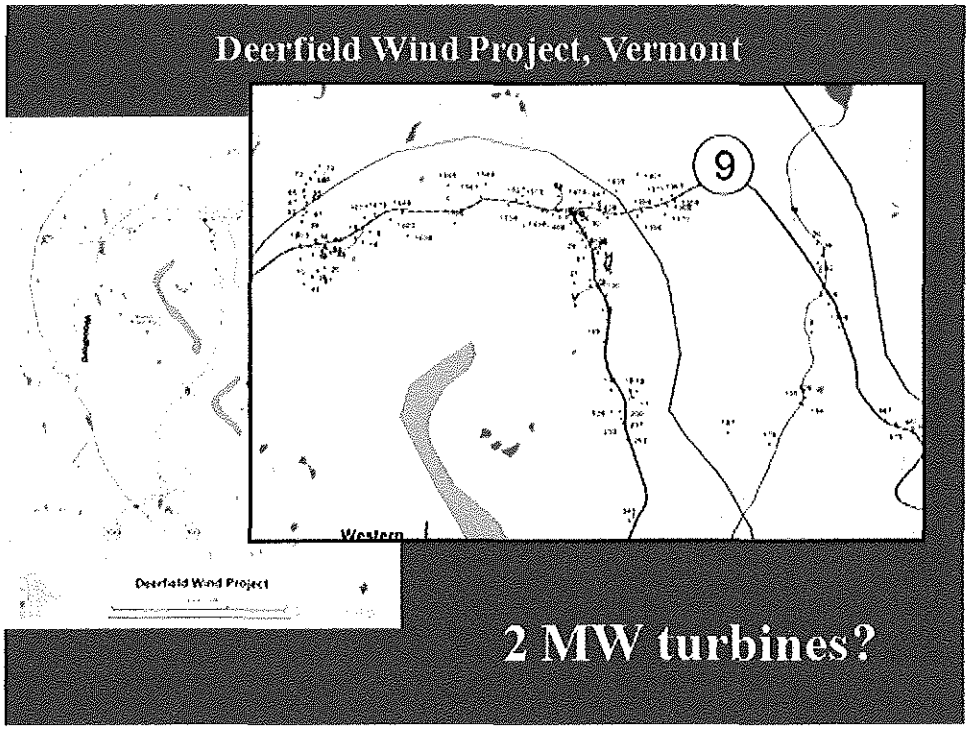
The people who live within 3500 feet at Mars Hill are truly suffering. Learn from Mars Hill. It is not a matter of not having wind turbines. It is a matter of putting them where they will not affect people's health.

Newer technology to accurately measure sound at a quantum level improvement in temporal, frequency and amplitude resolution over commonly used acoustician's equipment now exists, though it is costly and not readily available. But it will be widespread, soon, well within the tenure of the individuals responsible for making siting decisions today.

Avail yourselves of these findings and familiarize yourselves with the new technologies. You will not only be future proofing your current decisions, you will also be helping people who would otherwise end up too close to industrial wind turbines escape the fate of the exposed residents of Mars Hill, and many other sites in North America (Mars Hill, Maine, merely represents the first small 'controlled' study).

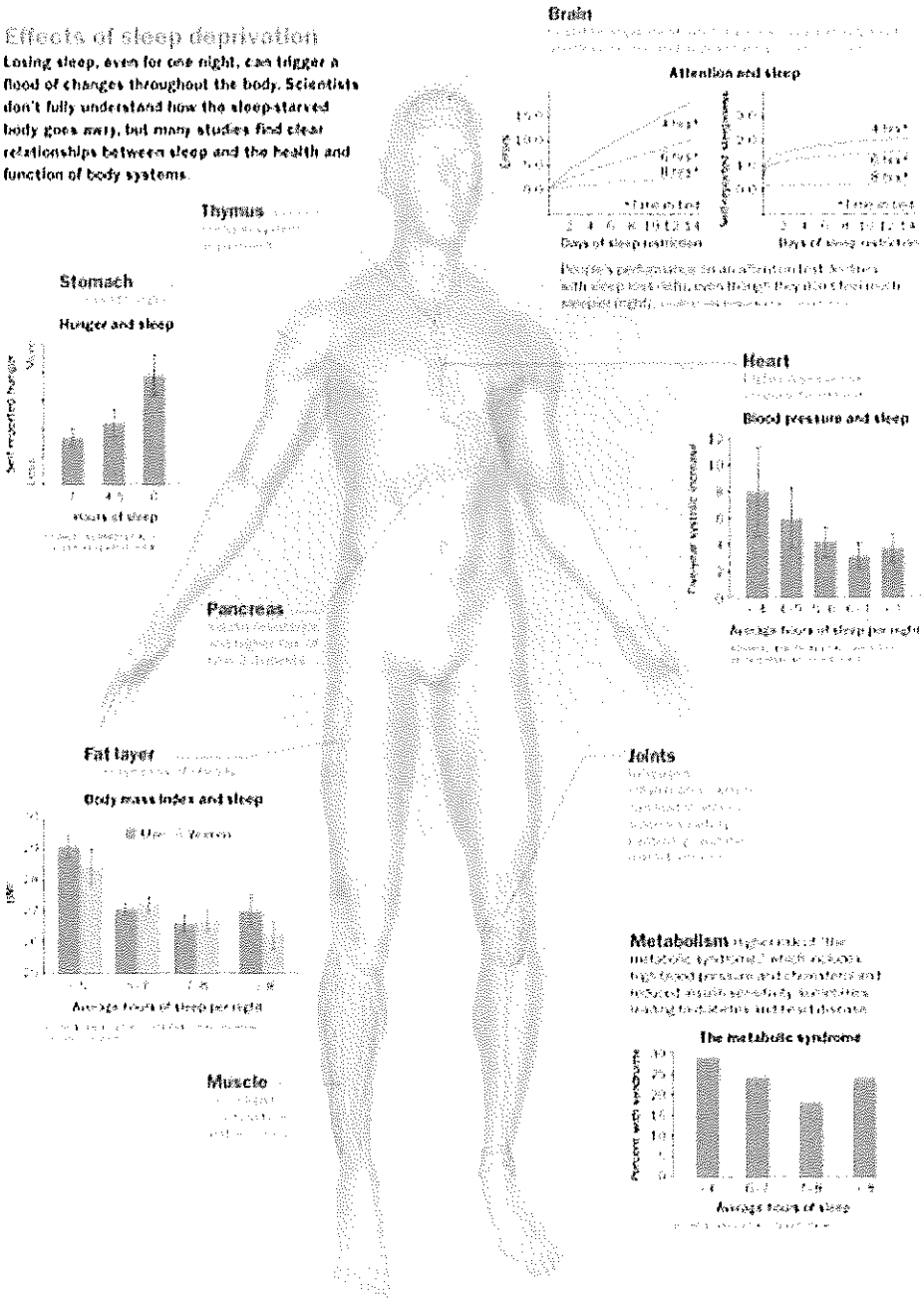
I have seen the results of this cutting edge equipment, and how it has revealed drastic short duration excesses over allowed sound levels, levels that set homes vibrating and rendering them unlivable, but also levels of lower frequency transient noise at the audible level, that demonstrates not only failure of preconstruction sound modeling as currently practiced, but also the inadequacy of the measuring tools in the toolkit of the everyday practicing acoustician-consultant who generates reports for industry and local government.

Michael A. Nissenbaum, MD
University of Toronto (MD), McGill University (Specialty Diagnostic Imaging),
University of California (Fellowship)
Harvard University Medical School (junior faculty, Associate Director of MRI, BIH)
Currently, Radiologist, NMMC, Ft. Kent, Maine


Deerfield Wind Project, Vermont
9
Western
Deerfield Wind Project
2 MW turbines?

Effects of sleep deprivation

Losing sleep, even for one night, can trigger a flood of changes throughout the body. Scientists don't fully understand how the sleep-starved body goes awry, but many studies find clear relationships between sleep and the health and function of body systems.



Brain

People's performance on an attention test declines with sleep loss—and, even though they don't feel sleepier, they're less aware of their impairment.

Thymus

Stomach

Heart

Pancreas

Fat layer

Joints

Muscle

Metabolism

Deputation
to the Standing Committee on General Government
Regarding Bill C-150
April 22 2009

By Dr. Robert McMurtry M.D., F.R.C.S (C), F.A.C.S

Deputation to the Standing Committee on General Government
Regarding Bill C-150
April 22 2009

First permit me to express my appreciation to the Committee for permitting me to speak and submit this deputation.

My presentation is in four parts:

* Regulations in Canada
* Low Frequency Noise and Wind Turbines
* Report of Adverse Health Events
* A Proposal

Regulations in Canada

Quite simply national regulations do not exist in Canada. According to a November 2008 letter from Morel Oprisan, (Deputy Director S&T, Renewable Energy Technologies, Government of Canada) in an electronic mail to Professor John Harrison (Queens University) he stated:

> "As you correctly noted in your letter, the issue of the wind turbine set-back from a residence, is regulated locally (municipally or provincially)."
> "As part of the work done by the federal government in this area, we have worked together with CSA and, internationally with IEC, to bring international standards to Canada. However, these standards, at this time, are not mandatory and their use is voluntary."

To add to my concern regarding this regulatory uncertainty is the fact that this Provincial Ministry of the Environment has regulations with many flaws. One of these is the failure to measure for low frequency noise (LFN). Instead regulations are stated measure in A Weighted decibels or dBA only. To measure for LFN it is necessary to screen with C Weighted decibels or dBC.

It is not possible to develop authoritative guidelines for set-backs and monitoring of industrial wind turbines specifically if LFN is not taken into account.

Low Frequency Noise

Human auditory range is from 20 – 20,000 HZ. LFN is about 20-200 HZ. (1) It is an area of growing interest and for example there are 15,400,000 hits on Google (accessed April 20 2009) for "Low Frequency Noise". However there appears to be a variance of opinion

in recognizing its significance. For example the wind developer IPC Energy contracted Avalon Consulting to do Environmental Screening. I contacted Avalon who indicated to me on 2 occasions that it is "not necessary" to monitor for LFN. The wind industry at large agrees as they also deny the need to monitor for LFN. The Ministry of the Environment of Ontario concurs as all its regulations are based on dBA (Decibels with A weighting) which is relatively insensitive to LFN. dBA however is adequate for higher frequency noises such as the characteristic "swoosh, swoosh, swoosh" of turbine blades which are in the mid-frequency range.

How important is LFN?
The World Health Organization in a 2000 publication ("Community Noise" by Berglund et al) made the following observations:

- "Since A-weighting underestimates the sound pressure level of noise with low frequency components, a better assessment of health effects would e to use C-weighting"
- "It should be noted that a large proportion of low frequency components in a noise may increase considerably the adverse effects on health"
- "The evidence on low frequency noise is sufficiently strong to warrant immediate concern" (2)

The answer is clear – LFN is very important.
However there is a crucial difference of opinion.
The author of the foregoing paper (H.G. Leventhall) who quoted the WHO denies that wind turbines generate LFN. He is the prime expert on the subject on behalf of the wind energy industry.

Others disagree.

For example Styles et al observed that there is "..clear evidence that wind turbines generate low frequency sound (infrasound) and acoustic signals which can be detected at considerable distances (many kilometres) from wind farms on infrasound detectors and low-frequency microphones."

Kamperman and James have commented "Some residents living as far as 3 km (two miles) from a wind farm complain of sleep disturbance from the noise. Many residents living one-tenth this distance (300 m. or 1000 feet) from a wind farm are experiencing major sleep disruption and other serious medical problems from nighttime wind turbine noise".

They further comment that "the single A-weighted (dBA) noise descriptor used in most jurisdictions for siting turbines is not adequate". Clearly, as they conclude C-weighted (dBC) criteria should be used.

Adverse Health Events

There have been many reports of adverse health events. At the outset it must be made clear that there has not been any systematic epidemiological field study that could yield authoritative guidelines for the siting of wind turbines. Secondly there is no epidemiological study has been conducted that establishes either the safety or harmfulness of Industrial Wind Turbines. In short there is an absence of evidence. Accordingly until more authoritative information is available it is important to consider the growing number of reports of cases and case series of adverse health effects that are emerging.

Dr. Amanda Harry reported on 39 cases of people whose health and quality of life were compromised.

She concluded that ".....people living near turbines are genuinely suffering." (5)

Dr. David Manley a Chartered Physicist, Acoustician and Engineer who worked with Dr. Harry stated: "Much work has been done by me near windfarms to evaluate the acoustic effects. It is found that people living within five miles of a windfarm cluster can be affected and if they are sensitive to low frequencies, they may be disturbed."

"It has been found that an extensive seismic signal passes through the earth and may well at night time affect peoples sleep. It is admitted by fellow acousticians that much more research in this subject is needed and that none has been done since 1996 by the DTI. At many inquiries windfarm promoters will not accept there is an acoustic problem."(6)

Todd et al recently found that the human ear is more sensitive to seismic vibration than to hearing. (7) In other words what you can't hear can otherwise be perceived.

Dr. Nina Pierpont has had a substantial experience with wind turbines She too has gathered cases (38 from 10 families) and plans to publish a book this year. (8)

The National Academy of Medicine of France has taken note of adverse health events in their report "Repercussions of the Operation of Wind Turbines on the Health of Man" (March 2006). Their recommendation is for a set-back of 1.5 kilometers for 2.5 MW wind turbines from dwellings. They also recommended an epidemiological investigation into the possible medical effects of wind turbines.

Of course the industry denies any problem and cite more than 20 years experience and at least 68,000 wind turbines in place without adverse health effects.

The European Platform Against Windfarms begs to differ. They currently have 319 organizations from 18 nations opposing windfarms. To quote from their web page

- that hundreds of associations, local initiatives and other groups are totally dissatisfied with wind farms;

- that intermittent, uncontrollable energy does not solve any of humanity's problems, even in part;
- that the only thing wind turbines do is cause considerable harm to people, the economy, national budgets and the environment.(9)

Closer to home those sentiments are clearly arising as this committee heard from Wind Concerns Ontario.

Let me be clear however as to my deepest concern : adverse health effects are occurring as we speak. Many victims have joined us today in the hope of being heard. There is no quetion that they are genuinely suffering and more people are at risk if the rules are not changes substantially.

The victims, lead by Carmen Krogh and Lorrie Gillis organized a survey of people living near wind installatons. (The methodology and detailed results are attached as part of the submission) Seventy-six people responded.Twenty-three denied any problem.Fifty-three indicated that they had experiencesd at least one symptom/complaint and on average had 5 complaints.

The findings are remarkably similar to other work quoted above and to the just released study by Dr. Michael Nissenbaum in Maine who reports on 15 further cases. Virtually always the commonest complaint is sleep disturbance (34). Already thirty-nine individuals indicate that their health has been affected as a consequence of what they are experiencing. One person has had to be admitted to hospital with an acute hypertensive episode, another experinced a cardiac arrythmia (atrial fibrillation), 15 experienced heart palpitations. Further details are in your packages.

Most disturbing of all are the comments describing the sheer anguish and sense of betrayal that many feel. Noone seems to care, noone appears to be listening to their plight. They feel they are losing their homes and their lives.

The situation has been exacerbated for many who have experienced denial, and abusive behaviour by Wind Turbine representatives and on occasion from Ministry of the Environment officials. All this victimizes them a second time.

These findings and victim accounts are new in Ontario but not elsewhere. They have been described too often in other countries.

A Proposal

There clearly are competing claims about LFN and health risks - those who are living the claims and those who deny them

There is a way out of this dilemma. Authoritative guidelines must be established based on sound science. A well-designed epidemiological study conducted by arms-length

investigators, mutually agreeable to all sides, must be done. In addition and far more simply is to engage sound engineers, (again mutually agreeable) to determine the presence or absence of LFN near existing wind farms in Ontario.

In the meantime listen to and help the victims.

Anything less would be an abandonment of responsibility by the government.

Summary

When uncertainty exists and the health and well-being of people are potentially at risk, assuredly it is appropriate to invoke the precautionary principle. Until and unless there are authoritative guidelines in place based on the best available evidence the Province of Ontario ought not to proceed with the development of Industrial Wind Turbines any further.

The development of these guidelines must be based on a rigorous epidemiological evaluation of health effects of these turbines.

Respectfully Submitted

R.Y. McMurtry MD FRCSC FACS

1. www.defra.gov.uk/environment/noise/research/lowfrequency/pdf/lowfreqnoise.pdf

2 ibid

3. "Microseismic and Infrasound Monitoring of Low Frequency Noise and Vibrations from Windfarms" 2005. Styles et al.

4. Kamperman and James "Simple guidelines for siting wind turbines to prevent health risks" July 2008

5. www.flat-group.co.uk/pdf/wtnoise_health_2007_a_harry.pdf.39

6. David Michael Manley PhD BSc(Hons) MIEE MIOA F Inst P C.Dip AF FICDDS C.Eng Chartered Acoustician, Physicist and Engineer http://www.socme.org/acoustic.html

7. http://www.windturbinesyndrome.com

8. Todd, Rosengren and Colebatch. "Tuning and sensitivity of the human vestibular system to low-frequency vibration" Neuroscience Letters 444 (2008) 36–41.

9. http://www.epaw.org/

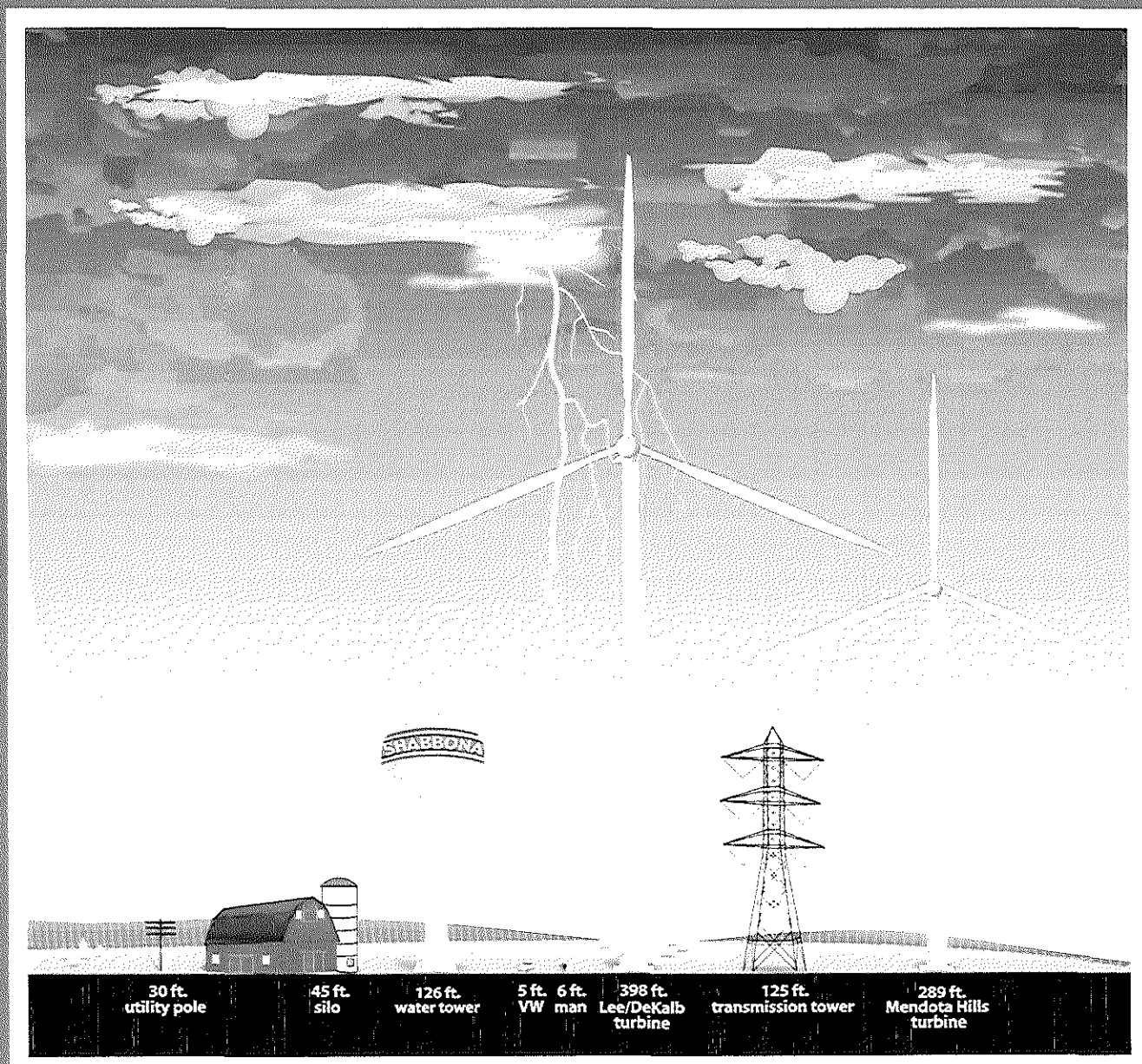
10. Michael Nissenbaum MD. Presentation to the Maine Medical Association March 2009 [Slides from presentation attached]

Mars Hill Wind Turbine Project

Health Effects – Preliminary Findings

- 28 turbines, 389 ft tall
- Online Dec 06, Complete Mar 07
- 20 homes North and East of turbines
- 35 adults, 16 children live within 3400 feet
- 15 people interviewed (13 face to face Mar 12, 2009) to date

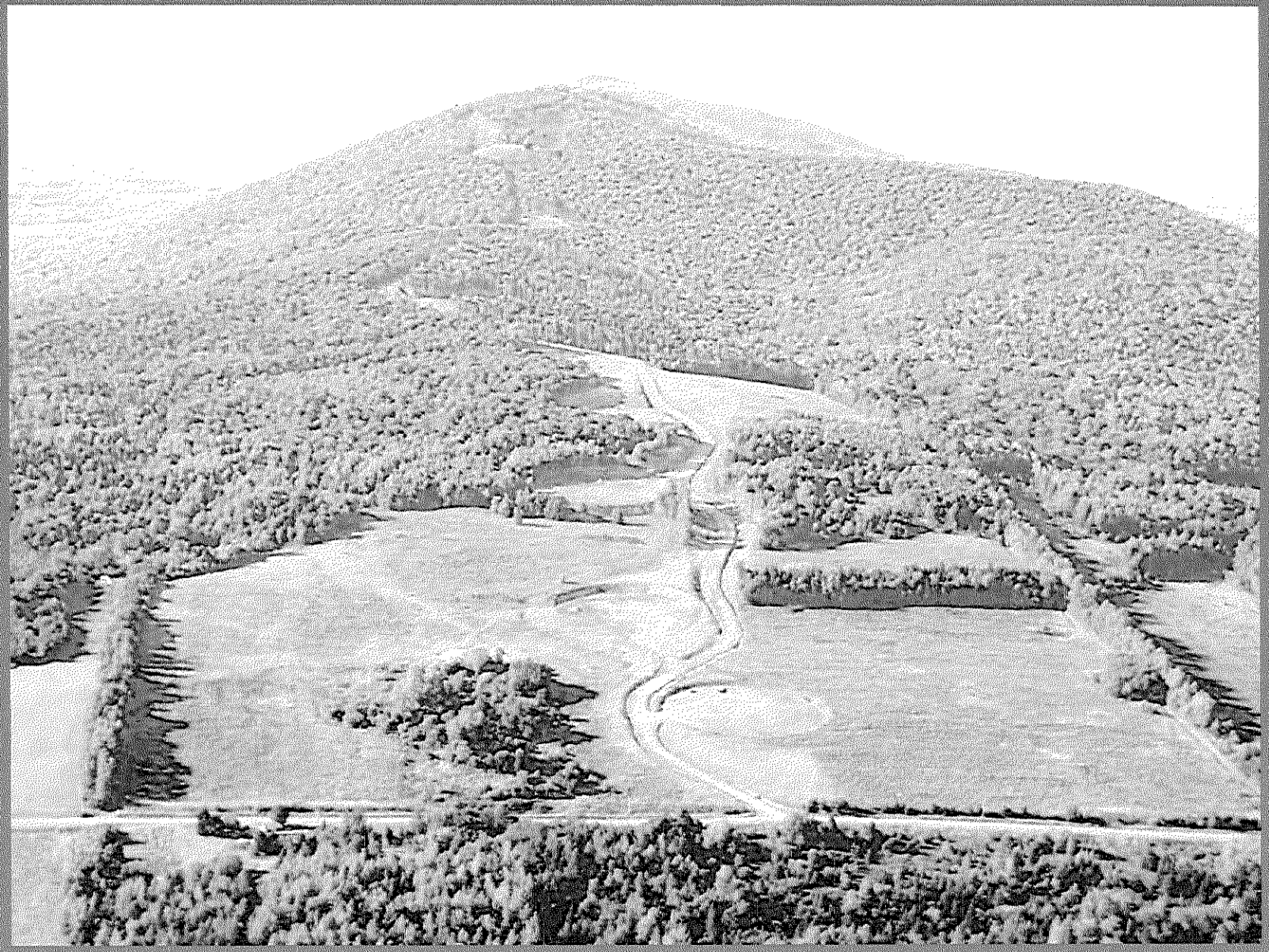
Michael A. Nissenbaum, MD, *presentation to Maine Medical Association March 2009*


SHABBONA
30 ft.
utility pole
45 ft.
silo
126 ft.
water tower
5 ft.
VW
6 ft.
man
398 ft.
Lee/DeKalb
turbine
125 ft.
transmission tower
289 ft.
Mendota Hills
turbine

Locations of 28 wind turbines (red dots) and 2 meteorological towers (gold dots), based on coordinates included in the FAA's 7460-1 database for the Mars Hill windplant, Aroostook County, ME.

wind turbine #9

Courtesy Dan Boone



Mars Hill's North End - East Ridge Road

Michael A. Nissenbaum, MD, March 2009

Aerial photo of Mars Hill taken during Summer of 2006

www.windaction.org/pictures/5919

Mars Hill Experience

Michael A. Nissenbaum, MD. March 2009

Mars Hill Wind Turbine Project Health Effects – Preliminary Findings

Questionnaire Used

Name	Age	Turbine Dist.	Years here	Occupation	Telephone #	email

Information provided by: Address:

Pre existing medical conditions or diagnoses:				
Medications prior to WTP:				
New medical conditions or diagnoses since WTP:				
New medications or dose changes since WTP:				

Sign/Symptom	Frequency/Severity	Freq/Sev PRIOR to WTP	Improves when away?	Seen a doc? New Rx or Tx?	Comment
Sleep disturbance:					
Difficulty falling asleep:					
Waking up mid. of night:					
Headaches ☐ Migraines ☐					
Dizziness					
Ears ringing					
Balance probs					
Unusual body sensations (specify):					
Weight: gain ☐ loss ☐					
Palpitations					
Changes in appetite (spec):					
Feelings of 'Stress'					
Feelings of 'Anger'					
Feelings of 'hopelessness'					
Feelings of 'anxiety'					
Feelings of 'irritability'					
Feelings of 'Depression'					
Other					

1. Has your quality of life been altered in any way since the wind turbine project went online?

2. How so?

3. Have you considered moving away?

4. Why haven't you moved away?

I understand and consent to this information being collected as part of a medical investigation. I understand no names shall be used in any report generated with this information, and that no patient names will be released at any time. The report or excerpts from the report may be presented to government or to other bodies such as the Maine Medical Association, and may be published in journals or other media.

_____ signature _____ date

_____ print name

Michael A. Nissenbaum, MD. March 2009

Mars Hill Wind Turbine Project Health Effects – Preliminary Findings

Population Sample - Demographics

- 20 homes in affected area
- Members of 9 homes interviewed
- ***None of 16 children interviewed***

Interviewed:

- 7 females, age range 41-73, mean 59 years
- 8 males, age range 47-75, mean 61 years

- Distance to nearest turbine ranges 1200 – 3400 ft
  Mean distance 2500 feet

Mars Hill Wind Turbine Project Health Effects – Preliminary Findings

Population Sample - Demographics

Sex	Age	Occupation	Distance to nearest turbine (ft)
F	confidential	confidential	3400
F	confidential	confidential	2400
F	confidential	confidential	2500
F	confidential	confidential	3000
F	confidential	confidential	3200
F	confidential	confidential	1200
F	confidential	confidential	2300
M	confidential	confidential	3400
M	confidential	confidential	2400
M	confidential	confidential	3000
M	confidential	confidential	3200
M	confidential	confidential	1200
M	confidential	confidential	2100
M	confidential	confidential	2400
M	confidential	confidential	2300

Mars Hill Wind Turbine Project Health Effects – Preliminary Findings
Symptoms Survey Results

SLEEP DISTURBANCES **(new onset)**

Sleep Disturbance (total)	**14**	**93%**
Waking up middle of night:	13	87%
Difficulty falling asleep:	7	47%
1-2/WK	3	20%
3-4/WK	2	13%
5-7/WK	9	60%
Discussed with MD:	**13**	**87%**
Offered Rx:	12	80%
Accepted Rx:	5	33%
Offered & Declined Rx:	7	47%

Michael A. Nissenbaum, MD. March 2009

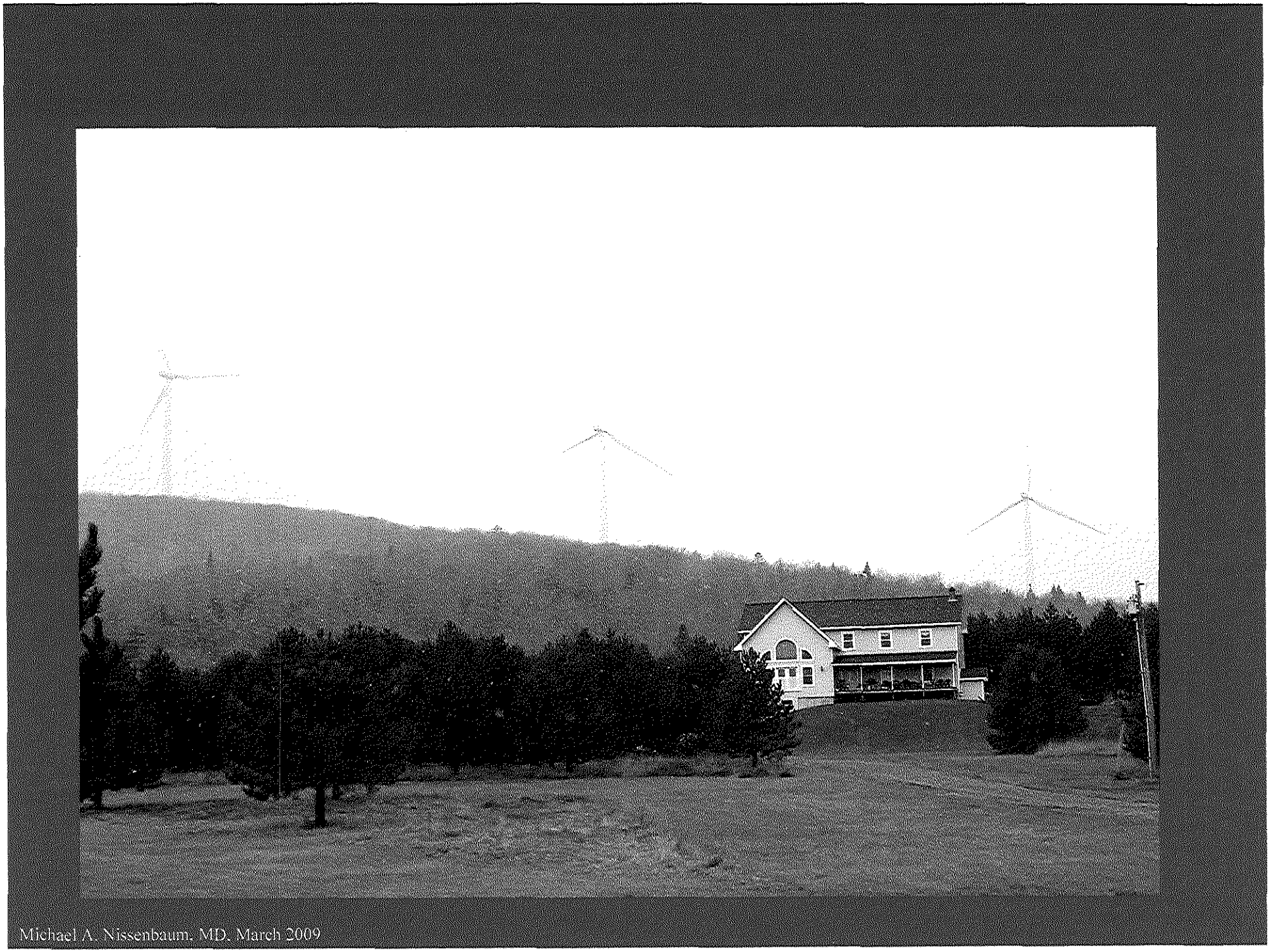
Michael A. Nissenbaum, MD. March 2009

Mars Hill Wind Turbine Project Health Effects – Preliminary Findings
Symptoms Survey Results

Headache

Increased Headache:	**8**	**53%**
New onset headaches:	6	40%
Increased migraine frequency:	2	13%
New Rx	**2**	**13%**
Increased Migraine Rx	**1**	**6%**

Michael A. Nissenbaum, MD, March 2009



Michael A. Nissenbaum, MD, March 2009

Mars Hill Wind Turbine Project Health Effects – Preliminary Findings
Symptoms Survey Results

Dizziness	**3**	**20%**
Tinnitus	**1**	**6%**
Unsteadiness	**1**	**6%**
Unusual Body sensations:	**3**	**20%**
Chest pulsations	**2**	
Pulsatile ear pressure	**1**	

Michael A. Nissenbaum. MD. March 2009

Mars Hill Wind Turbine Project Health Effects – Preliminary Findings
Symptoms Survey Results

Hypertension

New Dx Hypertension	3	20%
Worsened BP	1	6%
New Rx offered or increased:	4	27%
New Rx accepted or increased:	3	20%
New Rx declined:	1	

Mars Hill Wind Turbine Project Health Effects – Preliminary Findings
Symptoms Survey Results

Troubled by Shadow Flicker

Troubled by Shadow Flicker:	**5**	**33%**
nausea & dizziness	*2*	
dizziness alone	*2*	
triggers migraine	*1*	

" like turning a light switch on and off, on and off "

Mars Hill Wind Turbine Project Health Effects – Preliminary Findings
Symptoms Survey Results

Weight Change

Weight changes since turbines online:	**6**	**40%**
Weight gain:	**5**	**33%**
Weight loss:	**1**	**6%**

Michael A. Nissenbaum, MD. March 2009

Mars Hill Wind Turbine Project Health Effects – Preliminary Findings
Symptoms Survey Results

Psychiatric Symptomatology

Feelings of:

"Stress"	11	73%
"Anger"	13	87%
"Anxiety"	6	40%
"Irritability"	4	27%
"Hopelessness"	11	73%
"Depression"(total)	8	53%
new:	7	
increased:	1	

Mars Hill Wind Turbine Project Health Effects – Preliminary Findings
Symptoms Survey Results

Anger

" Absolute rage – you feel you want to kill someone, and don't know who to kill " *(67 y.o. woman)*

" So angry I could kill " *(65 y.o. man)*

" Makes my blood boil " *(65 y.o. woman)*

Mars Hill Wind Turbine Project Health Effects – Preliminary Findings
Symptoms Survey Results

Hopelessness

" Nobody will help us "

" No options – can't leave, and can't live here "

" This is an awful thing to have happen to you "

" People don't believe us – (our complaints) fall on deaf ears "

" No one cares. No one listens."

" They just tread on us "

" It's very hard watching my child suffer "

Mars Hill Wind Turbine Project Health Effects – Preliminary Findings
Symptoms Survey Results

Depression

7 new subjective symptom complexes **47%**
1 worsened prior Dx

4 New Rx offered
1 declined (incompatible with job license)
3 New Rx: Cymbalta, Lexapro, Mirtazepine **20%**

1 prior Dx, Rx increased/changed: Zoloft, Trazodone

Tearful at points during interview: 4 27%
2 women, 2 men

Mars Hill Wind Turbine Project Health Effects – Preliminary Findings
Symptoms Survey Results

New Prescriptions

Total Number of New and Increased Prescriptions: 15

New Rx	12
Increased	3

Cymbalta	*Lexapro*
Mirtazepine	*Zoloft*
Trazodone	*Meloxicam*
Hydrocodone	*Tylenol III*
Benazepril	*Topamax*
Anxiolytics (2)	
BP meds (3)	

10 Rx offered and declined

Mars Hill Wind Turbine Project Health Effects – Preliminary Findings
Symptoms Survey Results

Has your quality of life been affected? 15 100%

"Loss of joy in living . . .put a lot of life's plans on hold"
"No desire to go outside"
"Feel trapped"
"Dreams have been dashed"
"Was our dream home . . . it's all been stolen from us"
"We have no peace and quiet"
"My husband's (who has advanced MS) only pleasure in life was to see the wild animals. They are gone."
"No sleep"
"Sinking feeling every night when I (come home) and see them."
"I used to be able to hear it snow, before. Now, I do not look forward to going home."

Mars Hill Wind Turbine Project Health Effects – Preliminary Findings
Symptoms Survey Results

Have you considered moving away?

Yes	**15**	**100%**

Why have you not moved away?

Can't afford to:	**11**	**73%**

Recent professional appraisal with loss of home value perceived as enough to make it impossible to move away: 8/9 homes 90%

Mars Hill Wind Turbine Project Health Effects – Preliminary Findings
Symptoms Survey Results

Current survey weaknesses:

- Small sample
- Case Series structure
- Retrospective
- No study control
- No analysis for statistical significance as yet

- **Preliminary findings nonetheless alarming**
- **Do we have a right to subject the non coastal population of Maine to a 30 year prospective study?**

Mars Hill ME DEP Nightime Noise Variance 45=>50 dbA

"There are 4 protected locations were the noise level would be above 45 dBA, but less than 50 dBA, **which is approximately equivalent to the noise that songbirds make . . .** the Department finds that the applicants' project will not have an unreasonable adverse impact . . . and therefore grants a variance from the noise standards for the windpower farm."

DONE AND DATED AT AUGUSTA, MAINE, THIS 1ST DAY OF JUNE, 2004.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

By: Dawn R Gallagher
DAWN R. GALLAGHER, COMMISSIONER

PLEASE NOTE THE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application January 12, 2004
Date of application acceptance January 22, 2004

Date filed with Board of Environmental Protection
RC/L21635AN/BN

FILED
JUN - 2 2004
BOARD OF ENVIRONMENTAL PROT.
STATE OF MAINE

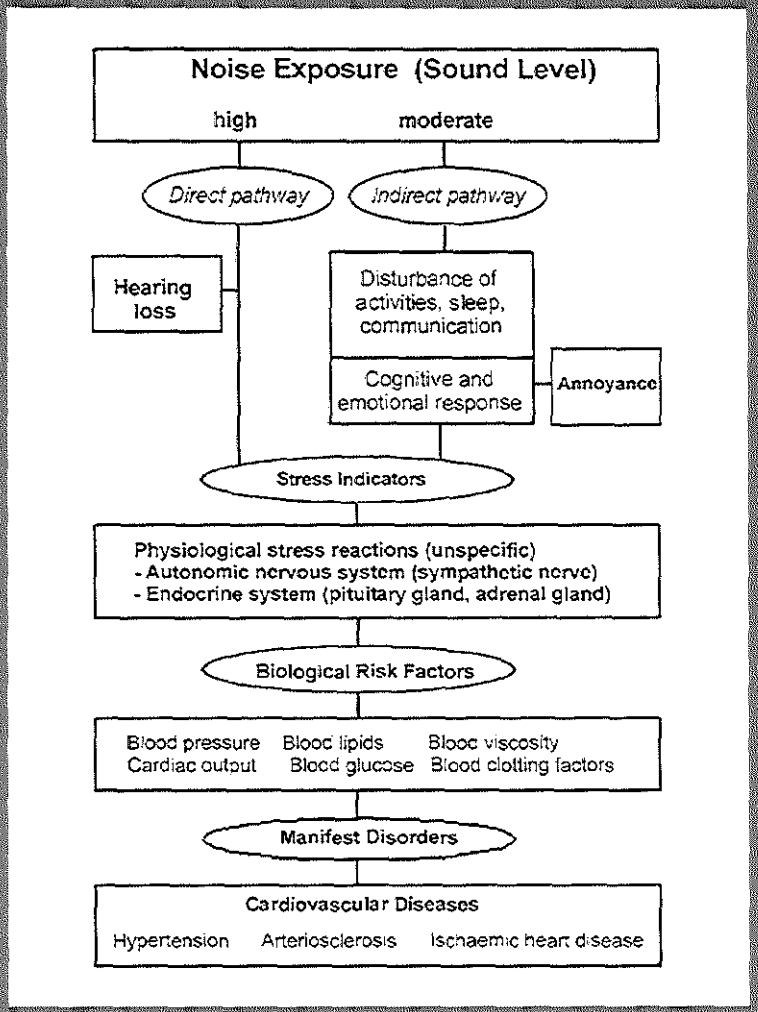
Michael A. Nissenbaum, MD, March 2009

Mars Hill ME DEP Nightime Noise Variance 45=>50 dbA

In fact, the turbines at Mars Hill produce night time readings 52.5 dBA, which Andrew Fisk of MDEP has characterized as 'substantially in compliance', and has issued a letter of compliance to First Wind/UPC.

He acknowledged, during a recent meeting in Fort Kent, that this reflected an average measurement which included downtime, though the statute is meant to regulate sound sources during operation.

Is this the Mars Hill Experience?



Preliminary findings are alarming

More detailed studies are required:

- Diurnal cortisol studies
- Larger population sample
- Detailed cardiovascular studies
- Detailed psychiatric assessments

*****16 Children*** MUST be studied.**

Health Aspects of Extra-Aural Noise Research, W. Babisch, German Federal Environmental Agency
Noise and Health 2004, 6:22, 69-81

DO NO HARM

In light of these growing, serious medical concerns, we propose a moratorium on the building of any such "wind farms" until more research is done on the health impact that such facilities will have on the communities surrounding such technology. These communities and the Maine DEP and Health Services must be allowed time to study and learn from the European and Canadian experiences, as well as from the many affected families in Mars Hill, Maine, and put into place appropriate regulations and ordinances, prior to expanding the wind industry in the State of Maine.

Excerpt, Statement of the Medical Staff of NMMC, March 2009

DO NO HARM

The State of Maine has a vast, unpopulated hinterland. There is little need to site industrial wind developments in proximity to residential communities if there is a risk of negative health effects. Quality of life, quality of place, and a healthful environment should be the right of all residents of Maine, including those of the rural north.

Excerpt, Statement of the Medical Staff of NMMC, March 2009

Preliminary Findings are Alarming
In the Meantime, DO NO HARM

Options:

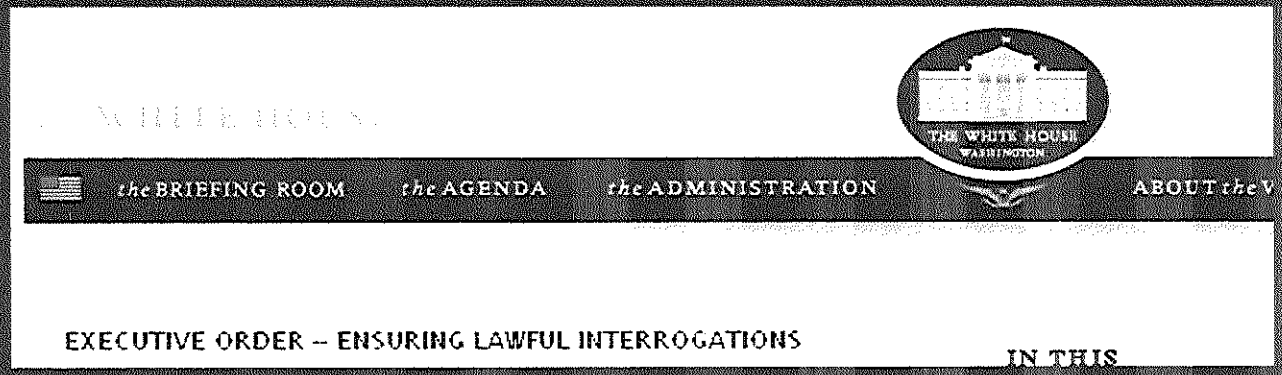
- Request moratorium until more extensive medical studies are done and current state of knowledge is fully understood by authorities and regulations reflecting risks and hazards put into place

- Request siting setbacks reflecting current state of knowledge and non US jurisdictions' best practices (France, Germany, Australia) – including use of db(C) calibration

- Request a Wind Developer "Code of Conduct" be established and enforced by the State's Attorney General's Office (similar to NY State)

Further Studies Must be Done NOW

How is any medical scientist going to conduct an epidemiological study of wind turbine health effects when 'Good Neighbor' and lease-holder gag clauses exist in land lease contracts?



Effective immediately, an individual in the custody or under the effective control of an officer, employee, or other agent of the United States Government, or detained within a facility owned, operated, or controlled by a department or agency of the United States, in any armed conflict, **shall not be subjected to any interrogation technique or approach, or any treatment related to interrogation, that is not authorized by and listed in Army Field Manual 2 22.3**

BARACK OBAMA
THE WHITE HOUSE,
January 22, 2009

Sleep Deprivation is not permitted in Army Field Manual 2 22.3

WHO 2000 *Guidelines: Community Noise*

- When low frequency components are present, noise measures based on dBA measurements are inappropriate - dBC is a better measure when health effects are to be minimized

- It should be noted that a large proportion of low frequency components may increase considerably the adverse effects on health and the evidence on low frequency noise is sufficiently strong to warrant immediate concern

Berglund et al., 2000

Wednesday, March 4, 2009
For Immediate Release:

At its monthly meeting held Tuesday, March 3, 2009, the Medical Staff of Northern Maine Medical Center unanimously approved the release of the following statement:

Health Concerns and the Need for Careful Siting of Wind Turbines

Members of Northern Maine Medical Center's medical staff endorse the use of alternative energies.

We echo the concerns of the Medical Staff of Rumford Community Hospital as regards an increasing body of literature and reports from Canada, the USA, and particularly from Europe suggesting that the deployment of industrial wind facilities in close proximity to places where people live, work or attend schools results in negative health effects, including and especially sleep deprivation and stress.

We know, as physicians, that sleep deprivation and chronic stress can result in many consequential negative health effects, some of them serious, over the long term.

These effects arise not only from audible noise frequencies but also from persistent inaudible low frequency noise waves of a cyclical nature which are felt, but not heard. There are a growing number of scientific observations and studies suggesting that people living up to 2 miles away from these industrial wind farms may be affected.

Many European nations with more than two decades of experience with industrial wind factories have now implemented regulations stipulating setbacks of 1-1.5 miles.

In light of these growing, serious medical concerns, we propose a

moratorium on the building of any such "wind farms" until more research is done on the health impact that such facilities will have on the communities surrounding such technology. These communities and the Maine DEP and Health Services must be allowed time to study and learn from the European and Canadian experiences, as well as from the many affected families in Mars Hill, Maine, and put into place appropriate regulations and ordinances, prior to expanding the wind industry in the State of Maine.

The State of Maine has a vast, unpopulated hinterland. There is little need to site industrial wind developments in proximity to residential communities if there is a risk of negative health effects. Quality of life, quality of place, and a healthful environment should be the right of all residents of Maine, including those of the rural north.

We also encourage the residents of Fort Kent, Maine, to exercise their rights and vote 'YES' at the next annual Town Meeting on March 23rd to a proposal to establish a moratorium in Fort Kent on the permitting of industrial wind development until such time as an ordinance to govern their siting is in place.

Signed,

Medical Staff, Northern Maine Medical Center

COMMENT LETTER 140

WR - DEIS
Public Comment #319

RECEIVED
JUL 19 2010
ENERGY FACILITY SITE EVALUATION COUNCIL

Skamania County
Economic Development Council

July 12, 2010

EFSEC
905 Plum Street SE
Olympia, WA 98504-3172

RE: Comments on Draft EIS for Whistling Ridge Energy Project

Dear EFSEC Council Members,

The thirteen members of the Board of Directors of the Skamania County Economic Development Council unanimously support approval of the Whistling Ridge Energy Project.

We have reviewed the Draft EIS and believe that it is objective, comprehensive, accurate and authoritative. The Draft EIS found;

- No significant impact on wildlife or bird populations.
- No significant impact on scenic views.
- No evidence of negative impact on tourism.

In addition to the clear benefits of clean renewable energy the Draft EIS substantiates the economic benefits that drive our organizations strong support. The Draft EIS found that:

- There will be considerable economic benefits to the tri-county area of Skamania, Klickitat and Hood River counties.
- The construction workforce hired to build the wind farm would average 143 workers, with a peak of approximately 265 workers.
- There will be an estimated $1.3 million in local, non-labor purchases during construction.
- Annual property tax revenue to the County would increase by $731,500.
- The White Salmon School District will see an estimated $150,000 annually.
- 8-9 new permanent jobs will be created.

Of the 1,070,080 acres in Skamania County, less than 3% can be developed to grow a tax base to create economic sustainability that provides financial resources to support necessary services to residents and visitors. Due to excessive federal and other public ownership of its land base, Skamania County must take advantage of each opportunity it has to grow its tax base.

The Whistling Ridge Energy project is not only a sound economic development opportunity, but also a clean, safe, green, renewable energy resource that will provide a better future for generations to come.

Sincerely,

Brad Andersen, Board Chair

Peggy Bryan

Peggy Bryan, Executive Director

COMMENT LETTER 141

Quatrefoil, Inc.
Design • Landscape Architecture • Space Planning

RECEIVED
JUL 19 2010
ENERGY FACILITY SITE
EVALUATION COUNCIL

EFSEC
905 Plum Street SE
Olympia, WA 98504-3172

BPA
Public Affairs Office – DKE-7
P.O. Box 14428
Portland, OR 97293-4428

RE: Whistling Ridge Energy Project DEIS

Dear Sirs,

I would like to express concerns about the proposed Whistling Ridge Energy Project's potential impacts on the National Scenic Area and in particular the Historic Columbia River Highway (HCRH), a district listed in the National Register of Historic Places.

I have been working with OPRD and ODOT on the restoration of Mitchell Point for several years and in particular the design of several overlooks to be located along the HCRH State Trail. I am concerned that the existing analysis does not adequately address this section of the HCRH Key viewing area. This area is due south of the proposed project and within the Special Management Area of the CRGNSA.

The HCRH is a linear scenic and historic resource in Oregon, extending from Troutdale to The Dalles. All of the HCRH is a Key Viewing Area within the Columbia River Gorge National Scenic Area (CRGNSA). Portions of the HCRH that are a trail are designated as a National Recreational Trail. Portions of the HCRH are closer to the proposed project than the sites chosen for visual resource analysis.

The Mitchell Point overlook is more visually sensitive than Interstate 84, both because it is higher in elevation and because it is a place where people stop and get out of their cars to take photos. It is closer to the proposed project than Viento State Park, Koberg Beach State Park and the Hood River to Mosier section of the Historic Columbia River Highway State Trail that were analyzed. This site should be analyzed for visual impact from the proposed project.

Thank you for the opportunity to comment on this DEIS.

Sincerely,

Brian E. Bainnson, ASLA
President, Quatrefoil, Inc

[redacted]

Michelle, Kayce (COM)

From: Patricia Meeks [redacted]
Sent: Friday, July 16, 2010 2:40 PM
To: COM EFSEC
Subject: Stop Whistling Ridge Wind Turbines Project -- Columbia Gorge -- We Need More Time

Stop The Whistling Ridge Wind Turbines Project -- Columbia Gorge

There has not been enough time for the average citizen to go through the EIS!

Most people I've spoken with haven't still have not seen the EIS. Residents do not even realize that if this project is built, most will never again be able to see anything but a full moon in the sky.

In the last month there have been a plethora of lawsuits across the county initiated by residents dealing with the harmful effects from wind turbines located in their local areas. A recent bird study in Klickitat County is not even mentioned in the EIS.

Please, do not rubber stamp this project!

Patricia Meeks
[redacted]

Michelle, Kayce (COM)

From: Posner, Stephen (COM)
Sent: Friday, July 16, 2010 7:27 AM
To: Wright, Al (COM)
Cc: Michelle, Kayce (COM); Talburt, Tammy (COM)
Subject: FW: Query on July DEIS deadline

Al,

Another request to extend the public comment period. Please let me know how you wish to respond.

Thanks.

From: COM EFSEC
Sent: Wednesday, July 14, 2010 12:10 PM
To: Posner, Stephen (COM)
Subject: FW: Query on July DEIS deadline

Stephen, I am forwarding this to you as the project manager.

From: repar [mailto:[redacted]
Sent: Saturday, July 10, 2010 9:24 AM
To: COM EFSEC
Subject: Query on July DEIS deadline

Dear EFSEC,

At the last public hearing on Whistling Ridge, numerous public participants, including the Yakama Tribe asking for government to government contact, asked for more time to dissect the 1500+ DEIS for this proposed wind farm. Have you all made any decision to prolong the 30-day comment period? Frankly, 30 days is not enough time to dissect, digest, analyze, and make coherent comments upon, such a monster DEIS. I would like to see the public participation process extended to a more reasonable comment period. Thank you.

Mary J. Repar

[redacted]

COMMENT LETTER 144

WR - DEIS
Public Comment #322

Michelle, Kayce (COM)

From: Wright, Al (COM)
Sent: Thursday, July 15, 2010 2:42 PM
To: Wallis, Robert (COM Contractor); Bob Wallis; Talburt, Tammy (COM); [redacted]
Cc: Posner, Stephen (COM); Michelle, Kayce (COM); Crews, Kyle (ATG)
Subject: FW: comment period for whistling ridge energy project

FYI - Al

From: Sally Newell [mailto:[redacted]
Sent: Thursday, July 15, 2010 1:42 PM
To: Wright, Al (COM); ammontano@bpa.gov
Subject: comment period for whistling ridge energy project

Gentlemen,

I am writing to request that you extend the comment period on the DEIS for the Whistling Ridge Energy Project. I recieved my hard copy of this 1500 page document on Monday, July 12, 2010. I requested it at the Underwood hearing on June 16th, after finding that looking at it online was not practical (hard to flip back and forth to cross-reference, etc.) and printing it on my printer impractical, too. When I tried to look at it at the library in White Salmon, I was only given the DEIS without the appendices.

To summarize, I have been given less than a week to review a complex, 1500 page document. I am probably not the only one. We were assured at the hearings by Jim Luce that hard copies would be available on request. I think he thought we would get them in a more timely manner. A week is not enough time to assimilate the information, let alone formulate constructive comments. I respectfully request that your agencies extend the comment period at least 60 days.

A cursory review of the document reveals much happy talk and shallow analysis of major issues associated with this project. I would like to provide detailed and meaningful input to this process, but will need more time. As I stated at the hearing, my community of Underwood, through which all construction traffic will be routed, feels like it is getting the bum's rush by your agencies and the applicant. As the first project of its kind in a forested, mountainous setting, on the doorstep of a internationally recognized scenic wonder, we hope that the process will be fair and thorough.

Sincerely,

Sally Newell

Montano,Andrew M - KEC-4

From: Sally Newell [redacted]
Sent: Thursday, July 15, 2010 1:42 PM
To: al.wright@commerce.wa.gov; Montano,Andrew M - KEC-4
Subject: comment period for whistling ridge energy project

Gentlemen,

I am writing to request that you extend the comment period on the DEIS for the Whistling Ridge Energy Project. I recieved my hard copy of this 1500 page document on Monday, July 12, 2010. I requested it at the Underwood hearing on June 16th, after finding that looking at it online was not practical (hard to flip back and forth to cross-reference, etc.) and printing it on my printer impractical, too. When I tried to look at it at the library in White Salmon, I was only given the DEIS without the appendices.

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Sincerely,

Sally Newell

COMMENT LETTER 145

WR - DEIS
Public Comment #323

Michelle, Kayce (COM)

From: Wright, Al (COM)
Sent: Friday, July 16, 2010 8:19 AM
To: Wallis, Robert (COM Contractor); Bob Wallis; [redacted] Luce, Jim (COM)
Cc: Posner, Stephen (COM); Talburt, Tammy (COM); Michelle, Kayce (COM); Crews, Kyle (ATG)
Subject: FW: Whistling Ridge Energy Project DEIS (DOE/EIS-0419)

Correction to FYI - Al

-----Original Message-----
From: Nathan Baker [mailto:[redacted]
Sent: Thursday, July 15, 2010 4:03 PM
To: Wright, Al (COM); Andrew M. Montaño; Posner, Stephen (COM)
Subject: RE: Whistling Ridge Energy Project DEIS (DOE/EIS-0419)

Correction: it was actually June 18, the day after the hearings, when I requested by phone and email four paper copies of the DEIS from EFSEC. We received two copies on July 12.

-----Original Message-----
From: Nathan Baker
Sent: Thursday, July 15, 2010 2:50 PM
To: Al Wright; Andrew M. Montaño; Stephen Posner
Subject: Whistling Ridge Energy Project DEIS (DOE/EIS-0419)

Dear Messrs. Wright, Montaño, and Posner:

I am writing on behalf of Friends of the Columbia Gorge to request that the agencies extend the deadline for written comments on the Whistling Ridge Energy Project DEIS. We request an extension of 45 days in order to have sufficient time to review the 1,500 pages of material in the DEIS and appendices and make meaningful, informed comments.

Until very recently, Friends' staff, consultants, and outside legal counsel have had a total of only two paper copies of the DEIS to use in our review. Essentially, nine different people in five different offices have had to share two paper copies. One of our consultants is often in the field and away from a computer; a paper copy has been essential for his review.

Friends' staff attended the June 16 and 17 public hearings in Underwood and Stevenson. At those meetings, EFSEC Chair Luce stated that paper copies would be provided to the public upon request. Friends' staff requested three additional copies of the DEIS by checking the appropriate box on the sign-in sheets. On June 21, I requested by phone and email four paper copies of the DEIS from EFSEC. On July 7, not having received the copies, I reiterated the request by email.

On July 12, Friends' staff finally received two additional paper copies. This was only one week before the comment deadline of July 19.

We certainly understand that the EFSEC and BPA staff are overwhelmed with the regular press of business, not to mention furlough days and special projects. We do not fault the agency staff for the delays in distributing paper copies.

However, we believe it is only fair for the agencies to extend the comment deadline, in order to give the public sufficient time to review and comment on the material in the DEIS.

We are also sympathetic to the impact on the citizens of the Gorge. I have spoken to other people who received their first and only paper copy this week, after requesting it almost a

month ago. Some citizens in rural areas of the Gorge are still using dial-up Internet access, or have no Internet access at all. For these citizens, obtaining electronic copies via the Internet was never an option. They are now left with an insufficient amount of time to digest 1,500 pages of material and write meaningful comments.

Friends respectfully requests an extension of the comment period on the DEIS. Thank you for considering this request.

Nathan Baker, Staff Attorney

[redacted]

Montano,Andrew M - KEC-4

From: Nathan Baker [redacted]
Sent: Thursday, July 15, 2010 2:50 PM
To: Al Wright; Montano,Andrew M - KEC-4; Stephen Posner
Subject: Whistling Ridge Energy Project DEIS (DOE/EIS-0419)

Dear Messrs. Wright, Montaño, and Posner:

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Nathan Baker, Staff Attorney
Friends of the Columbia Gorge
[redacted]

Montano,Andrew M - KEC-4

From: Nathan Baker [redacted]
Sent: Thursday, July 15, 2010 4:03 PM
To: Al Wright; Montano,Andrew M - KEC-4; Stephen Posner
Subject: RE: Whistling Ridge Energy Project DEIS (DOE/EIS-0419)

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Sent: Thursday, July 15, 2010 2:50 PM
To: Al Wright; Andrew M. Montaño; Stephen Posner
Subject: Whistling Ridge Energy Project DEIS (DOE/EIS-0419)

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Friends respectfully requests an extension of the comment period on the DEIS. Thank you for considering this request.

Nathan Baker, Staff Attorney
Friends of the Columbia Gorge
[redacted]

[redacted]

COMMENT LETTER 146

WR - DEIS
Public Comment #324

Michelle, Kayce (COM)

From: Wright, Al (COM)
Sent: Thursday, July 15, 2010 3:33 PM
To: Wallis, Robert (COM Contractor); Bob Wallis; Talburt, Tammy (COM); [redacted] Luce, Jim (COM)
Cc: Posner, Stephen (COM); Michelle, Kayce (COM); Crews, Kyle (ATG)
Subject: FW: Request for Whistling Ridge DEIS comment extension

Enough FYI Already! - Al

-----Original Message-----
From: Paul Smith [mailto:[redacted]
Sent: Thursday, July 15, 2010 3:25 PM
To: Wright, Al (COM); ammontano@bpa.gov; Posner, Stephen (COM)
Subject: Request for Whistling Ridge DEIS comment extension

Dear Messrs. Wright, Montano, Posner:

I would like to request an extension of 30-45 days for the deadline for written comments on the DEIS for the Whistling Ridge Energy Project in order to have sufficient time to review, digest and then make meaningful comments on this proposal since this will be the one and only opportunity as a concerned Gorge resident to do so.

This document along with its appendices is an enormous amount of material to try and make informed comments on since I only received my hard copy a matter of several weeks ago and I have dial-up internet at my home in the West end of Skamania county and simply can't download this material in any sort of realistic timeframe. I attended both the June 16th and 17th public hearings in Underwood and Stevenson where several other concerned citizens voiced their concerns that this is not an adequate amount of time for proper public review.

As a resident of the Columbia River Gorge living in Skamania county for the past 16 years, I respectfully request that you allow for an extension for the public comment period on this DEIS of the Whistling Ridge Wind Energy Project.

Thank you for your time and consideration,

Paul Smith
[redacted]

Montano,Andrew M - KEC-4

From: Paul Smith [redacted]
Sent: Thursday, July 15, 2010 3:25 PM
To: al.wright@commerce.wa.gov; Montano,Andrew M - KEC-4; stephen.posner@commerce.wa.gov
Subject: Request for Whistling Ridge DEIS comment extension

Dear Messrs. Wright, Montano, Posner:

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As a resident of the Columbia River Gorge living in Skamania county for the past 16 years, I respectfully request that you allow for an extension for the public comment period on this DEIS of the Whistling Ridge Wind Energy Project.

Thank you for your time and consideration,

Paul Smith
[redacted]

Michelle, Kayce (COM)

From: Posner, Stephen (COM)
Sent: Friday, July 16, 2010 7:36 AM
To: Talburt, Tammy (COM); Michelle, Kayce (COM)
Subject: FW: Comment extension request for Whistling Ridge

Importance: High

All requests to extend the public comment period for the DEIS should be logged in as comments on the DEIS. Thanks.

From: Loreley Drach [mailto:l[redacted]
Sent: Thursday, July 15, 2010 5:57 PM
To: Wright, Al (COM); ammontano@bpa.gov; Posner, Stephen (COM)
Subject: Comment extension request for Whistling Ridge
Importance: High

Dear Sirs,

I am writing to request an extension to the comment period for the WRE DEIS. I was able to obtain a hard copy of the DEIS from EFSEC's kind staff at the Underwood DEIS public meeting in mid-June. Since that time, of slightly less than 30 days, I have read through and marked up my copy, but still have not finished compiling and commenting, due to the complexity and size of the DEIS. Please provide additional time for the public to offer meaningful comments.

Sincerely,
Loreley Drach
[redacted]

Montano,Andrew M - KEC-4

From: Loreley Drach [redacted]
Sent: Thursday, July 15, 2010 5:57 PM
To: al.wright@commerce.wa.gov; Montano,Andrew M - KEC-4; stephen.posner@commerce.wa.gov
Subject: Comment extension request for Whistling Ridge
Importance: High

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Sincerely,
Loreley Drach
[redacted]

Michelle, Kayce (COM)

From: Posner, Stephen (COM)
Sent: Friday, July 16, 2010 7:36 AM
To: Michelle, Kayce (COM)
Cc: Talburt, Tammy (COM)
Subject: FW: Whistling Ridge Energy Project DEIS (DOE/EIS-0419)

Treat as comment on DEIS. Thanks.

-----Original Message-----
From: Rick Aramburu [mailto:[redacted]s.com]
Sent: Thursday, July 15, 2010 4:27 PM
To: Wright, Al (COM); Andrew M. Montaño; Posner, Stephen (COM)
Cc: Nathan Baker; Gary Kahn
Subject: Re: Whistling Ridge Energy Project DEIS (DOE/EIS-0419)

Dear Messrs. Wright, Montano and Posner.

This office represents Save Our Scenic an interested party to the proposed Whistling Ridge Energy project. Given the length of the DEIS and the detailed materials found therein, we join in the request of Friends of the Columbia Gorge (Friends) to extend the comment period for 45 days to allow full opportunity to comment on this DEIS as well as to provide additional notice to interested persons.

We also note that the recently issued (June 29, 2010) Pre Hearing Conference Order Number 4 (PHO 4) in the EFSEC proceeding on the Whistling Ridge matter addressed issues regarding the DEIS. In that order, it was acknowledge that at the June 16 public hearing public comments "identified potentially serious errors in the draft EIS." PHO 4 also indicates the EFSEC "expects that the Applicant will incorporate into its direct presentation any information needed to address asserted significant flaws in the DEIS." SOSA and Friends have objected to this procedure. Equally, PHO 4 indicated that EFSEC was not going to prepare the final EIS prior to the adjudicative hearings. SOSA and Friends have also objected to this procedure. EFSEC has entered PHO 5 (July 9, 2010) which allowed parties and intervenors to the EFSEC proceedings to have until July 19 to respond to the SOSA/Friends objections (the same day comments on the DEIS are due).

To our knowledge, neither EFSEC or BPA has communicated to any recipients or interested commenters on the DEIS, other that the parties to the EFSEC proceedings, that it has made the decisions found in PHO 4. This would include federal or state agencies. No general notice of these decisions, as far as we know, have been placed in the Federal Register nor to persons that spoke at the public hearing or requested copies of the DEIS. The actions taken in PHO 4 may well modify comments that might come from

agencies or members of the public. For example, additional detail may be included in DEIS comments from interested agencies or members of the public knowing that such matters would be taken up at the adjudicatory hearings.
Further DEIS commenters may wish to address the validity and appropriateness of the procedures announced in PHO 4.

Based on the foregoing, SOSA requests the following. First, that the comment period for the DEIS be extended for at least 45 days. Second, and in the alternative, that EFSEC and BPA provide notice, consistent with the usual notice for the availability of DEIS, of the decisions made regarding the use of the DEIS in PHO 4, i.e. a) that the draft EIS will be used in the adjudicative hearings (instead of the final EIS in the hearings and b) that the applicant is expected to incorporate in its direct presentation evidence regarding

"significant flaws" in the DEIS. The detail in such notice will be dependent on the anticipated rulings by EFSEC on the SOSA and Friends objections. If that ruling is delayed, such notice should provide a minimum of 45 days for comments after the issuance of the notice.

Thank you for your attention to these requests.

J. RICHARD ARAMBURU

[redacted]

CONFIDENTIALITY NOTICE
This email message may be protected by the attorney/client privilege, work product doctrine or other confidentiality protection. If you believe that it has been sent to you in error, do not read it. Please reply to the sender that you have received the message in error, and then delete it. Thank you.

----- Original Message -----
From: "Nathan Baker" [redacted]
To: "Al Wright" <al.wright@commerce.wa.gov>; "Andrew M. Montaño" <ammontano@bpa.gov>; "Stephen Posner" <stephen.posner@commerce.wa.gov>
Sent: Thursday, July 15, 2010 2:49 PM
Subject: Whistling Ridge Energy Project DEIS (DOE/EIS-0419)

Dear Messrs. Wright, Montaño, and Posner:

I am writing on behalf of Friends of the Columbia Gorge to request that the agencies extend the deadline for written comments on the Whistling Ridge Energy Project DEIS. We request an extension of 45 days in order to have sufficient time to review the 1,500 pages of material in the DEIS and appendices and make meaningful, informed comments.

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projects. We do not fault the agency staff for the delays in distributing paper copies.

However, we believe it is only fair for the agencies to extend the comment deadline, in order to give the public sufficient time to review and comment on the material in the DEIS.

We are also sympathetic to the impact on the citizens of the Gorge. I have spoken to other people who received their first and only paper copy this week, after requesting it almost a month ago. Some citizens in rural areas of the Gorge are still using dial-up Internet access, or have no Internet access at all. For these citizens, obtaining electronic copies via the Internet was never an option. They are now left with an insufficient amount of time to digest 1,500 pages of material and write meaningful comments.

Friends respectfully requests an extension of the comment period on the DEIS. Thank you for considering this request.

Nathan Baker, Staff Attorney
Friends of the Columbia Gorge

Montano,Andrew M - KEC-4

From: Rick Aramburu [redacted]
Sent: Thursday, July 15, 2010 4:27 PM
To: Al Wright; Montano,Andrew M - KEC-4; Stephen Posner
Cc: Nathan Baker; Gary Kahn
Subject: Re: Whistling Ridge Energy Project DEIS (DOE/EIS-0419)

Dear Messrs. Wright, Montano and Posner.

This office represents Save Our Scenic an interested party to the proposed Whistling Ridge Energy project. Given the length of the DEIS and the detailed materials found therein, we join in the request of Friends of the Columbia Gorge (Friends) to extend the comment period for 45 days to allow full opportunity to comment on this DEIS as well as to provide additional notice to interested persons.

We also note that the recently issued (June 29, 2010) Pre Hearing Conference Order Number 4 (PHO 4) in the EFSEC proceeding on the Whistling Ridge matter addressed issues regarding the DEIS. In that order, it was acknowledge that at the June 16 public hearing public comments "identified potentially serious errors in the draft EIS." PHO 4 also indicates the EFSEC "expects that the Applicant will incorporate into its direct presentation any information needed to address asserted significant flaws in the DEIS." SOSA and Friends have objected to this procedure. Equally, PHO 4 indicated that EFSEC was not going to prepare the final EIS prior to the adjudicative hearings. SOSA and Friends have also objected to this procedure. EFSEC has entered PHO 5 (July 9, 2010) which allowed parties and intervenors to the EFSEC proceedings to have until July 19 to respond to the SOSA/Friends objections (the same day comments on the DEIS are due).

To our knowledge, neither EFSEC or BPA has communicated to any recipients or interested commenters on the DEIS, other that the parties to the EFSEC proceedings, that it has made the decisions found in PHO 4. This would include federal or state agencies. No general notice of these decisions, as far as we know, have been placed in the Federal Register nor to persons that spoke at the public hearing or requested copies of the DEIS. The actions taken in PHO 4 may well modify comments that might come from agencies or members of the public. For example, additional detail may be included in DEIS comments from interested agencies or members of the public knowing that such matters would be taken up at the adjudicatory hearings. Further DEIS commenters may wish to address the validity and appropriateness of the procedures announced in PHO 4.

Based on the foregoing, SOSA requests the following. First, that the comment period for the DEIS be extended for at least 45 days. Second, and in the alternative, that EFSEC and BPA provide notice, consistent with the usual notice for the availability of DEIS, of the decisions made regarding the use of the DEIS in PHO 4, i.e. a) that the draft EIS will be used in the adjudicative hearings (instead of the final EIS in the hearings and b) that the applicant is expected to incorporate in its direct presentation evidence regarding "significant flaws" in the DEIS. The detail in such notice will be dependent on the anticipated rulings by EFSEC on the SOSA and Friends objections. If that ruling is delayed, such notice should provide a minimum of 45 days for comments after the issuance of the notice.

Thank you for your attention to these requests.

J. RICHARD ARAMBURU
[redacted]

[redacted]

CONFIDENTIALITY NOTICE
This email message may be protected by the attorney/client privilege, work product doctrine or other confidentiality protection. If you believe that it has been sent to you in error, do not read it. Please reply to the sender that you have received the message in error, and then delete it. Thank you.

----- Original Message -----
From: "Nathan Baker" <[redacted]
To: "Al Wright" <al.wright@commerce.wa.gov>; "Andrew M. Montaño" <ammontano@bpa.gov>; "Stephen Posner" <stephen.posner@commerce.wa.gov>
Sent: Thursday, July 15, 2010 2:49 PM
Subject: Whistling Ridge Energy Project DEIS (DOE/EIS-0419)

Dear Messrs. Wright, Montaño, and Posner:

I am writing on behalf of Friends of the Columbia Gorge to request that the agencies extend the deadline for written comments on the Whistling Ridge Energy Project DEIS. We request an extension of 45 days in order to have sufficient time to review the 1,500 pages of material in the DEIS and appendices and make meaningful, informed comments.

Until very recently, Friends' staff, consultants, and outside legal counsel have had a total of only two paper copies of the DEIS to use in our review. Essentially, nine different people in five different offices have had to share two paper copies. One of our consultants is often in the field and away from a computer; a paper copy has been essential for his review.

Friends' staff attended the June 16 and 17 public hearings in Underwood and Stevenson. At those meetings, EFSEC Chair Luce stated that paper copies would be provided to the public upon request. Friends' staff requested three additional copies of the DEIS by checking the appropriate box on the sign-in sheets. On June 21, I requested by phone and email four paper copies of the DEIS from EFSEC. On July 7, not having received the copies, I reiterated the request by email.

On July 12, Friends' staff finally received two additional paper copies. This was only one week before the comment deadline of July 19.

We certainly understand that the EFSEC and BPA staff are overwhelmed with the regular press of business, not to mention furlough days and special projects. We do not fault the agency staff for the delays in distributing paper copies.

However, we believe it is only fair for the agencies to extend the comment deadline, in order to give the public sufficient time to review and comment on the material in the DEIS.

We are also sympathetic to the impact on the citizens of the Gorge. I have spoken to other people who received their first and only paper copy this week, after requesting it almost a month ago. Some citizens in rural areas of the Gorge are still using dial-up Internet access, or have no Internet access at all. For these citizens, obtaining electronic copies via the Internet was never an option. They are now left with an insufficient amount of time to digest 1,500 pages of material and write meaningful comments.

Friends respectfully requests an extension of the comment period on the DEIS. Thank you for considering this request.

Nathan Baker, Staff Attorney
Friends of the Columbia Gorge

COMMENT LETTER 149

Michelle, Kayce (COM)

From: [redacted]
Sent: Friday, July 16, 2010 3:56 PM
To: COM EFSEC
Subject: I support Whistling Ridge

Hello Energy Facility Site Evaluation Council,

I have lived in the Columbia Gorge (White Salmon, WA.)since 1950 and just recently moved to The Dalles, OR. The Whistling Ridge Energy Project is idealy located, out of the Gorge Scenic area and would disturb very few people---if any.
I am 100% in favor of this project and hope you can see your way clear to approve this very worthy project without any further delay.
Doug Holliston

Sincerely,
DOUG HOLLISTON
[redacted]

COMMENT LETTER 150

Michelle, Kayce (COM)

From: [redacted]
Sent: Friday, July 16, 2010 5:06 PM
To: COM EFSEC
Subject: Whistling Ridge Energy Project Draft EIS

We live in Underwood, and fully support the Whistling Ridge Energy Project. We have heard no reasonable or convincing reasons why the project should not proceed to completion.

Richard and Beverly martin

[redacted]

Michelle, Kayce (COM)

From: sherri irish [redacted]
Sent: Friday, July 16, 2010 8:49 PM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

The Columbia River Gorge is a National Treasure that people travel from around the world to see and experience. The draw is it's natural beauty; waterfalls, cliffs, rivers, mountain vistas. One can drive or hike countless areas in the gorge and be surrounded by exquisit beauty. However, these pristine views are in jeopardy of being lost forever if Wind Turbines are not kept from intruding onto these skylines.

There is plenty of land in this country to support wind turbines. We need to be responsible with our placement of these wind farms. Forests should be protected from destruction in order to erect turbines. After all, wind energy is supposed to be better fot the environment. If we destroy forrests for wind energy then we have defeated the point of alternative energy sources. This country has millions of wide open plains and grasslands with steady winds that are far more suitable for wind farms.

Please, protect the views in the Columbia River National Scenic Area. The natural landscape is why this Scenic Act was created. There is nothing natural about seeing turbines on the skyline. Thank you for allowing me the opportunity to give my opinion. Sherri Irish
Gorge Resident

sherri irish
[redacted]

WR - DEIS
Public Comment #336

COMMENT LETTER 152

Michelle, Kayce (COM)

From: [redacted]
Sent: Saturday, July 17, 2010 6:56 AM
To: COM EFSEC
Subject: I support Whistling Ridge

Hello Energy Facility Site Evaluation Council,

I would like to voice my strong support for the Whistling Ridge Energy Project. SDS is a very reputable company with strong ties to the community. This wind farm will give the Skamania & Klickitat County economy the boost it needs. We are too dependent on timber harvests and federal timber payments. Too many residents are stuck in low-income brackets while unemployment ranks far above the state average. Fortunately, Skamania has another natural resource to develop: wind. Bringing another industry here is exactly what our county needs. It will stimulate local spending, create jobs, and provide new tax revenues. How can that be a bad thing? Skamania County needs to diversify its resources and revenue, and Whistling Ridge can make that happen. I hope the Council approves the SDS application and that the project advances quickly.

Sincerely,
David Wasgatt
[redacted]

COMMENT LETTER 153

WR - DEIS
Public Comment #337

Michelle, Kayce (COM)

From: Bob Davis [redacted]
Sent: Saturday, July 17, 2010 9:58 AM
To: COM EFSEC
Subject: Comments on Whistling Ridge project
Attachments: whistleridge.docx

From: Bob Davis [mailto:[redacted]
Sent: 07/17/2010 9:50 AM
To: 'efsec@commerce.wa.govWashington'
Subject: Comments on Whistling Ridge project

Please see attached. Comments also sent today by mail.

Bob Davis

[redacted]

Should a large-scale wind turbine development be sited in Skamania County?

Bob Davis, Energy Efficiency Engineer, Ecotope, Inc.
(Hood River Valley High School Class of 1980)

I appreciate the opportunity to comment on the Whistling Ridge Project.

Normally I would just say: yes, do it, it's a renewable. But the Columbia Gorge is a one-of-a-kind place. I grew up in the gorge; I spent a lot of my youth exploring it, including the forest lands in Skamania County. I observed up close the movement to establish the National Scenic Area. A primary reason the NSA was established was the poor stewardship of some of the Gorge's extraction industries such as SDS Lumber. The prevailing approach of SDS and their cohorts was and is to cut/quarry as fast as possible. In the past years, SDS cut to within an inch of the NSA and in full view of its core scenic assets (clear cuts across from Viento Park and nearby areas)

SDS would argue they were/are playing by the rules. Perhaps they were, but I suspect they found some sort of barely legal ways to bend the rules. The death of the viewsheds in the NSA is death by a thousand cuts. Some would argue there are already an interstate freeway and a railroad and a whole dam but that is exactly WHY the preservation of what remains of the viewshed is so important to the value of the NSA.

Much of the Columbia Gorge is now a National SCENIC area. We need to preserve the scenic quality whenever possible; the rules of the NSA are clear on that point. SDS has always viewed the NSA and the NPS with disdain and has done their darndest to stick their finger in the eye of those who love the Scenic Area. I don't think they should be allowed to do it again. They own lots of land (70,000 acres, according to Wally Stevenson) and can find another way to make money on it.

There is another reason I question this project. The Northwest Power and Conservation Council's 6th Plan ranks conservation ahead of wind power in terms of cost-effectiveness. I work on verifying conservation technologies and, for the most part, they do work. The hardest part has been finding someone to do the work (thankfully that is now changing) but the results have been proven in a number of regional studies that extending back to the early 1980s. There is still a lot of conservation to procure, and the economics are considerably more favorable than the economics of wind, especially when real utilization factors are employed. (That is, turbines even in very windy places only generate usable electricity about 40% of the time; most turbines have much lower utilization rates.) I urge EFSEC to consider these issues seriously when ruling on the siting application.

17 July 2010
Bob Davis

EFSEC

Talburt, Tammy (COM)

From: Mary Harper [redacted]
Sent: Sunday, July 18, 2010 11:48 AM
To: COM EFSEC
Subject: Whistling Ridge project should be denied

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am adamantly opposed to this project as it would violate the spirit of the law of the Columbia Gorge Scenic Area Act and destroy the intended viewshed of the area.

I am a supporter of alternative energy in general. But, I firmly believe that industrial wind turbine development should be installed in areas that are very remote from people and vital natural resources.

I also request that EFSEC and BPA extend the comment period in order to allow the public sufficient time to review and comment on the 1,578 pages of material contained in the DEIS and appendices. Please extend the comment period by 45 days.

Mary Harper
[redacted]

Michelle, Kayce (COM)

From: Jon Cole [redacted]
Sent: Monday, July 19, 2010 12:58 PM
To: COM EFSEC
Subject: whistling ridge comments
Attachments: Whistling_Ridge_DEIS_Comments_JON_COLE.pdf

Stephen,

Please find my attached comment letter in reference to the Draft EIS for the proposed Whistling Ridge Energy Project. Also, If you could add me to your email list for this project, I would greatly appreciate it.

Cordially,

JON COLE

July 19, 2010

EFSEC
Comments: Whistling Ridge Energy Project.
905 Plum Street SE
Olympia, Washington 98504-3172
efsec@commerce.wa.gov

To whom it may concern,

I would like to comment on the Draft Environmental Impact Statement prepared for the Whistling Ridge Energy Project proposed by Whistling Ridge Energy, LLC.

In order to complete a successful wind project, there are several hurdles a project must pass in order to be considered viable. If you look around locally, regionally, or nationally, there are very few sites that meet enough of these criteria to be considered viable. The Whistling Ridge Energy Project easily clears these hurdles:

Wind. The project proponents have studied wind on the project area extensively for several years. Along with the data collected, all of the trees in the project vicinity are "flagged" indicating strong westerly winds along the entire ridgeline of the project area.

Load. With Seattle and Portland populations nearby, there is plenty of electrical demand close to the project. Compared to some of the large scale projects in places like Eastern Wyoming where wind resources are superb, the Whistling Ridge Energy Project clearly has a leg up because not only does it have viable wind, but also nearby load.

Transmission. Whistling ridge Energy Project has a major BPA transmission line located right in the middle of the project area. The project's ability to efficiently tie into the grid without constructing miles of transmission lines greatly reduces the overall impact of the project. Many wind projects need to construct or upgrade miles of transmission lines in order to connect the projects to the transmission grid. Again this is a distinct plus for the Whistling Ridge Energy Project and greatly reduces the overall impact and necessary foot print of the project.

Ownership. The Whistling Ridge Energy Project is located entirely on lands owned by two private entities. There are no other private or public parcels intermingled. This may seem like a small detail. However, different ownerships have different management philosophies and perhaps different levels of commitment to a project and can jeopardize the project as a whole. Having essentially a single landowner ensures the commitment to the project and helps guarantee the success.

Regulatory restrictions: Whistling Ridge Energy Project is located entirely Outside the Columbia River Gorge National Scenic Area. While close, the fact that the project is outside the boundary is significant. In addition, the draft EIS found no significant impacts to plants and wildlife in the area. The lands in the project area are currently managed for intensive silviculture and have been harvested using heavy

machinery multiple times. This area is neither natural nor a pristine environment. These are "working" lands and have been for a very long time.

Revenue. The Whistling Ridge Energy Project is located in Skamania County, which is very significant for the local and regional economy. Skamania County is largely owned by the Federal Government with over 80% of available lands managed by the USFS. In the decades where Federal timber harvests were high, Skamania County received considerable funding from harvest dollars. Harvest levels and associated receipts to the County have disappeared. The County has spent considerable time and energy trying to maintain and replace this vital source of revenue. The Whistling Ridge Energy Project will contribute significant dollars to the County during the construction phase in addition to providing a large, stable source of annual tax revenue to the County. For this revenue, the County has to provide very little service in return. The project uses existing county roads and infrastructure. The County will have little burden both initially and on and ongoing basis.

It takes a very unique site and set of circumstances to meet all of these thresholds. I would urge any of the council members to try and find a site that "fits" any better than this one.

Washington voters passed Initiative 937 in 2006 requiring large utilities to obtain 15% of their electricity from new renewable resources such as solar and wind by 2020. Whistling Ridge Energy LLC has proposed a project to help meet the requirements of this initiative. I strongly urge the Council to see the value of this project for the short and long term local, regional, and national benefits to society and our goal toward a clean energy future.

Thank you for taking the time to review my comments.

Cordially,

Jon Cole

[redacted]

WR - DEIS
Public Comment #350

Talburt, Tammy (COM)

From: Jon Cole [redacted]
Sent: Monday, July 19, 2010 6:13 PM
To: COM EFSEC
Subject: FW: whistling ridge comments
Attachments: Whistling_Ridge_DEIS_Comments_JON_COLE.pdf

Hello,

Sending again with delivery receipt....just wanted to make sure you received my comments.

JON

From: Jon Cole [mailto:[redacted]
Sent: Monday, July 19, 2010 12:58 PM
To: efsec@commerce.wa.gov
Subject: whistling ridge comments

Stephen,

Please find my attached comment letter in reference to the Draft EIS for the proposed Whistling Ridge Energy Project. Also, If you could add me to your email list for this project, I would greatly appreciate it.

Cordially,

JON COLE

July 19, 2010

EFSEC
Comments: Whistling Ridge Energy Project.
905 Plum Street SE
Olympia, Washington 98504-3172
efsec@commerce.wa.gov

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It takes a very unique site and set of circumstances to meet all of these thresholds. I would urge any of the council members to try and find a site that "fits" any better than this one.

Washington voters passed Initiative 937 in 2006 requiring large utilities to obtain 15% of their electricity from new renewable resources such as solar and wind by 2020. Whistling Ridge Energy LLC has proposed a project to help meet the requirements of this initiative. I strongly urge the Council to see the value of this project for the short and long term local, regional, and national benefits to society and our goal toward a clean energy future.

Thank you for taking the time to review my comments.

Cordially,

Jon Cole

[redacted]2

COMMENT LETTER 156

WR - DEIS
Public Comment #349

Michelle, Kayce (COM)

From: [redacted]
Sent: Monday, July 19, 2010 5:38 PM
To: COM EFSEC
Subject: I support Whistling Ridge

Hello Energy Facility Site Evaluation Council,

I would like to voice my strong support for the Whistling Ridge Energy Project.

It is very unfortunate that environmentalists and others have chosen to oppose this project when our global environment is already experiencing the impacts of climate change. What good is a scenic area if our global environment is polluted with carbon-emitting energy sources? It is indeed sad that wind turbines impact individual birds. As a birder and long time volunteer for a raptor rehabilitation center, I\'m the last person who would want to see birds die. But they are dieing by the thousands---tens of thousands----across the globe because of climate change\'s impact on habitat. We simply cannot afford to pass up opportunities to create more renewable energy.

Washington State utilities must reach the goals set by Initiative 937. Wind is the most feasible and most cost-effective option for bringing 15% new renewable energy on the grid by 2020, which means we need to build more wind farms. Skamania County has the wind, SDS Lumber has the land: it is a match made in heaven. Many studies have shown that the environmental impact of the Whistling Ridge Energy Project would be minimal. For the last century, the site has been used in commercial forest operations. The land has already been cleared, roads built, transmission lines already installed, and wildlife habitats already fragmented. The impacts on a few other species that might be affected are rated low-risk. The environmental benefits are numerous. Wind is clean, renewable, and does not consume water or produce waste. Whistling Ridge will generate 75 megawatts of electricity; enough to power 20,000 homes a year, without contributing to global climate change. The choice is clear: support Whistling Ridge and Skamania County by approving this project.

Sincerely,
Ashley Henry
[redacted]

Talburt, Tammy (COM)

From: Laurel Lease [redacted]
Sent: Tuesday, July 20, 2010 6:07 PM
To: COM EFSEC
Subject: Whistling Ridge Energy Project

As a Skamania County resident who would be located near the area where the SDS' 75 megawatt wind farm would be sited, I am in full support of this project. It has no negative effects that will harm the environment, but will provide much needed energy and revenue for our area. I have lived near forest lands owned by SDS since 1983 and know that SDS has always been a responsible and considerate neighbor to us at the Northwestern Lake area. I give them my full endorsement without any reservations.

Laurel Lease
[redacted]

The New Busy is not the old busy. Search, chat and e-mail from your inbox. Get started.

COMMENT LETTER 158

WR - DEIS
Public Comment #356

Michelle, Kayce (UTC)

From: Lynda Lauterbach [redacted]
Sent: Friday, July 23, 2010 7:10 AM
To: COM EFSEC
Subject: Whistling Ridge Threatens Gorge

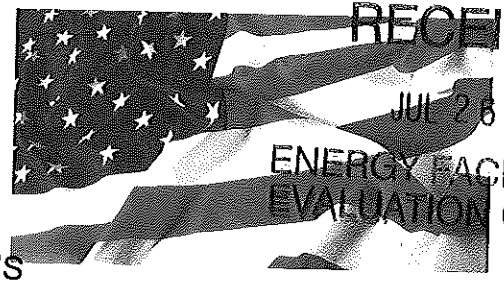
I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am pleased that the best available area for renewable energy is being utilized. The ridgelines allow the greatest amount of wind energy to be capturied.

Lynda Leask, Architect,
[redacted]

Lynda Lauterbach
[redacted]

COMMENT LETTER 159



RECEIVED
JUL 26 2010
ENERGY FACILITY SITE
EVALUATION COUNCIL

WR - DEIS
Public Comment #357

7-21-10

I AM 100% IN FAVOR OF THE
WHISTLING RIDGE PROJECT—
I HAVE LIVED IN SKAMANIA
COUNTY 84 YEARS, EXCEPT 3 YEARS
U.S. NAVY SERVICE IN W.W.-2 —

JACK E. JOHNSON

[redacted]

Jack E. Johnson

Helping Our Heroes

COMMENT LETTER 160

WR - DEIS
Public Comment #358

Michelle, Kayce (UTC)

From: Ron Daubenspeck [redacted]
Sent: Tuesday, July 27, 2010 7:28 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Energy Project

I am writing in support of the Whistling Ridge Energy Project. As a retiree of Skamania Co. PUD, I see a great need for alternative sources of energy.

Also, my husband and I do not believe their placement will hamper the beauty of the Columbia River Gorge. On a recent trip from Carson, WA to Pendleton, OR along I84, we actually stopped along the freeway to take pictures of the windmills there because we thought they were so awesome and beautiful!

Thank you for allowing us the opportunity to comment....

Ron & Betty Daubenspeck
[redacted]

July 27, 2010

BPA
Public Affairs Office – DKE-7
P.O. Box 14428
Portland, Oregon 97293-4428

EFSEC
905 Plum Street SE
Olympia, Washington 98504-3172

To Whom It May Concern:

I am writing to comment on the Whistling Ridge Energy Project Draft Environmental Impact Statement (DEIS). Please include my comments in the public record, and include my name on the mailing list for all future notices and decisions.

I have lived in the area of this proposed project for 18 years and have followed wind energy developments closely for most of that time, both here in the Columbia Gorge and nationally. I serve as an environmental representative on the technical advisory committees of three wind power projects in the area. I have participated in field visits to wind projects all over the West. I have a degree in biology and have read a great deal of the scientific literature pertaining to wildlife-turbine interactions. As someone who is well informed about both wind power and ecology, I have a number of concerns regarding the DEIS prepared for the Whistling Ridge Energy Project.

1. The evaluation of cumulative impacts is inadequate.

Under SEPA, EFSEC is required to consider whether multiple incremental impacts when considered together may cumulatively result in a significant adverse impact. WAC 197-11-792(2)(c)(iii). Unfortunately, the cumulative impacts analysis done for the Whistling Ridge DEIS only considered the impacts of 10 existing wind projects and three proposed wind projects. In fact, there are at least 15 major wind projects constructed or proposed in Klickitat County alone, and more than 45 major wind projects constructed or proposed along the Columbia River east of Whistling Ridge.

The pace and scale of wind turbine construction in this region has been unprecedented. Only five years ago, an EIS prepared by Klickitat County (which lies immediately to the north and east of the Whistling Ridge site) predicted the construction of four major wind projects, with a total installed capacity of 1,000 megawatts, over a 20-year period. In actuality, 10 major wind projects with a total installed capacity of more than 1,100 megawatts have already been constructed in Klickitat County, and permits are pending for another 500 megawatts. In other words, Klickitat County has seen twice as much wind development in five years as was predicted for 20 years.

Besides the many projects in Klickitat County, the BPA's interconnection queue shows approximately 35 additional projects in other nearby counties that are either permitted or awaiting permits. Other projects are proposed but not yet shown in the BPA queue. From Whistling Ridge to Walla Walla, wind developers are erecting (or proposing to erect) strings of turbines that stretch for more than 100 miles along the ridges on both sides of the Columbia River.[1]

In Klickitat County, almost every inch of ridge-top land above the Columbia from Dallesport eastward is already under lease to wind developers.[2] Additional projects are proposed but not yet shown on this map because permit applications have not been filed.

The environmental impacts analysis for Whistling Ridge must consider the regional impacts of more than 40 major projects within the Columbia Plateau ecoregion. The scale and sprawl of this wind development has significant cumulative impacts on wildlife, habitat, scenic values and other natural resources.

The notion that projects in eastern Klickitat County are "too far away…to result in cumulative impacts" is mistaken. Many birds and bats travel long distances during migration, foraging, and other components of their life cycle. Also, genetic exchanges between individuals of any given species are essential for maintaining population viability.

More important, the notion that projects are too far away to have cumulative impacts is mistaken because significant adverse impacts typically occur at the population level, rather than at the level of individual animals affected by a particular wind project. While different wind projects may affect different individuals, the cumulative effect of combined mortalities at many contiguous sites can be population-level impacts—and perhaps even local extinctions over time.

The DEIS erred in relying on a cumulative impacts analysis published in 2007 for the Mid-Atlantic Highlands. Not only is the Mid-Atlantic region completely different from the Whistling Ridge site in habitat and species composition, but the 2007 study was published before the pace of wind development began to rapidly accelerate. It is inappropriate to base any cumulative impacts analysis for Whistling Ridge on a study done under very different circumstances and in a very different place.

It is also inappropriate to dismiss the cumulative impacts of wind turbines on wildlife because of other man-made effects such as mortalities from buildings and cats. These mortalities don't necessarily affect the same species as wind turbines do: For example, cats do not kill golden eagles, and skyscrapers do not kill species that make their homes

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[1] **Current and Proposed Wind Project Interconnections to BPA Transmission Facilities**, Bonneville Power Administration, last updated May 10, 2010, *http://www.transmission.bpa.gov/PlanProj/Wind/documents/BPA_wind_map_2010.pdf*

[2] **Klickitat County Wind Projects**, Klickitat County, last updated June 7, 2010, *http://klickitatcounty.org/Planning/default.asp?fCategoryIDSelected=1258566697*

in remote rural areas. More important, these man-made impacts do not justify placing additional pressures on sensitive bird and bat populations from new man-made structures in more remote areas where wind projects may be the leading source of avian and bat fatalities. They merely illustrate the importance of minimizing any additional mortalities caused by wind projects. Two wrongs do not make a right.

The DEIS provides no evidence to substantiate the applicant's assertion that the proposed Whistling Ridge wind project will not cause mortality to birds and bats in sufficient quantities to affect population viability. The analysis does not include any reasonable estimates of current population levels of sensitive species, nor of the threshold population levels required to maintain viability.

2. The DEIS fails to address the potential expansion of the Whistling Ridge project onto Washington Department of Natural Resources public lands in Klickitat County.

The applicant has previously indicated plans to expand the project into Klickitat County, and applied for a lease from DNR to do so. These plans should be evaluated as part of this project, rather than piecemealed for later consideration.

3. The WEST report prepared for the Klickitat County Planning Department is not applicable to the proposed Whistling Ridge Energy Project, and cannot be relied upon to evaluate cumulative impacts.

The report prepared by Western EcoSystems Technology, Inc. (WEST) purports to be a cumulative impacts analysis for Klickitat County.[3] Unfortunately, this report sheds little light on the cumulative impacts of wind power development on wildlife in Klickitat County, and it is even less relevant to a project proposed for Skamania County.

As the WEST report's title suggests, the Columbia Plateau Ecoregion is located in eastern Washington and Oregon, which have completely different plant and animal communities than the western Washington site proposed for the Whistling Ridge wind project. All of the projects evaluated in the WEST report are located in arid and un-forested lands, whereas Whistling Ridge is located in a coniferous forest that receives much more precipitation and has a much different plant and animal population. Impacts of wind projects on birds and bats are extremely site-specific, and because of that the WEST study has little applicability to the Whistling Ridge proposal. It is no more applicable than studies from the Altamont Pass Wind Resources Area in California, where significant population-level impacts on birds have been documented; or from the forested

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[3] **Avian, Bat and Habitat Cumulative Impacts Associated with Wind Energy Development in the Columbia Plateau Ecoregion of Eastern Washington and Oregon**, Prepared for Klickitat County Planning Department by Gregory D. Johnson and Wallace P. Erickson, Western EcoSystems Technology, Inc., February 2010

Mountaineer wind project in Appalachia, where significant population-level impacts on bats have been documented.

The WEST report contains fatality monitoring data from 12 projects around the Columbia Plateau Ecoregion. Only *one* of those projects, Big Horn, is actually located in Klickitat County—and the results from Big Horn show much higher raptor fatality rates than anywhere else in the Pacific Northwest. In other words, the WEST report underestimates the impacts of wind projects in Klickitat County by merging the Big Horn data with results from less lethal projects elsewhere in the region.

The WEST report also looked at 24 projects in the Pacific Northwest for which pre-construction estimates of avian use are available. Here too, the results from Klickitat County show a much higher likelihood of avian impacts than elsewhere in the region. Of the 24 projects evaluated in the report, the seven projects located in Klickitat County had much higher estimated use by both raptors and by birds of all types. For example, the highest raptor use estimated anywhere in our region is at the Linden Ranch in Klickitat County. Raptor use there is estimated to be 2.5 times the average for the Columbia Plateau ecoregion.

In other words, the WEST report does *not* give an accurate picture of cumulative impacts from expanding wind power here in Klickitat County, much less any indications of cumulative impacts to be expected in Skamania County. To the contrary, the WEST report uses data from projects in other parts of Oregon and eastern Washington to underestimate how many birds—especially raptors—are likely to be killed here.

The WEST report has another fundamental flaw. To arrive at a prediction of cumulative fatalities, the report's authors averaged existing fatalities in the region and then compared those averages with estimates of regional population size based on breeding bird surveys provided by the Partners in Flight North American Landbird Conservation Plan. However, the Partners in Flight estimates include relatively large standard errors, and are not accurate enough to serve as reliable population indicators. The estimates used in the WEST report were designed for detecting long-term population trends but not for estimating population size.

As Dr. K. Shawn Smallwood, an ecologist who is one of the nation's leading experts on the interactions between wildlife and wind turbines, points out in a review of the WEST report, the estimates from Partners in Flight are "unsuitable for the use that Johnson and Erickson made of them."[4] Other researchers have pointed out this flaw but WEST continues to rely on these unsuitable estimates.

Smallwood further writes: "No studies or monitoring programs have been designed or implemented in the US to document wind energy-related population declines of any bird species. Most fatality monitoring programs have been much too brief to document

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[4] **Review of Cumulative Impacts Analysis of Wind Energy Expansion on the Columbia Plateau**, K. Shawn Smallwood, May 18, 2010.

declines, lasting one or two years. All monitoring programs have been too crude to document declines, and the majority of post-construction studies have not been designed to estimate population size of any bird species. Therefore, Johnson and Erickson's statement about wind energy impacts was misleading."

There is no peer-reviewed science in the DEIS submitted by the applicant. Instead the applicant relies on WEST, a wind industry contractor whose work has not been independently reviewed.

4. The DEIS underestimates the impacts of wind projects on long-lived raptor species.

Research on wildlife-turbine interactions in the Pacific Northwest and elsewhere has focused almost exclusively on estimating mortality rates. Although studies dealing with impacts on rare and endangered species are scarce, there is growing evidence that wind projects increase the extinction probability of long-lived species through incremental increases in mortality rates. In other words, while wind turbines may kill a relatively small number of individual birds during any given year, for rare and endangered species this increase can quickly add up to population extinction. A recently published study found that even though wind projects may cause only slight reductions in the survival of birds living in an area associated with wind turbines, those reductions can strongly impact the population viability of long-lived species—and can greatly reduce the time to extinction for those species.[5]

That is the situation we are currently seeing in Klickitat County with species such as ferruginous hawks. Wind projects have already killed at least three ferruginous hawks locally, and there are very few of these animals remaining. There have been no studies in Skamania County, Klickitat County, or anywhere else in the Pacific Northwest to determine the long-term impact of wind projects. Such studies are necessary in order to determine the cumulative impacts of continued industrial wind energy development at the scale now being proposed for Klickitat County.

As mentioned above, wind projects pose a threat to long-lived raptors that are already rare or endangered. There are ways to mitigate this problem, as pointed out in the scientific study cited above: "Unlike other non-natural causes of mortality difficult to eradicate or control, wind-farm fatalities can be lowered by powering down or removing risky turbines and/or farms, and by placing them outside areas critical for endangered birds."

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[5] **Large Scale Risk-Assessment of Wind-Farms on Population Viability of a Globally Endangered Long-Lived Raptor Species.** Martina Carrete, José A. Sánchez-Zapata, José R. Benítez, Manuel Lobón, and José A. Donázar in *Biological Conservation* 142:2954-2961, 2009.

The applicant claims there will be no population-level impacts on any species but has provided has provided insufficient evidence to support this assertion. Currently, the Whistling Ridge proposal includes no provisions for temporary or permanent shutdowns of problem turbines, nor does it place turbines at a reasonable distance from important bird areas such as Spotted Owl Special Emphasis Areas. These provisions must be included to ensure that long-lived raptors and other species of concern are not driven to extinction locally.

In response to unavoidable impacts to wildlife, the applicant proposes "mitigations" including raptor nest surveys, post-construction monitoring studies, and the formation of a Technical Advisory Committee to oversee these activities. None of these actions qualify as mitigation measures. Mitigations are measures that remedy a problem. The applicant is merely proposing to study the problem, not to remedy it.

Mitigation cannot be left to a Technical Advisory Committee that is organized and overseen by the developer. I have served on several Technical Advisory Committees, and while such committees may recommend mitigation measures they are not typically empowered to require implementation of any of these measures.

5. Pre-construction estimates of avian and bat fatalities have not proved reliable.

Although no scientists have done a thorough comparison of pre-construction and post-construction mortality estimates, there is plenty of anecdotal evidence that post-construction mortalities often greatly exceed pre-construction estimates made using the same methodology as has been employed for the Whistling Ridge wind project.

For example, the Environmental Impact Statement (EIS) prepared prior to adoption of the Energy Overlay Zone in Klickitat County grossly underestimated the level of wildlife fatalities likely to result from wind development. At all of the wind projects in Klickitat County where monitoring has been completed or is under way, reports prepared by wildlife consultants show that fatalities of raptors and bats are far in excess of what was anticipated by the EIS. Whistling Ridge is using the same consultants and methodology as Klickitat County for its pre-construction fatality estimates.

At Big Horn, the first large wind project built in Klickitat County, the developer's wildlife consultants did a full year of monitoring at 100 percent of the turbines, which makes this one of the most comprehensively monitored wind projects anywhere in the United States. The results of that monitoring study show that raptor fatalities are at least eight times higher than what the developer, PPM/Iberdrola, projected.[6]

An independent study of Big Horn's monitoring results written by Dr. Smallwood concluded that raptor fatalities are up to 16 times higher than predicted prior to

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[6] **Big Horn Wind Power Project Wildlife Fatality Monitoring Study 2006-2007.** Prepared for PPM Energy and Big Horn Wind Project Technical Advisory Committee by Northwest Wildlife Consultants, Inc., 2008.

construction.[7] Big Horn also kills twice as many bats as anticipated, according to fatality monitoring reports. Monitoring studies at other wind projects in Klickitat County are not yet completed, but the preliminary results from those projects suggest even higher fatality rates.

The above-cited independent scientific analysis based on the results from Big Horn (the first of only two projects in Klickitat County where fatality monitoring has been completed) reported a conservative estimate of 243 raptor fatalities annually in Klickitat County. That estimate of 243 raptor fatalities is for a level of development that does not exceed 1,000 megawatts. At its current rate of wind development, Klickitat County is likely to reach a level of 2,000 megawatts or more within the next year or so. For raptors in Klickitat County, these numbers are rapidly approaching population-level impacts. "There is probably no other human source of mortality that comes close to these levels," writes Dr. Smallwood.

At the second project in Klickitat County where monitoring has been completed, Goodnoe, the results are similar.[8] The final monitoring report for Goodnoe calculated fatalities of 0.34 raptors per year per turbine, or 0.17 raptors per megawatt per turbine, or 16 fatalities per year for the project. Only one project reviewed in the WEST report had a higher raptor fatality rate than the one found for Goodnoe. The Goodnoe project is killing far more raptors than predicted by pre-construction surveys.

6. The DEIS underestimates potential impacts on northern spotted owls and other avian species.

The proposed project falls within critical habitat for the northern spotted owl, a species that is not only endangered but has continued to decline since the adoption of the Washington Department of Natural Resources' Habitat Conservation Plan for the species. This species has continued to decline on federal lands, which makes the state's HCP more important than ever. There are only an estimated 500 northern spotted owl pairs remaining in all of Washington state.

Even as the state's Habitat Conservation Plan is failing miserably, the applicant is proposing to undermine that plan by allowing commercial-scale energy development within a Spotted Owl Special Emphasis Area. A commercial wind energy project is *not* appropriate for habitat that is designated as a nesting, roosting and foraging area for a federally endangered species.

In materials distributed to the public prior to the mid-June 2010 hearings, SDS Lumber writes: "After years of timber harvest, there's no suitable habitat for the bird." It is ironic that

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[7] **Avian and Bat Mortality at the Big Horn Wind Energy Project, Klickitat County, Washington.** K. Shawn Smallwood, 2008.

[8] **Goodnoe Hills Wind Project Avian Mortality Monitoring Report**, Prepared for PacifiCorp by URS Corporation, March 16, 2010.

the applicant is pointing the finger at its own destructive timber practices to justify further risk to northern spotted owls.

Regardless of whether spotted owls are currently nesting on or near this property, as they did in recent history, this area is designated as prime potential habitat for the species. The fact that Washington's Habitat Conservation Plan for spotted owls is not increasing the numbers of reproductive pairs makes it all the more important to restore this species' habitat—not to damage it even further.

The Environmental Impact Statement commissioned by Klickitat County for its Energy Overlay Zone stated (on page 2-15 of the Final EIS) that "forested areas host higher concentrations of owl and other sensitive species habitats."[9] The EIS recommended that areas with high concentrations of forested habitats be excluded from the Energy Overlay Zone because of their "higher potential for use by sensitive species and avian species likely to be impacted by wind turbines." This sensitive forested habitat is exactly what is being proposed for development at Whistling Ridge.

Spotted owls are not the only species likely to be significantly impacted by the proposal. Klickitat County's Energy Overlay EIS also found high use of forested habitats by other raptors. The SDS map for the proposed project shows ridge-top locations for turbines, and these are typically the worst possible locations from an avian perspective—i.e., likely to result in the highest number of bird collisions.

7. The DEIS fails to assess compliance with state and federal laws protecting bald eagles, golden eagles, migratory birds, and endangered species.

There are reports of bald eagles and bald eagle nests at the proposed wind site. Yet there is no evidence that the proposed project will be in compliance with the state's Bald Eagle Protection Act, RCW chapter 77.12, and regulations associated with this act.

Nor is there any evidence that the proposed project will be in compliance with the federal Bald and Golden Eagle Protection Act, 16 USC § 668-668(d). This act prohibits any person, association, partnership or corporation from taking a bald or golden eagle at any time or by any manner without a permit. A permit may be issued only if the take would be compatible with the preservation of the species.

There is no evidence in the DEIS that the proposed project will be in compliance with the federal Migratory Bird Treaty Act (MBTA), 16 USC §§ 703-712. The MBTA requires that the U.S. Fish & Wildlife Service take enforcement against "any person, association, partnership or corporation" that "by any means or in any manner" pursues, hunts, takes, captures, kills, or attempts to take, capture or kill a migratory bird or any part, nest or eggs of any migratory bird. Under the MBTA, a corporation may take or kill a migratory bird only if the U.S. Fish & Wildlife Service determines that the take or kill is compatible with migratory

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[9] **Klickitat County Energy Overlay Final Environmental Impact Statement**, September 2004.

bird treaties. This determination must include an evaluation of the bird's species abundance and distribution, as well as its migratory and breeding habits. The killing of a single migratory bird is sufficient to create criminal liability, and does not need to be intentional.

There is no evidence in the DEIS that the proposed project will be in compliance with the federal Endangered Species Act (ESA) of 1973, 16 USC §§ 1531-1544. Under the ESA, "take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Section 9 of the ESA prohibits any actions that would "take" an endangered species, as well as actions that would cause an act constituting a "take." The Ninth Circuit has held that "a habitat modification which significantly impairs the breeding and sheltering of a protected species amounts to 'harm' under the ESA.

It seems quite possible that the proposed Whistling Ridge wind project may kill a bald eagle, a migratory bird, or an endangered species. The DEIS must evaluate the likelihood of each of these possibilities, and whether Incidental Take Permits are required from the U.S. Fish & Wildlife Service. A recent court ruling in West Virginia has made it clear that such permits are required under federal law when a wind project is likely to kill any individual animals protected by the Endangered Species Act.

8. The DEIS erred in its analysis of the regional need for new sources of renewable energy.

The DEIS cites the Draft Sixth Northwest Power Plan released in September 2009 by the Northwest Power and Conservation Council. What the DEIS fails to quantify is that this 20-year energy plan for our region concluded that, although population and energy demands will continue to grow in the Pacific Northwest, we can meet more than 80 percent of expected future energy demands through conservation efforts and improved energy efficiency. Conservation efforts not only have less environmental impact than building new energy sources, they are also considerably less expensive.

Less than 20 percent of future needs must come from new sources of energy, according to the Council. And shown above, with 40 wind projects already constructed or proposed for this region, there are plenty of new sources to meet these needs. There is no demonstrated need for Whistling Ridge.

The dirty little secret of wind power in the Columbia Plateau Ecoregion is that most of the electricity being generated here by wind turbines is not needed or used in the Pacific Northwest. Instead it is sold to utilities in California. There is no *regional* need for new power sources; there is simply a *California* demand for electricity generated in Washington and Oregon.

On page 3-91 of the DEIS, the applicant claims that the Klickitat County Energy Overlay Zone Final EIS "recently evaluated the projected energy demand in Klickitat County, Washington, the county immediately adjacent to Skamania County." (In fact, this evaluation is already more than six years old). The DEIS then mentions the EIS

projection that "four wind power projects with total generating capacity of 1,000 MW" will be developed in Klickitat County by 2024.

In fact, Klickitat County has already approved more than a dozen projects, with a total generating capacity of almost 2,000 megawatts. Rather than suggesting that more energy is needed regionally, this rapid development of wind power in Klickitat County indicates that more than enough wind power is already under development to meet the region's energy needs.

Existing wind projects in this region are already producing so much surplus power that there are times when these projects must be turned off to protect the regional grid. For example, see these recent articles on the surpluses in the Columbia River corridor:
http://green.blogs.nytimes.com/2010/07/07/sudden-surplus-calls-for-quick-thinking/
http://www.oregonlive.com/business/index.ssf/2010/06/swollen_columbia_river_churns.html

9. The DEIS fails to estimate the direct and cumulative impacts of this project on the Northwest power grid.

The breaktaking pace of wind development along the Columbia River has created serious challenges for BPA and the regional energy grid. There are limits to the amount of wind power that can be integrated into the grid, and we are already at or near these limits. BPA has expressed concerns about how it can integrate more than 6,000 megawatts of wind power into the grid, yet the DEIS fails to analyze these constraints and how they will be affected by the construction of yet another wind project.

Adding more wind power capacity to the grid requires not only new transmission lines but also new storage capability, because wind is an intermittent power source. Typically wind projects operate at only about 30 percent of their total generating capacity, which means that 70 percent of the time a backup power source must be available.

The DEIS has failed to analyze the environmental impacts of the proposed backup power source for Whistling Ridge. For example, if hydropower will be the backup, the DEIS must consider the indirect impacts of this project on fish, irrigation, navigation and other drawdown impacts.

The applicant has hinted at possible plans to construct a natural-gas-fired power plant, perhaps as a backup power source for when the wind is not blowing at Whistling Ridge. The applicant should be required to disclose those plans now, so that the impacts of a natural-gas-fired power plant can be considered along with the impacts of the wind project.

Also, Williams is proposing a new gas line for the Whistling Ridge area, and the substation and transmission inter-tie lines proposed for the Whistling Ridge area could

signal the advent of additional power plants in the area. These must be evaluated along with impacts of the infrastructure currently being proposed.

A recent study in Colorado found that wind power's supposed carbon emissions benefits are not being realized, because of the requirement for conventionally-generated backup power.[10] Because all coal-fired power plants and some natural-gas-fired power plants produce greater emissions when they act as backup systems for wind power, thanks to inefficiencies associated with cycling on and off, the benefits of wind power in reducing carbon emissions are reduced.

Contrary to what the DEIS states, there is no evidence that the Whistling Ridge project will have a beneficial impact on air quality in the Columbia Gorge vicinity. No fossil-fuel-fired projects will be taken offline as a result. In fact, backup power from fossil-fuel-fired projects may be required for those times when the wind is not blowing.

10. The DEIS failed to evaluate the potential health effects of wind turbines on local residents.

There is ample evidence that low-frequency noises, shadow flicker, and nighttime lighting associated with wind turbines can be injurious to the physical and mental health of people living in the vicinity of turbines.[11] While many or even most people might not find noises, lights or flickers annoying or even noticeable, they can be severe—and in some cases life-changing—for a minority of the population. Regardless of whether these impacts affect everyone, they can affect some people, and must be evaluated in that light.

11. The DEIS failed to evaluate alternatives to the proposal.

SEPA and NEPA require consideration of alternatives. The applicant owns tens of thousands of acres of land, including other sites that would be more appropriate for wind power development than Whistling Ridge. The DEIS must evaluate potential alternatives, including alternative sites as well as alternative turbine layout configurations.

12. The DEIS overwhelms the public with quantity but not quality.

I am grateful for the extended comment period. Nevertheless, it is not reasonable to expect members of the general public to be able to digest and respond intelligently within just a few weeks to a record that is thousands of pages long and years in the making.

Despite this huge volume of material, there is very little scientific literature cited in the DEIS, and even less that is peer-reviewed science. The applicant has cherry-picked a few

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[10] **How Less Became More...Wind, Power and Unintended Consequences in the Colorado Energy Market**, Prepared by Bentek Energy LLC for the Independent Petroleum Association of Mountain States, April 16, 2010.

[11] "Summary of Recent Research on Adverse Health Effects of Wind Turbines," Compiled by Keith Stelling, October 20, 2009.

statistics and extrapolations from industry-sponsored reports and ignored the independent science and actual mortality studies that suggest major cumulative impacts are likely for wildlife given the pace and scope of wind power development in this region.

Thank you for the opportunity to comment on this project.

Sincerely,

Dawn Stover
[redacted]

Michelle, Kayce (UTC)

From: Posner, Stephen (UTC)
Sent: Tuesday, July 27, 2010 1:07 PM
To: Michelle, Kayce (UTC)
Subject: FW: Whistling Ridge DEIS comments from Dawn Stover
Attachments: BPAEFSEC2.doc; ATT2543509.htm

Tammy,

Please process.

Thanks.

Stephen Posner
Energy Facility Site Evaluation Council
P.O. Box 43172
Olympia, WA 98504-3172
(360) 956-2063
stephen.posner@utc.wa.gov

visit the EFSEC website at: www.efsec.wa.gov

From: Dawn Stover [mailto[redacted]
Sent: Tuesday, July 27, 2010 11:19 AM
To: Posner, Stephen (UTC)
Subject: Whistling Ridge DEIS comments from Dawn Stover

Hi Andrew and Stephen,

I am submitting my expanded comments by email. I tried using the BPA online system earlier but it didn't work for me.

Thanks for your assistance.
Dawn

COMMENT LETTER 162

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WR - DEIS
Public Comment #360

Association of Washington Business

Washington State's Chamber of Commerce

July 26, 2010

Stephen Posner ✓
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Andrew M. Montaño
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Re: Association of Washington Business comments on Draft Environmental Impact Statement for Whistling Ridge Wind Energy Project (EFSEC Application No. 2009-01)

Dear Mr. Posner and Mr. Montaño:

On behalf of the Association of Washington Business (AWB), thank you for the opportunity to provide comments on the Whistling Ridge Draft Environmental Impact Statement (DEIS).

Formed in 1904, AWB is Washington's oldest and largest statewide business association, and includes more than 7,000 members representing over 650,000 employees. AWB serves as both the state's chamber of commerce and manufacturing and technology association. 90 percent of AWB members employ fewer than 100 people and more than half of AWB's members employ fewer than 10.

We write today in support of the May, 2010 DEIS and offer the following general and specific comments in support thereof.

I. GENERAL COMMENTS

Economic development and job creation

As AWB has noted previously, approval of the DEIS and final approval of the application is extremely important for current and future economic development in Skamania County, southwestern Washington, and for the state as a whole. This is particularly important during this historic economic recession and during the severe budget shortfalls for the state and local governments.

Paragraph 3.13 of the DEIS (Socioeconomics)(summarized in Table 1-1 of Paragraph 1.0) concludes, generally, that "[s]ocioeconomic impacts are expected to be beneficial in the form of additional jobs, increased sales, and increased tax revenues."

Specifically, during construction of the project, the DEIS concludes that about 330 full and part-time jobs would be created. Approximately 25-35 percent of the construction workforce would be residents of the area and 65-75 percent of the workforce would be hired from outside of the three-county area. Project construction would also result in 71 indirect and induced jobs.

Moreover, indirect value added from the project is approximately $3.9 million. According to Table 1-1, "[f]iscal impacts are expected to be positive, with a total of $150 million in construction expenditures, of which approximately $13.2 million would be spent in the local area." In addition, the DEIS concludes most sales tax revenue would go to Skamania County.

With respect to ongoing operation of the site, the DEIS concludes that "[e]conomic impacts would be positive due to increased tax revenues, employment and local expenditures. Sales, use and other indirect business taxes to state and local governments are estimated at approximately $50,000 per year." The estimated value of the project is $87.5 million, which would represent an increase of 6.5 percent in assessed value to the county. The corresponding increase in property tax revenue to the county would be $731,500. On an ongoing basis, the project will employ 8-9 employees, likely hired from the local area.

Equally important to the positive economic attributes of the project are the negative consequences for the economy of southwestern Washington if the DEIS and application is ultimately not approved.

Visual resources/site location

The proposed Whistling Ridge project is also important because it would set a precedent for siting wind projects on designated forest land in this state. This is important because many potential wind generating sites are located on Washington's forest lands. As the

Whistling Ridge DEIS shows, wind energy and forest management are highly compatible. Wind energy becomes an additional renewable resource to be managed on forest lands. Washington's ailing forest industry needs to diversify whenever and wherever possible. The potential for wind farm siting on forest lands creates additional revenue diversification opportunities for large and small forest land owners alike and will help keep forest lands from being developed or used in other manners incompatible with forest management. With each recession, timber producers are at the mercy of the markets. This most recent downturn has been particularly hard on the industry, its workers and suppliers, and communities like White Salmon, Bingen, Stevenson and Carson.

The proposed forest ridgeline site is low value for timber production. The proposed site provides great north/south topography for wind. The proposed site is also surrounded by mountains which significantly limits any visual impacts. Furthermore, the nearest existing residential structure to the proposed project is approximately 2500 feet, which is a greater setback distance than those structures located near the recently-approved Kittitas Valley Wind Power Project.

Regional need for new sources of renewable energy

According to Paragraph 1.2.3.1 of the DEIS Summary, based on the findings of the Northwest Power and Conservation Council's (NPCC) Fifth Power Plan (May 2005) and draft Sixth Power Plan (September 2009), the regional population in Idaho, Montana, Oregon and Washington is expected to grow from 12.7 million in 2007 to 16.3 million by 2030. This 3.6 million population increase will increase the demand for electricity. The draft Six Plan concludes that "[t]he Pacific Northwest consumed 19,000 a/MW or 166 million MW-hours of electricity in 2007. That demand is expected to grow to 25,000 a/MW by 2030. Between 2007 and 2030, demand is expected to increase by a total of 6,500 a/MW, growing on average by 270 a/MW, or 1.2 percent, per year.

In additional to the normal, free-market increase in demand accompanied by such population growth, states like Oregon, California and Washington have adopted Renewable Portfolio Standards (RPS), which mandate that qualifying public and private utilities obtain a certain percentage of defined "renewable" energy, not including hydropower, by a date certain. In Washington, Initiative 937 requires qualifying utilities to obtain 15% defined "renewable" energy by 2020.

The Summary concludes that "[t]he RPS, coupled with load growth in Washington's urban areas, has prompted investor-owned and public power utilities to seek new

sources, most often developed by independent power producers, to meet their resource goals."

It is for this reason that adoption of the DEIS and, ultimately, approval of the applicant's project is so important. In the coming decades, Washington will need new sources of electricity to meet market demand, as well as the artificial demand created by the "renewable" standards imposed by I-937. Furthermore, if utilities aren't able to meet the RPS established by I-937, a $50/MW hour shortfall penalty will be imposed on the utility and passed on to the ratepayers – Washington's families and businesses.

II. SPECIFIC COMMENTS

Visual resources

AWB strongly supports the Paragraph 4.11 (pg. 4-9) DEIS interpretation of the Columbia River Gorge National Scenic Area Act (CRGNSA) and the corresponding "savings clause" found at 16 USC § 544O(a)(10). This project application is not, and should not be subject to the requirements of the CRGNSA.

The DEIS appropriately acknowledges the proposed site is located outside of, but immediately adjacent to, the northern boundary of the CRGNSA. The DEIS continues that "although the proposed project thus is in close proximity to the CRGNSA, the CRGNSA Act expressly states that:

> *Nothing in [this Act] shall . . . establish protective perimeters or buffer zones around the scenic area or each special management area. The fact that activities or uses inconsistent with the management directives for the scenic area or special management areas can be seen or heard from these areas shall not, of itself, preclude such activities or uses up to the boundaries of the scenic area or special management areas."*

The DEIS concludes: "[a]ccordingly, because the proposed project is located outside of the CRGNSA, the provisions of the CRGNSA Act do not apply to the proposed project." (Emphasis added)

We could not more strongly agree.

This accurate interpretation of the CRGNSA "savings clause" is also found in Paragraph 3.9.2.1 (Regional Landscape Setting) which concludes "[t]he project area is completely outside the Scenic Are, and therefore, is not subject to the Columbia River Gorge Scenic Area Management Plan or related regulatory requirements." (Emphasis added)

This reasoning is continued at page 3-194 of the DEIS which concludes ". . . [t]his federal policy and Congressional mandate discourage projecting National Scenic Act policies, regulations and directives beyond the boundary of the Scenic Area."

Federal regulation and zoning of development in an area that is largely private land, and the economic survival of existing counties and communities, were major concerns when the CRGNSA Act was debated in Congress. Several major compromises to the Act were adopted by amendment to address these issues before passage in its final form. These compromises included the purchase or trade of private lands that were highly scenic and would be heavily restricted in the SMA zone; less restriction on private lands in the GMA zone; and urban areas that were completely exempt from restriction and a boundary that was to be the absolute boundary with no buffer or setback outside of the CRGNSA.

This was the reasoning and intent behind the "savings clause" and the proposed project is exactly what was contemplated when it was adopted. The "savings clause" established a boundary – a boundary in every sense of the word – a place where regulation exists, and a line drawn where it ends. Beyond this boundary, it was intended that private landowners and counties would be allowed to have economic development activity without scenic restriction. Without the "savings clause", Congress would not have enacted the CRGNSA and President Reagan would not have signed the bill in to law.

<u>Visual resources methodologies</u>

In drawing the conclusions reached in the DEIS, three federal methodologies were used to evaluate visual impact assessment of the proposed project: (1) the Federal Highway Administration methodology (FHWA); (2) the U.S. Forest Service methodology (USFS); and (3) the Bureau of Land Management methodology (BLM). In addition, a "hybrid" methodology (FHWA and USFS), used in the Kittitas Valley Wind Power Project (KVWPP), was also used, totaling four visual impact assessment methodologies.

Visual impacts are purely subjective in nature and vary greatly from person to person. AWB believes the four methodologies used in the DEIS are sound, comprehensive and sufficiently objective to measure potential visual impacts in reaching the DEIS conclusions – particularly when adding the fourth KVWPP standard, which is the most rigorous and comprehensive standard. Opponents of the KVWPP challenged the visual assessment before the Washington Supreme Court, with a unanimous court rejecting that challenge.

For purposes of certainty, predictability and fairness, methodologies among various projects should be consistent. Proximity to (not inclusion in) a National Scenic Area should not impose a different standard. To do so would not only establish a buffer on the Scenic Area, but also would set a dangerous precedent of inconsistent visual standards and be very problematic for wind power development throughout the state. In addition, this wouldn't just set a bad precedent for future wind projects – a new, higher standard for proximity to a scenic area could exclude other, non-wind, development such as electrical transmission, residential, commercial or industrial development that is otherwise compliant and consistent with applicable land use laws and regulations, and essential to Washington's economic viability and ongoing prosperity.

Notwithstanding this fact, the methodologies used to evaluate this project have been even more rigorous than KVWPP, Wildhorse, and other previously-sited wind projects.

Joint EFSEC/BPA preparation

As the DEIS introduction at paragraph 1.1 clearly states, both the Energy Facility Site Evaluation Council (EFSEC) and the Bonneville Power Administration (BPA) have jointly prepared the DEIS to be consistent with the requirements of both the Washington State Environmental Policy Act (SEPA) and the National Environmental Policy Act (NEPA). Although the document is consistent with SEPA requirements, its form has been modified, adjusted and expanded where appropriate to ensure compliance with NEPA as well. Accordingly, the DEIS is now a federal NEPA document and not just an EIS generated by the project applicant.

Scientific review

With the completion of this DEIS, more biological review has been done than on any other previously sited wind project anywhere in the Northwest, let alone Washington state. To our knowledge, no other wind energy project has completed the multiple years of biological surveys, including three years of bat survey work.

In addition, the DEIS has been prepared in direct collaboration with a sufficiently wide range of state and federal wildlife agencies and tribal governments (8), including: the Washington Dept. of Archeology and Historic Preservation, Washington Department of Fish and Wildlife, Washington State Department of Natural Resources, Washington State Department of Transportation, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, and the Yakama Nation.

The pre-development biological survey work was done in collaboration with the Washington and U.S. Fish and Wildlife Departments. In its "Section 7" consultation letter dated July 19, 2010, the USFWS confirmed that the project will no impact Northern Spotted Owls – a determination that should be considered conclusive on this issue.

I.V. U.S. DEPARTMENT OF THE INTERIOR COMMENTS

AWB recently received a copy of the U.S. Department of the Interior (Department) DEIS comment letter dated July 19, 2010. The Department raises concerns about visibility of the proposed project from the nationally designated Lewis and Clark National Historic Trail (NHT) and suggests elimination of several visible turbines from the site. AWB disagrees with this assertion.

AWB is extremely concerned with the Department's comments on this application. The National Trail System Act, 16 USC §§ 1241-1251 (NTSA) does not, by mandate or implication, authorize the Department to regulate or restrict private lands or to even negatively comment on or oppose private projects proposed on private lands. In fact, the reference to this Act as authority for the comment letter is an abuse of federal authority and exceeds the policy directives of the NTSA. The Department's comments are particularly egregious here, where the comment would necessitate the conclusion that any land development or activity visible from any trail designated throughout the Western United States under the NTSA should be prohibited. Many thousands of miles of trails are designated throughout the Western United States under the NTSA. Here, the "trail" at issue is coextensive with U.S. Interstate 84 and Washington State Highway 14. These are not pristine "trail" segments – they are major, busy transportation corridors.

It should be abundantly clear to the Department that man-made structures and activities are visible and will be seen along these highways where the most visible "impacts" on travelers are the many automobiles, semi-trucks, trains, transmission lines, and dams, as well as residences, commercial buildings and industrial facilities.

Finally, consistent with the concerns raised above, elimination of visible turbines from view/proximity of the NHT would similarly be a direct violation of the CRGNSA "savings clause." The National Trails System does not have regulatory authority to affect such an outcome. Again, this would set a bad precedent and have negative implications for other non-wind related projects such as electrical transmissions systems, dams, and residential, commercial and industrial development.

Thank you again for the opportunity to provide comments on this important matter.

Sincerely,

Christian M. McCabe, Esq.
Government Affairs Director
Association of Washington Business

Cc: The Honorable Christine Gregoire
Keith Phillips

From: Chris McCabe [redacted]
Sent: Tuesday, July 27, 2010 1:37 PM
To: stephen.posner@commerce.wa.gov; s.posner@utc.wa.gov; Montano,Andrew M - KEC-4
Cc: awright@utc.wa.gov; efsec@commerce.wa.gov; Phillips, Keith (GOV); Don Brunell; Gary Chandler
Subject: AWB Comments to Whistling Ridge Draft Environmental Impact Statement

Attachments: AWB comments to Whistling Ridge Draft EIS 7-26-10.pdf

Dear Mr. Posner and Mr. Montano:

Please find attached an electronic copy of the Association of Washington Business' comment letter regarding the Whistling Ridge Energy Project (EFSEC Application No. 2009-01) Draft Environmental Impact Statement (DEIS). Originals follow by way of regular mail.

Thank you again for the opportunity to comment on this important application. Please contact me at the numbers below with any questions.

Sincerely,

Christian McCabe

_____

[redacted]

*** If you are not the intended recipient of this message or have received this communication in error, please notify the sender immediately and promptly delete the message. Thank you.***

July 26, 2010

Stephen Posner
Compliance Manager
State of Washington
Energy Facility Site Evaluation Council
905 Plum Street SE, 3rd Floor
Olympia, WA 98504-3172

Andrew M. Montaño
Environmental Project Manager
Bonneville Power Administration
Public Affairs Office – DKE-7
P.O. Box 14428
Portland, OR 97293-4428

Re: Association of Washington Business comments on Draft Environmental Impact Statement for Whistling Ridge Wind Energy Project (EFSEC Application No. 2009-01)

Dear Mr. Posner and Mr. Montaño:

On behalf of the Association of Washington Business (AWB), thank you for the opportunity to provide comments on the Whistling Ridge Draft Environmental Impact Statement (DEIS).

Formed in 1904, AWB is Washington's oldest and largest statewide business association, and includes more than 7,000 members representing over 650,000 employees. AWB serves as both the state's chamber of commerce and manufacturing and technology association. 90 percent of AWB members employ fewer than 100 people and more than half of AWB's members employ fewer than 10.

We write today in support of the May, 2010 DEIS and offer the following general and specific comments in support thereof.

I. GENERAL COMMENTS

Economic development and job creation

As AWB has noted previously, approval of the DEIS and final approval of the application is extremely important for current and future economic development in Skamania County, southwestern Washington, and for the state as a whole. This is particularly important during this historic economic recession and during the severe budget shortfalls for the state and local governments.

Paragraph 3.13 of the DEIS (Socioeconomics)(summarized in Table 1-1 of Paragraph 1.0) concludes, generally, that "[s]ocioeconomic impacts are expected to be beneficial in the form of additional jobs, increased sales, and increased tax revenues."

Specifically, during construction of the project, the DEIS concludes that about 330 full and part-time jobs would be created. Approximately 25-35 percent of the construction workforce would be residents of the area and 65-75 percent of the workforce would be hired from outside of the three-county area. Project construction would also result in 71 indirect and induced jobs.

Moreover, indirect value added from the project is approximately $3.9 million. According to Table 1-1, "[f]iscal impacts are expected to be positive, with a total of $150 million in construction expenditures, of which approximately $13.2 million would be spent in the local area." In addition, the DEIS concludes most sales tax revenue would go to Skamania County.

With respect to ongoing operation of the site, the DEIS concludes that "[e]conomic impacts would be positive due to increased tax revenues, employment and local expenditures. Sales, use and other indirect business taxes to state and local governments are estimated at approximately $50,000 per year." The estimated value of the project is $87.5 million, which would represent an increase of 6.5 percent in assessed value to the county. The corresponding increase in property tax revenue to the county would be $731,500. On an ongoing basis, the project will employ 8-9 employees, likely hired from the local area.

Equally important to the positive economic attributes of the project are the negative consequences for the economy of southwestern Washington if the DEIS and application is ultimately not approved.

Visual resources/site location

The proposed Whistling Ridge project is also important because it would set a precedent for siting wind projects on designated forest land in this state. This is important because many potential wind generating sites are located on Washington's forest lands. As the

Whistling Ridge DEIS shows, wind energy and forest management are highly compatible. Wind energy becomes an additional renewable resource to be managed on forest lands. Washington's ailing forest industry needs to diversify whenever and wherever possible. The potential for wind farm siting on forest lands creates additional revenue diversification opportunities for large and small forest land owners alike and will help keep forest lands from being developed or used in other manners incompatible with forest management. With each recession, timber producers are at the mercy of the markets. This most recent downturn has been particularly hard on the industry, its workers and suppliers, and communities like White Salmon, Bingen, Stevenson and Carson.

The proposed forest ridgeline site is low value for timber production. The proposed site provides great north/south topography for wind. The proposed site is also surrounded by mountains which significantly limits any visual impacts. Furthermore, the nearest existing residential structure to the proposed project is approximately 2500 feet, which is a greater setback distance than those structures located near the recently-approved Kittitas Valley Wind Power Project.

Regional need for new sources of renewable energy

According to Paragraph 1.2.3.1 of the DEIS Summary, based on the findings of the Northwest Power and Conservation Council's (NPCC) Fifth Power Plan (May 2005) and draft Sixth Power Plan (September 2009), the regional population in Idaho, Montana, Oregon and Washington is expected to grow from 12.7 million in 2007 to 16.3 million by 2030. This 3.6 million population increase will increase the demand for electricity. The draft Six Plan concludes that "[t]he Pacific Northwest consumed 19,000 a/MW or 166 million MW-hours of electricity in 2007. That demand is expected to grow to 25,000 a/MW by 2030. Between 2007 and 2030, demand is expected to increase by a total of 6,500 a/MW, growing on average by 270 a/MW, or 1.2 percent, per year.

In additional to the normal, free-market increase in demand accompanied by such population growth, states like Oregon, California and Washington have adopted Renewable Portfolio Standards (RPS), which mandate that qualifying public and private utilities obtain a certain percentage of defined "renewable" energy, not including hydropower, by a date certain. In Washington, Initiative 937 requires qualifying utilities to obtain 15% defined "renewable" energy by 2020.

The Summary concludes that "[t]he RPS, coupled with load growth in Washington's urban areas, has prompted investor-owned and public power utilities to seek new

sources, most often developed by independent power producers, to meet their resource goals."

It is for this reason that adoption of the DEIS and, ultimately, approval of the applicant's project is so important. In the coming decades, Washington will need new sources of electricity to meet market demand, as well as the artificial demand created by the "renewable" standards imposed by I-937. Furthermore, if utilities aren't able to meet the RPS established by I-937, a $50/MW hour shortfall penalty will be imposed on the utility and passed on to the ratepayers – Washington's families and businesses.

II. SPECIFIC COMMENTS

Visual resources

AWB strongly supports the Paragraph 4.11 (pg. 4-9) DEIS interpretation of the Columbia River Gorge National Scenic Area Act (CRGNSA) and the corresponding "savings clause" found at 16 USC § 544O(a)(10). This project application is not, and should not be subject to the requirements of the CRGNSA.

The DEIS appropriately acknowledges the proposed site is located outside of, but immediately adjacent to, the northern boundary of the CRGNSA. The DEIS continues that "although the proposed project thus is in close proximity to the CRGNSA, the CRGNSA Act expressly states that:

> *Nothing in [this Act] shall . . . establish protective perimeters or buffer zones around the scenic area or each special management area. The fact that activities or uses inconsistent with the management directives for the scenic area or special management areas can be seen or heard from these areas shall not, of itself, preclude such activities or uses up to the boundaries of the scenic area or special management areas.*"

The DEIS concludes: "[a]ccordingly, because the proposed project is located outside of the CRGNSA, the provisions of the CRGNSA Act do not apply to the proposed project.'' (Emphasis added)

We could not more strongly agree.

This accurate interpretation of the CRGNSA "savings clause" is also found in Paragraph 3.9.2.1 (Regional Landscape Setting) which concludes "[t]he project area is completely outside the Scenic Are, and therefore, is not subject to the Columbia River Gorge Scenic Area Management Plan or related regulatory requirements." (Emphasis added)

This reasoning is continued at page 3-194 of the DEIS which concludes ". . . [t]his federal policy and Congressional mandate discourage projecting National Scenic Act policies, regulations and directives beyond the boundary of the Scenic Area."

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I.V. U.S. DEPARTMENT OF THE INTERIOR COMMENTS

AWB recently received a copy of the U.S. Department of the Interior (Department) DEIS comment letter dated July 19, 2010. The Department raises concerns about visibility of the proposed project from the nationally designated Lewis and Clark National Historic Trail (NHT) and suggests elimination of several visible turbines from the site. AWB disagrees with this assertion.

AWB is extremely concerned with the Department's comments on this application. The National Trail System Act, 16 USC §§ 1241-1251 (NTSA) does not, by mandate or implication, authorize the Department to regulate or restrict private lands or to even negatively comment on or oppose private projects proposed on private lands. In fact, the reference to this Act as authority for the comment letter is an abuse of federal authority and exceeds the policy directives of the NTSA. The Department's comments are particularly egregious here, where the comment would necessitate the conclusion that any land development or activity visible from any trail designated throughout the Western United States under the NTSA should be prohibited. Many thousands of miles of trails are designated throughout the Western United States under the NTSA. Here, the "trail" at issue is coextensive with U.S. Interstate 84 and Washington State Highway 14. These are not pristine "trail" segments – they are major, busy transportation corridors.

It should be abundantly clear to the Department that man-made structures and activities are visible and will be seen along these highways where the most visible "impacts" on travelers are the many automobiles, semi-trucks, trains, transmission lines, and dams, as well as residences, commercial buildings and industrial facilities.

Finally, consistent with the concerns raised above, elimination of visible turbines from view/proximity of the NHT would similarly be a direct violation of the CRGNSA "savings clause." The National Trails System does not have regulatory authority to affect such an outcome. Again, this would set a bad precedent and have negative implications for other non-wind related projects such as electrical transmissions systems, dams, and residential, commercial and industrial development.

Thank you again for the opportunity to provide comments on this important matter.

Sincerely,

Christian M. McCabe, Esq.
Government Affairs Director
Association of Washington Business

Cc: The Honorable Christine Gregoire
Keith Phillips

COMMENT LETTER 163

WR - DEIS
Public Comment #361

Michelle, Kayce (UTC)

From: Teresa Kurtzhall [redacted]
Sent: Thursday, July 29, 2010 9:51 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area.

Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Teresa Kurtzhall
[redacted]

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
620 SW Main Street, Suite 201
Portland, Oregon 97205-3026

9043.1
IN REPLY REFER TO:
ER10/492

Electronically Filed

July 19, 2010

Andrew M. Montaño
Environmental Project Manager
Bonneville Power Administration – KEC-4
P.O. Box 3621
Portland, Oregon 97208

Dear Mr. Montaño:

The U.S. Department of the Interior (Department) has reviewed the Draft Environmental Impact Statement (DEIS) for the Bonneville Power Administration's Whistling Ridge Energy Project, Skamania County, Washington. The Department offers the following comments for use in developing the Final Environmental Impact Statement for the project.

Lewis and Clark National Historic Trail

The proposed Whistling Ridge Energy project is located within five miles of the Lewis and Clark National Historic Trail (NHT), a congressionally-designated NHT, which follows the Columbia River and is within the area analyzed in the DEIS for potential visual impacts. In addition, US Interstate 84 and Washington Route 14 are the state-designated Lewis and Clark auto tour routes in the project area. Many visitors experience Lewis and Clark NHT by traveling the auto tour routes and stopping at interpretive and recreational sites along the way. The Department considers the viewshed along the river and auto tour routes to be a critical part of the trail visitor experience.

The Lewis and Clark NHT was established by Congress in an amendment to the National Trails System Act in 1978. 16 U.S.C. § 1244(a). As administrator of the trail, the National Park Service (NPS) is charged under this Act with the identification and protection of the historic route, remnants, and artifacts of the trail for public use and enjoyment.

Based on the analysis of visual impacts in the DEIS, it appears that a varying number of turbines will be visible from the trail's historic river and auto tour routes from near

Koberg Beach State Park to Lindsey Creek State Park. This approximately 15-mile stretch of the Columbia River Gorge has numerous recreational opportunities and scenic views that add significantly to enjoyment of the historic trail. Of the five viewpoints along US Interstate 84 analyzed in the DEIS, Viewpoint 14 at Viento State Park, is rated in Table 3.9-2 as having an anticipated moderate to high level of visual impact. However, on page 3-193 of the DEIS, the potential visual impact for this viewpoint is stated as only moderate. Furthermore, it appears that the turbines were inadvertently omitted in the photomontage in Figure 3.9-11. While difficult to discern the impact at this location without clarification on the accuracy of the visual simulation, we believe that the impact should be rated as high given the placement of turbines on the skyline within four miles of a park located along the auto tour route.

Turbine string A1-A7 would be highly visible from numerous locations along the trail due to its placement on a ridgeline close to the Columbia River Gorge. The NPS recommends removing or relocating these seven turbines, if feasible. This would significantly reduce the impact to visual resources along the historic trail. The visual resources in this region—Columbia River Gorge National Scenic Area and Lewis and Clark NHT—are important resources that should be protected.

Please add the following people to the federal agency distribution list for this project:

Dan Wiley
Chief of Resources Stewardship
Lewis and Clark National Historic Trail
601 Riverfront Drive
Omaha, NE 68102
(402) 661-1830
Dan_Wiley@nps.gov

Lee Kreutzer
National Trails System
National Park Service
324 S. State, Suite 200
Salt Lake City, UT 84111
(801) 741-1012 ext. 118
Lee_Kreutzer@nps.gov

SPECIFIC COMMENTS

Water Resources Section 3.3

Pg. 3-26: Section 3.3.1.3 lacks sufficient information on the existing groundwater environment to support the finding of little or no impact. Suggest the section more fully address the depth to groundwater, flow direction, and transmissivity (permeability) of the aquifer as it relates to possible affects on the area domestic and agricultural ground-water resources (also see section 3.3.1.5). Helsel et.al. (2002) is a good reference for this type of analysis.

Pg. 3-29: Because section 3.3.3 addresses mitigation procedures for the isolation of groundwater from chemical spills, we assume that chemicals will be present on site during both construction and operation. Suggest the document include a discussion of potential chemical spills, and aquifer transmissivity (permeability), as it relates to the potential movement of contaminants toward nearby domestic or agricultural water wells.

Reference

Helsel, D.R. and Hirsch, R.M., 2002, Statistical methods in water resources: U.S. Geological Survey—Techniques of Water-Resources Investigations Book 4, Chapter A3, 510 p. Available on the internet at: http://pubs.usgs.gov/twri/twri4a3/

Thank you for the opportunity to review and comment on this DEIS. If you have any questions concerning the NPS comments, please contact Dan Wiley at (402) 661-1830 or at Dan_Wiley@nps.gov, or Lee Kreutzer at (801) 741-1013 (x118) or at Lee_Kreutzer@nps.gov. If you have any questions concerning the USGS comments, please contact Gary LeCain, USGS Coordinator for Environmental Document Reviews, at (303) 236-5050 (x229) or at gdlecain@usgs.gov. If you have any other questions, please contact me at (503) 326-2489.

Sincerely,

Preston A. Sleeger
Regional Environmental Officer

RESOLUTION 2010-51

(A Resolution Demanding Retraction of the Department of Interior Comments on the Draft Environmental Impact Statement for the Whistling Ridge Wind Energy Project and explanation of its Actions in Commenting without Authority or Jurisdiction against the Secretary's and Administration Policy)

WHEREAS, Whistling Ridge Energy Project filed an Application for Site Certification to the Washington Energy Facility Site Evaluation Council ("EFSEC") on March 10, 2009 for the Whistling Ridge Energy Project; and

WHEREAS, EFSEC is lead agency pursuant to the State Environmental Policy Act, and Bonneville Power Administration ("BPA") is federal lead agency pursuant to the National Environmental Policy Act; and

WHEREAS, EFSEC and BPA have independently issued a joint Draft Environmental Impact Statement for this Project and are seeking public comment on the DEIS; and

WHEREAS, the entire project is located outside of the Columbia River Gorge National Scenic Area ("Scenic Area") on privately owned lands in Skamania County; and

WHEREAS, Federal Government regulation of private lands as well as the economic survival of Skamania, other local counties and communities were major concerns when the Columbia River Gorge National Scenic Area ("Scenic Area Act") was debated in Congress; which resulted in several major compromises to address these concerns before passage of the Scenic Area Act in its final form, without which, Congress would not have enacted the Scenic Area Act and President Reagan would not have signed it into law. These compromises included the purchase or trade of private lands that were regulated for the protection of scenery in the Special Management Areas, the designation of Urban Areas that are completely exempt from restrictions and the designation of an external boundary that by Congressional direction is the absolute boundary with no buffers or setbacks outside of the Scenic Area. Congressional intent is found in the "Savings Provision" at 16 USC § 544o(a)(10) which states:

> *Nothing in [this Act] shall . . . establish protective perimeters or buffer zones around the scenic area or each special management area. The fact that activities or uses inconsistent with the management directives for the scenic area or special management areas can be seen or heard from these areas shall not, of itself, preclude such activities or uses up to the boundaries of the scenic area or special management areas."*; and

WHEREAS, The National Trail System Act, 16 USC §§ 1241 – 1251 authorizes Congress to designate National Scenic and Historic Trails but does not, by mandate or implication, authorize Interior to regulate or restrict private lands or to even negatively comment on or oppose private projects proposed on private lands nearby, or visible from, designated trail sections; and

WHEREAS, Skamania County recently received a copy of the U.S. Department of the Interior ("Interior") DEIS comment letter dated July 19, 2010, wherein Interior raises concerns about visibility of the proposed project from the Scenic Area and the nationally designated Lewis and Clark National Historic Trail and suggests elimination of Whistling Ridge wind turbines that are visible from both the Scenic Area and the Lewis and Clark National Historic Trail; and

WHEREAS, many thousands of miles of trails are designated throughout the Western United States under the National Trail System Act. With the exception of federal lands, and lands acquired by the Federal Government for preservation of trails, the Federal Government has no authority to regulate or restrict the use of private lands near trails designated under the National Trail System Act, for any reason, especially for purported visual effects on trail segments. Moreover, as described in the Interior letter, the "trail" at issue here is coextensive with US Interstate 84 and Washington State Highway 14 which are not pristine "trail" segments—they are major, busy multi-modal transportation corridors, including the only sea level train route (on both sides of the Columbia River) through the Cascades, with over 80 commercial trains transiting per day.

NOW, THEREFORE, BE IT RESOLVED THAT THE Board of Commissioners being concerned and alarmed with Interior's comments and apparent attempt at inappropriate Federal intervention on the consideration of the Whistling Ridge application, find as follows:

The Board finds: Interior's reference to the National Trail Systems Act and the Scenic Area as authority for the comment letter is an abuse of federal authority that exceeds the legal and policy directives and Congressional intent of both the National Trail Systems Act and the Scenic Area Act. Interior's comments are particularly egregious where they recommend that renewable wind energy construction (proposed on private lands outside of the Scenic Area and miles away from any trail segments in Skamania County) that are visible from the National Trail Systems Act and the Scenic Area should be eliminated from the Project, or that the proponent must justify "feasibility" for the locations visible from I-84.

The Board finds: Many man-made structures and activities are visible and will be visible along these "trails" that follow Interstate highways, where the most visible of "impacts" on travelers are the many semi trucks, trains, transmission lines, dams, industrial facilities, mines, and coal, gas and nuclear power generating facilities, as well as many cities, homes, commercial buildings, advertising signs and billboards, that they pass by. It is a gross abuse of federal authority to negatively comment on, and seek to obstruct a renewable energy project on private lands merely because a small portion is remotely visible from an Interstate highway.

The Board finds: Consistent with our concerns raised above regarding National Trail Systems Act authority, that Interior's recommendation of restricting private land development in view of the Scenic Area is in direct violation of the critically important Scenic Area Act compromises and Savings Provisions the intent of which was to allow local counties economic development opportunity for their continued survival.

The Board finds: Interior's comments and recommendations have serious policy implications not only for renewable energy development but also for other non-wind energy related projects that are visible from the Scenic Area and National Historic Trails, such as electrical transmissions systems, dams, rail transportation, interstate commerce and traffic, as well as residential, commercial and industrial development in Skamania and other Counties near the Scenic Area and/or Counties located near similarly designated trails under the National Trails System Act.

The Board finds: Interiors comments contradict both the Secretary's publicly stated policy as it pertains to renewable energy as well as contradicting the clear energy policy direction of the current Administration.

The Board finds: Finally, in addition to the comment concerning the Scenic Area and the Interstate Highway corridor, Interior provided specific comments related to purported groundwater issues—issues raised by local citizen neighbor opponents at the NEPA/SEPA comment hearing. Skamania County has regulatory responsibility for groundwater issues, and will work with EFSEC to address the citizen comment. This is ***not*** a federal issue. Interior has no authority to insert itself into this uniquely local issue, and its decision to do so demonstrates its lack of regard for Skamania County's authority: strongly suggesting inappropriate collaboration with Whistling Ridge project opponents.

NOW, THEREFORE, BE IT FINALLY RESOLVED THAT THE Board of Commissioners reacting to this clear abuse of authority without jurisdiction, hereby demand, in the strongest possible terms, that Interior's comments be immediately retracted and removed from the public record on this matter, and further respectfully request that the Secretary and the Administration clarify how Interior has acted within its authority, consistent with the stated policy direction of the Secretary and the Administration, and what this letter means for the implementation of the Administration's declared land management and energy policies.

DATED this 3rd day of August 2010.

ATTEST:

BOARD OF COMMISSIONERS SKAMANIA COUNTY WASHINGTON CLERK OF THE BOARD

Clerk of the Board

SKAMANIA COUNTY
BOARD OF COMMISSIONERS

Chairman

Commissioner

Commissioner

Approved as to form only:

Skamania County Prosecuting Attorney

Aye 3
Nay ____
Abstain ____
Absent ____

Michelle, Kayce (UTC)

From: Debbie Slack [redacted]
Sent: Wednesday, August 04, 2010 8:31 AM
To: EFSEC (UTC)
Subject: Resolution Demanding Retraction of Dept of Interior Comments on Whistling Ridge Wind Energy Project
Attachments: Interior Resolution.pdf; ER10_492_deis[1].pdf

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
620 SW Main Street, Suite 201
Portland, Oregon 97205-3026

9043.1
IN REPLY REFER TO:
ER10/492

Electronically Filed

July 19, 2010

Andrew M. Montaño
Environmental Project Manager
Bonneville Power Administration – KEC-4
P.O. Box 3621
Portland, Oregon 97208

Dear Mr. Montaño:

The U.S. Department of the Interior (Department) has reviewed the Draft Environmental Impact Statement (DEIS) for the Bonneville Power Administration's Whistling Ridge Energy Project, Skamania County, Washington. The Department offers the following comments for use in developing the Final Environmental Impact Statement for the project.

Lewis and Clark National Historic Trail

The proposed Whistling Ridge Energy project is located within five miles of the Lewis and Clark National Historic Trail (NHT), a congressionally-designated NHT, which follows the Columbia River and is within the area analyzed in the DEIS for potential visual impacts. In addition, US Interstate 84 and Washington Route 14 are the state-designated Lewis and Clark auto tour routes in the project area. Many visitors experience Lewis and Clark NHT by traveling the auto tour routes and stopping at interpretive and recreational sites along the way. The Department considers the viewshed along the river and auto tour routes to be a critical part of the trail visitor experience.

The Lewis and Clark NHT was established by Congress in an amendment to the National Trails System Act in 1978. 16 U.S.C. § 1244(a). As administrator of the trail, the National Park Service (NPS) is charged under this Act with the identification and protection of the historic route, remnants, and artifacts of the trail for public use and enjoyment.

Based on the analysis of visual impacts in the DEIS, it appears that a varying number of turbines will be visible from the trail's historic river and auto tour routes from near

Koberg Beach State Park to Lindsey Creek State Park. This approximately 15-mile stretch of the Columbia River Gorge has numerous recreational opportunities and scenic views that add significantly to enjoyment of the historic trail. Of the five viewpoints along US Interstate 84 analyzed in the DEIS, Viewpoint 14 at Viento State Park, is rated in Table 3.9-2 as having an anticipated moderate to high level of visual impact. However, on page 3-193 of the DEIS, the potential visual impact for this viewpoint is stated as only moderate. Furthermore, it appears that the turbines were inadvertently omitted in the photomontage in Figure 3.9-11. While difficult to discern the impact at this location without clarification on the accuracy of the visual simulation, we believe that the impact should be rated as high given the placement of turbines on the skyline within four miles of a park located along the auto tour route.

Turbine string A1-A7 would be highly visible from numerous locations along the trail due to its placement on a ridgeline close to the Columbia River Gorge. The NPS recommends removing or relocating these seven turbines, if feasible. This would significantly reduce the impact to visual resources along the historic trail. The visual resources in this region—Columbia River Gorge National Scenic Area and Lewis and Clark NHT—are important resources that should be protected.

Please add the following people to the federal agency distribution list for this project:

Dan Wiley
Chief of Resources Stewardship
Lewis and Clark National Historic Trail
601 Riverfront Drive
Omaha, NE 68102
(402) 661-1830
Dan_Wiley@nps.gov

Lee Kreutzer
National Trails System
National Park Service
324 S. State, Suite 200
Salt Lake City, UT 84111
(801) 741-1012 ext. 118
Lee_Kreutzer@nps.gov

SPECIFIC COMMENTS

Water Resources Section 3.3

Pg. 3-26: Section 3.3.1.3 lacks sufficient information on the existing groundwater environment to support the finding of little or no impact. Suggest the section more fully address the depth to groundwater, flow direction, and transmissivity (permeability) of the aquifer as it relates to possible affects on the area domestic and agricultural ground-water resources (also see section 3.3.1.5). Helsel et.al. (2002) is a good reference for this type of analysis.

Pg. 3-29: Because section 3.3.3 addresses mitigation procedures for the isolation of groundwater from chemical spills, we assume that chemicals will be present on site during both construction and operation. Suggest the document include a discussion of potential chemical spills, and aquifer transmissivity (permeability), as it relates to the potential movement of contaminants toward nearby domestic or agricultural water wells.

Reference

Helsel, D.R. and Hirsch, R.M., 2002, Statistical methods in water resources: U.S. Geological Survey—Techniques of Water-Resources Investigations Book 4, Chapter A3, 510 p. Available on the internet at: http://pubs.usgs.gov/twri/twri4a3/

Thank you for the opportunity to review and comment on this DEIS. If you have any questions concerning the NPS comments, please contact Dan Wiley at (402) 661-1830 or at Dan_Wiley@nps.gov, or Lee Kreutzer at (801) 741-1013 (x118) or at Lee_Kreutzer@nps.gov. If you have any questions concerning the USGS comments, please contact Gary LeCain, USGS Coordinator for Environmental Document Reviews, at (303) 236-5050 (x229) or at gdlecain@usgs.gov. If you have any other questions, please contact me at (503) 326-2489.

Sincerely,

Preston A. Sleeger
Regional Environmental Officer

COMMENT LETTER 165

WR - DEIS
Public Comment #363

Michelle, Kayce (UTC)

From: C. William Savery [redacted]
Sent: Friday, August 13, 2010 2:25 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat and would degrade the outstanding scenic beauty of the Columbia River Gorge National Scenic Area.

Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

C. William Savery
[redacted]

COMMENT LETTER 166

WR - DEIS
Public Comment #364

Michelle, Kayce (UTC)

From: Dhausken [redacted]
Sent: Saturday, August 14, 2010 8:32 AM
To: EFSEC (UTC)
Subject: Whistling Ridge wind energy project -- comment

Hello,
I am a Portland resident with a second home in White Salmon, Wa. I have a view of Mt Hood and Underwood mountain (among other things). I am opposed to adding windmills to the views in the Gorge, as long as that is possible. As a citizenry here in the US we try to preserve a small number of exceptional areas. The Gorge (and the US citizens) deserve as gorgeous a Gorge as possible. There is lots of windy land in these United States that is not protected as a national treasure. Seeing windmills from anywhere in the Gorge Scenic Area would be a further loss. I am still adjusting to the changed landscape around Maryhill with the addition of windmills there in the last couple of years. They are interesting to see, but they detract from the formerly simply grand landscape. Please don't bring tall, moving, unnatural structures into view in Skamania County! Any additional mechanical objects on the horizon WILL detract from the wonderful and unique Columbia Gorge experience.
Sincerely, Ruth Warbington.

=

Michelle, Kayce (UTC)

From: blayney myers [b[redacted]
Sent: Monday, August 16, 2010 9:33 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

blayney myers
[redacted]

COMMENT LETTER 168

WR - DEIS
Public Comment #366

RECEIVED
AUG 16 2010
ENERGY FACILITY SITE
EVALUATION COUNCIL

July 28, 2010

Stephen Posner
Energy Facility Site Manager
Washington EFSEC
905 Plum Street SE
Third Floor
Olympia, WA 98504-3172
(360) 956-2063
stephen.posner@commerce.wa.gov

Dear Mr. Posner,

In response to the Draft EIS, this letter is submitted to you to document our continued support for the Whistling Ridge Energy Project. As Chiefs of the Klickitat and Cascades Tribes of the Yakama Nation, we have worked closely with Jason Spadaro, President of SDS Lumber Company, on the Whistling Ridge Energy Project for several years. SDS Lumber Company approached us cooperatively and very early in their process, asking us to review their property and identify any concerns we may have with a wind energy project in the area.

We have reviewed the Draft EIS and would like to bring to your attention Section 3.10, specifically page 3-204 which accurately summarizes our position. Several times, we have reviewed the property where SDS proposes to develop wind energy and have never found any issues related to cultural resources or traditional cultural properties of concern to us as Chiefs of the Klickitat and Cascades Tribes of the Yakama Nation. We provided this information directly to the applicant's specialists who wrote the cultural resources report used for the Draft EIS.

This area where SDS Lumber proposes wind energy is within our homeland and we feel that we are uniquely qualified to determine what areas have been traditionally used by our people and what traditional cultural properties for this area are. As knowledgeable individuals with ancestral ties to the Columbia River Gorge in the immediate vicinity of the Whistling Ridge Energy Project, we have been consulted with in the past on other development projects, and have provided information on traditional properties so that they could be avoided. There are no traditional properties within the Whistling Ridge Energy Project area. The site has been in commercial timber production for many years. Prior to timber harvesting on the site, it was heavily forested. The area of the project is surrounded by steep terrain, there are no streams or significant east-facing views and the he land is rocky and rigid with a lot of natural brush. Our people have never used this area as a vision quest site, burial area, resource gathering area, travel route, or for any other significant purposes.

We strongly believe wind energy development should be encouraged in appropriate areas because it is clean energy. We believe the SDS land being proposed is a very appropriate area because the SDS wildlife surveys have shown no threatened or endangered plants or

animals exist in the area and we do not find any cultural resource concerns to our Tribes. We believe everyone should be supportive of wind energy in places such as this because it is clean energy and should be encouraged over traditional energy resources like natural gas and coal fired plants that consume large amounts of water and pollute our air, hydro-electric dams that destroy our fish and nuclear power plants that poison our people.

Sincerely,

Chief Johnny Jackson
Cascades Tribe of Yakama Nation

Chief Wilbur Slockish
Klickitat Tribe of Yakama Nation

July 28, 2010

Andrew M. Montaño
Environmental Protection Specialist
Bonneville Power Administration
P.O. Box 3621 KEC-4
905 NE 11th Avenue
Portland, OR 92708-3621
(503) 230-4145
ammontano@bpa.gov

RECEIVED
AUG 16 2010
ENVIRONMENT
FISH & WILDLIFE

Dear Mr. Montaño,

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Sincerely,

Chief Johnny Jackson
Cascades Tribe of Yakama Nation

Chief Wilbur Slockish
Klickitat Tribe of Yakama Nation

COMMENT LETTER 169

WR - DEIS
Public Comment #367

Michelle, Kayce (UTC)

From: Paula Wilson [redacted]
Sent: Monday, August 16, 2010 3:45 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Threatens Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county lines.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Paula Wilson
[redacted]

COMMENT LETTER 170

WR - DEIS
Public Comment #369

RECEIVED
AUG 18 2010
ENERGY FACILITY SITE
EVALUATION COUNCIL

U.S. POPULATION GROWTH AND THE FUTURE OF THE COLUMBIA RIVER WATER RESOURCES

Dale W. Glasgow*

On April 14-16, 2008, the 76th Western Snow Conference was held at the Best Western Hood River Inn, Hood river, Oregon. Climatologists, hydrologists, meteorologists, and geoscientists attended. They were from the universities of California, Washington, Oregon State, Portland State, Idaho, Idaho State, Boise State, Wyoming, Utah, Colorado State, and Nevada. Others attending were from the U. S. Army Corp of Engineers, U. S. Dept of Agriculture, U. S. Bureau of Reclamation, National Weather Service, National Aeronautics and Space Administration, National Oceanic and Atmospheric Administration, U. S. Geological Survey, NASA Ames Research Center, Natural Resources Conservation Service, California Dept of Water Resources, San Francisco Hetch-Hetchy Water System, Bonneville Power Administration (BPA), British Columbia Hydro, and Portland General Electric.

The theme of the conference was the impact of global warming and climate change on the following: 1.water storage and early melting of the snow packs in the Washington and Oregon Cascade mountains, Colorado and Canadian Rocky mountains, and the California Sierra Navada mountains; 2. melting and receding glaciers in the western U. S. and Canada; 3. changing hydrology of western rivers; 4. drastic reductions of the water levels of Lake Powell and Lake Mead, which are only one-half full; 5. water deliveries to the lower Colorado River Compact states; 6.increasing extreme drought conditions in the Southwest; and 7. increasing severe wildfires in the West. It was all about water, energy, and people.

The impact of global warming in the western U. S. may be worse than the assessments of the Intergovernmental Panel on Climate Change. During the conference the subject of water for the increasing populations of the western U. S. was introduced. The compound increase in the U. S. population could easily cancel out a 20% increase in water and energy conservation. The Population Division of the U. S. Census Bureau has published a report, GCT-TI-P Data Set-2007, which states that the U. S. is the third most populous country in the world, with about 304 million as of July, 2008. The U. S. population is increasing at a rate of 0.95% per year (1.8 million per year), which is the highest of any industrialized nation and which is expected to reach 418 million just 34 years from now. The U. S. Census Bureau states that California had a population of 36,553,000 on July 1, 2007, which is now increasing by one-half million per year. California has more people than the combined population of the states of Washington, Oregon, Idaho, Nevada, Arizona, Montana, Wyoming, North and South Dakota, Colorado, Utah, New

Mexico, and Nebraska. California has as many representatives in Congress as all of the above-mentioned states. California has 3.5 times more representatives in Congress than the Columbia River Basin states of Oregon, Washington, and Idaho. This power bloc in Congress could be detrimental to these states.

The U. S. Dept of Energy states that the U. S. consumes nearly 100 Quads of energy per year, which is just over one-fourth of the world's consumption. A Quad of energy is nearly 1 exa joules (1 billion billion joules), or 1 peta BTUs (1 million billion BTUs), The U.S. energy consumption is projected to increase by 1.5% in the same 34-year time period.

It is only a matter of time before the expanding populations of the Southwest will require more electric power and water above and beyond that saved by conservation. Who will supply the power?

There is a high probability that no more power generating dams and nuclear fission power plants will be built in the near future in the Northwest. The additional power will probably come from the development of more wind farms. Some of the wind-powered generated electricity from the Northwest is already going to California. Eastern Washington and part of eastern Oregon is the home of six wind farms, with 924 wind turbines generating about 1.1 billion watts peak power when the wind is blowing. With an efficacy of about 0.33, the average power is about 356 million watts, which is enough electricity for 226,000 homes. The Biglow Canyon Wind Farm in Sherman County, Oregon, plus two other proposed wind farms in eastern Oregon, when completed will add another 800-950 megawatt peak power to the BPA grid.

The yearly energy output of the Washington wind farms is about 3127 gigawatt hours, which is slightly more than the 2892 gigawatt hours of the Rock Island Dam on the Columbia River and about 60% of the energy output of the Little Goose Dam on the Lower Snake River. The yearly electrical energy output of 91,928 gigawatt hours from the 11 dams on the U. S. portion of the Columbia River is 29 times greater than the output of the six Washington wind farms. These seem like very large numbers; however, the potential for more wind power in eastern Washington and Oregon is encouraging since only about one 1% of the leased or owned land around the wind farm is now utilized.

Who will supply the water? The Colorado River is presently the source of much of the water for Las Vegas, Nevada and Phoenix, Arizona. The allocation of Colorado River Basin water to Colorado, Wyoming, New Mexico, Utah, Arizona, Nevada, and California is governed by the 1922 Colorado

River Compact which promised 7.5 million acre feet of water to California, Arizona, and Nevada. An acre foot is the amount of water covering an acre of ground to a depth of one foot or the amount of water used by a typical U. S. family in one year.

The 7.5 million acre feet (maf) was one-half of the annual flow of the Colorado River and was not depriving the up-stream states of water. However, the growing populations of these upper stream states now need more of the flow, and the Compact is now under more political stress. The scheduled depletions for this year total 11.8 maf, which will be unsustainable in the future.

Global climate models don't always agree with each other in the predictions of rain and snow fall, but they universally agree the U. S. Southwest is drying up. There is a 50% chance that lakes Mead, Powell, and Mojave will dry up by 2021. Besides Las Vegas, Nevada, and Phoenix, Arizona, other cities that will be drastically affected will be Los Angeles and its surrounding area, and San Diego, California.

Developers have expanded the environs of these cities without much thought regarding the future water supply. So where will the water come from? Flash distillation of 10 maf of Pacific Ocean water would be extremely energy intensive and would require the construction of many huge solar or nuclear power plants, which would raise the cry "not in my back yard." The population of California is predicted to increase by 10 million by 2028, while the Colorado River flow will be drastically reduced. It was remarked at the conference that obtaining water for the increasing population is already a problem and is rapidly getting worse. It was also brought up that the Columbia River could supply 10 maf to California without stressing the Columbia River Basin since the average yearly water outflow at Bonneville Dam is 137.5 maf. Nothing was discussed regarding the environment of the Columbia River Gorge or the salmon.

The Southwest states are aware that the diversion of 10 maf through an aqueduct over the plateau of eastern Oregon to the California border would be much easier and less expensive than the 1000-mile-long Trans Alaska Pipeline, which crosses three mountain ranges, 800 or more rivers and streams, and costs nine billion dollars. This aqueduct would parallel the existing high-voltage electrical transmission lines starting near The Dalles, Oregon, and extending 255 miles to the California border south of Klamath Falls, Oregon (elevation 4105 feet). The extension from the California border to Shasta Lake is about 75 miles downhill. Some of the energy lost in pumping Columbia River water up onto and along the eastern Oregon

plateau would be recovered by in-line hydroelectric generating systems utilizing the water falling down from higher elevations to Shasta Lake.

Engineers have much experience in designing and building large pumping systems and pipelines. There are no show stoppers, with the electrical energy coming from the expanded eastern Oregon and Washington wind farms.

The states of Arizona and Nevada know that an aqueduct skirting east of the Cascade and Sierra Nevada mountains extending to the Colorado River near Las Vegas is also quite feasible. We only need to remember a plan to divert Columbia River water to California (in the 1950s), which was blocked by Washington senators Henry Jackson and Warren Magnuson, who were chairmen of important Senate committees. It is now clear that the issue is not dead and will be revived. People in the Southwest are now talking about water for their children and also for the next generation.

*Physicist, previously from Los Alamos National Laboratory (University of California), and Duke University.
.10522 Cook Underwood Road, Underwood, Washington, 98561

THE WHISTLING RIDGE ENERGY PROJECT

The Whistling Ridge Energy Project is the right kind of renewable energy at the right time, but at the wrong location. Why is this the wrong location? Figure 3.8-2 of the Draft Environmental Impact Statement (DEIS) indicates that the Underwood and Mill A residents are much closer to the visible wind farm than any others, including the residents of Bingen, White Salmon, and Hood River. The tips of the wind turbine blades of the southern most wind towers will rotate within a few feet of the boundary of the Columbia River Gorge National Scenic Area. The wind towers will be highly visible from Underwood and Mill A, and other locations up and down the gorge. We believe this is a visible insult to the unique beauty of the scenic area and the Lewis and Clark trail. How long will it be before developers start building wind turbine sites in juxtaposition to Mt. Rainier, Crater Lake, Yellowstone, Grand Canyon, etc., national parks?

A specification for The Whistling Ridge Energy Project enumerated in the DEIS clearly indicates that construction of the project will be a major industrial development in and juxtaposition to the Scenic Area. The project construction requires:

a. 150, 150- ft long, 17.5 ft high, 14.5 ft wide, 55 ton gross wt specialized truck loads of power sections traversing State Route 14 and Cook Underwood Road to the SDS logging roads. It is one thing for an empty log truck to go up onto Whistling Ridge and come down with a load of logs. It is a completely different situation for the large heavy specialized trucks to travel up the steep logging roads. Will this require D-8 caterpillar tractors pushing and pulling the trucks?

b. 150, 150- ft. long specialized truck loads of wind turbine blades traversing the same logging roads.

c. 5000, 20-ton truck loads of construction gravel.

d. 2000, concrete mixer truck loads (5 cubic yards per mixer load).

e. 50 20-ton tuck loads of construction reinforcing steel for the concrete power bases.

f. 2, 500-ton capacity cranes for erecting the power hub, nacel, and turbin blades.

g. Many low boy trucks to haul all of the bull dozers, back hoes, front end loaders, etc.

h. Many truck loads required for the construction of the supporting structures for the wind farm.

Needless to say, all of the thousands of trucks will pass within 50 ft of our house on Cook Underwood Road. The DEIS paints a rosy picture as viewed from Olympia, but not on our road.

WIND POWER

The generation of electricity by wind powered systems has the potential to be a nonpolluting source of energy. In areas with steady wind velocities of 15 to 16 miles per hour, such as the great plains states of Texas, Oklahoma, Nevada, North and South Dakota, eastern Montana and Wyoming, and also eastern Washington and Oregon, it is possible to generate electricity from wind farms for as low as 3.5 to 4 cents per kilowatt hour (KWh). Current tax incentives of 1.5 to 1.7 cents per KWh makes the generation of electricity by wind farms very competitive with electricity generated from the burning of hydrocarbon fuels such as coal and natural gas. Wind turbine farms do not spew carbon dioxide, nitrogen oxide, and sulfur oxides into the atmosphere, the atmosphere so they meet the definition of green energy systems.

An extensive systems analysis indicates that the price of wind generated electrical power is now less than electrical power generated from burning coal. The price of electricity derived from a new 500 megawatt coal-powered plant is about 5 cents per kilowatt hours (KWh), which is more than wind-powered generation. The carbon dioxide, nitrogen oxide, and sulfur oxide emission from coal-powered plants create acid rain, smog, degradation of visibility, carbon dioxide, which seem to be warming of the planet Some of these emissions increase the probability of cardiovascular diseases, asthma, respiratory problems, and human mortality. When the cost of all of these human health and environmental degradation are factored into the systems analysis, the cost of coal-powered electricity is approaching 8 cents per KWh.

Three blade wind turbine generators are not simple windmills since large variations in wind velocities subject the longest propeller blades ever made to constantly changing stresses and strains. Wind velocities may vary over time for periods of days, hours, minutes, and even seconds (micro wind bursts). These winds create a host of aerodynamic conditions such as laminar flow, turbulence, vortices, and variable angle of attack on the blades, flexing of the blades, tower wind-wake, and ground boundary layer effects.

For 100 meter rotor diameter and revolution times of I per second, the rotor tips have the velocity of 700 mph, which exceed the local velocity of sound and as such produce audible shock waves. It is obvious that the servo mechanism must rapidly furl the blades to save the system from destruction. A practical operating regime of 3 seconds per revolution produces rotor tip velocities of 230 MPh and noise levels of around 50 decibels. A wind turbine with an efficacy of 0.33 and a lifetime of 20 to 30 years may rotate 95 to 142 million times. These millions of propeller rotations produce flexings and stresses in the three blades which can lead to dislocations and stress fractures in the blades.

Three-dimensional mathematical modeling of the aerodynamics and stresses associated with revolving turbine blades require the use of large parallel processing computers to solve the tensor Navier Stokes equations and the tensor stress strain equations covering the surface and volume of the turbine blades, rotor, and tower. The computer results are compared to the scaled-up data resulting from aerodynamic wind tunnel tests of smaller versions of the wind turbine. which leads to more efficient designs.

Wind-driven electrical power generation is environmentally and economically superior to any of the hydrocarbon electrical power generation. The hydro generation of electricity is still superior to the wind generation. The electrical power derived from the 11 dams on the Columbia River and the 4 on the Snake River generate electricity that is delivered to the PUD's at a price of about 2.5 to 2.75 cents per KWh.

Expansion of the Northwest hydroelectric systems have already reached their maximum limit. Probably no more dams will be built on the Columbia and Snake River drainage areas because of environmental concerns. We now see the great potential for the increased development of large wind farms in eastern Washington and Oregon but not in the scenic part of the gorge. It is now only a matter of time before population pressures will necessitate more power production, even with conservation; hence, Northwest wind farms must increase in number. Go wind power in eastern Washington and Oregon but not in the gorge!!

COMMENT LETTER 171

Montano,Andrew M - KEC-4

From: Mendoza, Sonia (ECY) [redacted]
Sent: Monday, July 19, 2010 9:58 AM
To: Montano,Andrew M - KEC-4; stephen.posner@commerce.wa.gov
Cc: Groven, Connie (ECY)
Subject: SEPA No. 10-2884 "DEIS: Whistling Ridge Energy project" Comment Letter
Importance: High
Attachments: 10-2884.pdf; Enclosure.pdf

Mr. Montaño and Mr. Posner,
Per your request is our comments for the Whistling Ridge Energy project (Ecology File No. 10-2884) Comments are due today 7/19/10.

Please reply to this message for confirmation. Thank you.

Sonia Mendoza
[redacted]
Please consider the environment before printing this e-mail

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
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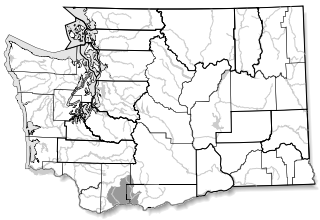
July 19, 2010

Andrew M. Montaño
Environmental Protection Specialist
Bonneville Power Administration
PO Box 3621 KEC-4
Portland, OR 92708-3621



Stephen Posner
Energy Facility Site Manager
Washington EFSEC
905 Plum Street Southeast, Third Floor
Olympia, WA 98504-3172

Dear Mr. Montaño and Mr. Posner:

Thank you for the opportunity to comment on the draft environmental impact statement for the Whistling Ridge Energy project located about seven miles north of the City of White Salmon in Skamania County. The Department of Ecology (Ecology) reviewed the information provided and has the following comment(s):

TOXICS CLEANUP: Connie Groven (360) 407-6254

Toxics Cleanup program comments submitted May 12, 2009, still apply to the project described (see enclosure). There are no new comments submitted at this time.

Ecology's comments are based upon information provided by the lead agency. As such, they may not constitute an exhaustive list of the various authorizations that must be obtained or legal requirements that must be fulfilled in order to carry out the proposed action.

If you have any questions or would like to respond to these comments, please contact the appropriate reviewing staff listed above.

Department of Ecology
Southwest Regional Office

(SM: 10-2884)
Enclosure

cc: Connie Groven, TCP

STATE OF WASHINGTON
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May 12, 2009

Mr. Allen Fiksdal, EFSEC Manager
Energy Facility Site Evaluation Council
PO Box 43172
Olympia, WA 98504-3172

Dear Mr. Fisksdal:

Thank you for the opportunity to comment on the determination of significance scoping notice for the Whistling Ridge Energy project (Application No. 2009-01) located in Skamania County as proposed by Whistling Ridge Energy LLC. The Department of Ecology (Ecology) reviewed the environmental checklist and has the following comment(s):

SEPA REGIONAL PROJECT LEAD: Sarah Lukas (360) 407-7459

SHORELANDS:
The submitted scoping notice identifies the intent of preparing a floodplain and wetland assessment as part of the analysis used in the draft environmental impact statement (DEIS). The assessment should include: An inventory of all wetlands and areas of floodplain in the project area and within the vicinity of the proposal; the environmental values these aquatic features provide to the landscape; what and how the floodplain areas and wetlands will be impacted by the proposal; what environmental values will be lost from these impacts; and mitigation measures to offset the proposed environmental impacts that cannot be avoided.

The DEIS should also include an analysis of all other surface water bodies in, and within the vicinity of, the project site. An equivalent documentation of existing environmental values, proposed impacts, and proposed mitigation measures to unavoidable impacts should be outlined in the DEIS as requested for the wetlands and floodplain areas above.

TOXICS CLEANUP: Connie Groven (360) 407-6254

If contamination is currently known or suspected during construction, testing of the potentially contaminated media must be conducted. If contamination of soil or groundwater is readily visible, or is revealed by testing, Ecology must be notified. Contact the Environmental Report Tracking System Coordinator at the Southwest Regional Office at (360) 407-6300. For assistance and information about subsequent cleanup and to identify the type of testing that will be required contact Connie Groven with the Toxic Cleanup Program at the Southwest Regional Office at the phone number given above.

WATER QUALITY: Roberta Woods (360) 407-6269

Any discharge of sediment-laden runoff or other pollutants to waters of the state is in violation of Chapter 90.48 RCW, Water Pollution Control, and WAC 173-201A, Water Quality Standards for Surface Waters of the State of Washington, and is subject to enforcement action.

Erosion control measures must be in place prior to any clearing, grading, or construction. These control measures must be effective to prevent stormwater runoff from carrying soil and other

pollutants into surface water or storm drains that lead to waters of the state. Sand, silt, clay particles, and soil will damage aquatic habitat and are considered to be pollutants.

Proper disposal of construction debris must be on land in such a manner that debris cannot enter buffers and waters of the state or cause water quality degradation of state waters.

During construction, all releases of oils, hydraulic fluids, fuels, other petroleum products, paints, solvents, and other deleterious materials must be contained and removed in a manner that will prevent their discharge to waters and soils of the state. The cleanup of spills should take precedence over other work on the site.

Clearing limits and/or any easements or required buffers should be identified and marked in the field, prior to the start of any clearing, grading, or construction. Some suggested methods are staking and flagging or high visibility fencing.

A permanent vegetative cover should be established on denuded areas at final grade if they are not otherwise permanently stabilized.

All temporary erosion control systems should be designed to contain the runoff from the developed two year, 24-hour design storm without eroding.

Coverage under the National Pollution Discharge Elimination System (NPDES) and State Waste Discharge General Permit for Stormwater Discharges Associated with Construction Activities is required for construction sites which disturb an area of one acre or more and which have or will have a discharge of stormwater to surface water or a storm sewer. An application can be downloaded from Ecology's website at http://www.ecy.wa.gov/programs/wq/stormwater/construction/#Application or you can contact Josh Klimek at (360) 407-7451 for an application form. To avoid project delays, we encourage the applicant(s) to submit a completed application form and to publish public notice more than 60 days before the planned start of the project.

Ecology's comments are based upon information provided by the lead agency. As such, they may not constitute an exhaustive list of the various authorizations that must be obtained or legal requirements that must be fulfilled in order to carry out the proposed action.

If you have any questions or would like to respond to these comments, please contact the appropriate reviewing staff listed above.

Department of Ecology
Southwest Regional Office

(SM: 09-2310)

cc: Connie Groven, TCP
Sarah Lukas, SEA
Brett Raunig, VFO/WQ
Joyce Smith, HQ/WQ
Roberta Woods, WQ
Whistling Ridge Energy LLC (Proponent)

Montano,Andrew M - KEC-4

From: Mendoza, Sonia (ECY) [redacted]
Sent: Wednesday, August 25, 2010 2:00 PM
To: Montano,Andrew M - KEC-4; stephen.posner@commerce.wa.gov
Cc: Chen, Qing (ECY); Cline, Vicki (ECY); Drumright, Mike (ECY); Groven, Connie (ECY); Toteff, Sally (ECY)
Subject: Ecology SEPA No. 10-2884A "Whistling Ridge project" Comment Letter
Importance: High
Attachments: Enclosure.pdf; 10-2884A.pdf

Mr. Montano and Mr. Posner,
Attached is our comments for the Whistling Ridge project (Ecology File Nos. 10-2884A). Comments are due 8/27/10.

Please reply to this message for confirmation. Thank you.

Sonia Mendoza
Department of Ecology-SWRO
SEPA Coordinator
[redacted]

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May 12, 2009

Mr. Allen Fiksdal, EFSEC Manager
Energy Facility Site Evaluation Council
PO Box 43172
Olympia, WA 98504-3172

Dear Mr. Fisksdal:

Thank you for the opportunity to comment on the determination of significance scoping notice for the Whistling Ridge Energy project (Application No. 2009-01) located in Skamania County as proposed by Whistling Ridge Energy LLC. The Department of Ecology (Ecology) reviewed the environmental checklist and has the following comment(s):

SEPA REGIONAL PROJECT LEAD: Sarah Lukas (360) 407-7459

SHORELANDS:
The submitted scoping notice identifies the intent of preparing a floodplain and wetland assessment as part of the analysis used in the draft environmental impact statement (DEIS). The assessment should include: An inventory of all wetlands and areas of floodplain in the project area and within the vicinity of the proposal; the environmental values these aquatic features provide to the landscape; what and how the floodplain areas and wetlands will be impacted by the proposal; what environmental values will be lost from these impacts; and mitigation measures to offset the proposed environmental impacts that cannot be avoided.

The DEIS should also include an analysis of all other surface water bodies in, and within the vicinity of, the project site. An equivalent documentation of existing environmental values, proposed impacts, and proposed mitigation measures to unavoidable impacts should be outlined in the DEIS as requested for the wetlands and floodplain areas above.

TOXICS CLEANUP: Connie Groven (360) 407-6254

If contamination is currently known or suspected during construction, testing of the potentially contaminated media must be conducted. If contamination of soil or groundwater is readily visible, or is revealed by testing, Ecology must be notified. Contact the Environmental Report Tracking System Coordinator at the Southwest Regional Office at (360) 407-6300. For assistance and information about subsequent cleanup and to identify the type of testing that will be required contact Connie Groven with the Toxic Cleanup Program at the Southwest Regional Office at the phone number given above.

WATER QUALITY: Roberta Woods (360) 407-6269

Any discharge of sediment-laden runoff or other pollutants to waters of the state is in violation of Chapter 90.48 RCW, Water Pollution Control, and WAC 173-201A, Water Quality Standards for Surface Waters of the State of Washington, and is subject to enforcement action.

Erosion control measures must be in place prior to any clearing, grading, or construction. These control measures must be effective to prevent stormwater runoff from carrying soil and other

pollutants into surface water or storm drains that lead to waters of the state. Sand, silt, clay particles, and soil will damage aquatic habitat and are considered to be pollutants.

Proper disposal of construction debris must be on land in such a manner that debris cannot enter buffers and waters of the state or cause water quality degradation of state waters.

During construction, all releases of oils, hydraulic fluids, fuels, other petroleum products, paints, solvents, and other deleterious materials must be contained and removed in a manner that will prevent their discharge to waters and soils of the state. The cleanup of spills should take precedence over other work on the site.

Clearing limits and/or any easements or required buffers should be identified and marked in the field, prior to the start of any clearing, grading, or construction. Some suggested methods are staking and flagging or high visibility fencing.

A permanent vegetative cover should be established on denuded areas at final grade if they are not otherwise permanently stabilized.

All temporary erosion control systems should be designed to contain the runoff from the developed two year, 24-hour design storm without eroding.

Coverage under the National Pollution Discharge Elimination System (NPDES) and State Waste Discharge General Permit for Stormwater Discharges Associated with Construction Activities is required for construction sites which disturb an area of one acre or more and which have or will have a discharge of stormwater to surface water or a storm sewer. An application can be downloaded from Ecology's website at http://www.ecy.wa.gov/programs/wq/stormwater/construction/#Application or you can contact Josh Klimek at (360) 407-7451 for an application form. To avoid project delays, we encourage the applicant(s) to submit a completed application form and to publish public notice more than 60 days before the planned start of the project.

Ecology's comments are based upon information provided by the lead agency. As such, they may not constitute an exhaustive list of the various authorizations that must be obtained or legal requirements that must be fulfilled in order to carry out the proposed action.

If you have any questions or would like to respond to these comments, please contact the appropriate reviewing staff listed above.

Department of Ecology
Southwest Regional Office

(SM: 09-2310)

cc: Connie Groven, TCP
Sarah Lukas, SEA
Brett Raunig, VFO/WQ
Joyce Smith, HQ/WQ
Roberta Woods, WQ
Whistling Ridge Energy LLC (Proponent)

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August 25, 2010

Andrew M. Montaño
Environmental Protection Specialist
Bonneville Power Administration
PO Box 3621 KEC-4
Portland, OR 92708-3621

Stephen Posner
Energy Facility Site Manager
Washington EFSEC
905 Plum Street Southeast, Third Floor
Olympia, WA 98504-3172

Dear Mr. Montaño and Mr. Posner :

Thank you for the opportunity to comment on the draft environmental impact statement for the Whistling Ridge project located in Skamania County. The Department of Ecology (Ecology) reviewed the information provided and has the following comment(s):

AIR QUALITY: Qing Chen (360) 407-6809

Best Management Practice for minimization of track out and windblown dust should be required in applicable permitting.

TOXICS CLEANUP: Connie Groven (360) 407-6254

Toxics Cleanup program comments submitted May 12, 2009, still apply to the project described (see enclosure). There are no new comments submitted at this time.

WASTE 2 RESOURCES: Mike Drumright (360) 407-6397

All grading and filling of land must utilize only clean fill, i.e., dirt or gravel. All other materials, including waste concrete and asphalt, are considered to be solid waste and permit approval must be obtained through the local jurisdictional health department prior to filling. Standards apply as defined by Washington Administrative Code (WAC) 173-350-990-Criteria for Inert Waste.

Property owners, developers, and contractors are encouraged to recycle all possible leftover construction, demolition, and land clearing (CDL) materials and reduce waste generated. Recycling construction debris is often less expensive than landfill disposal. Please visit http://1800recycle.wa.gov or call the 1-800-RECYCLE hotline to find facilities that that will accept your CDL materials for reuse or recycling.

WATER RESOURCES: Vicki Cline (360) 407-0278

All water wells shall be constructed in accordance with the provisions of Chapter 173-160 WAC by a driller licensed in the State of Washington. Well reports must be submitted to Ecology within 30 days after completion of a well.

All water wells that may be drilled must be a minimum of 100 feet from any known, suspected, or potential source of contamination. Wells shall not be located within 1,000 feet of a solid waste landfill. WAC 173-160-171(1) The proposed water well shall be located where it is not subject to ponding and is not in the floodway, except as provided in Chapter 86.16 RCW. (2) It shall be protected from a one hundred year flood and from any surface or subsurface drainage capable of impairing the quality of the ground water supply.

The Growth Management Act (Section 63) requires an applicant to submit evidence of an adequate water supply before a building permit can be issued for any building requiring potable water.

Any ground water withdrawals anticipated exceeding 5,000 gallons a day for domestic uses or for commercial/industrial uses require a water right permit. Any modification to existing water rights must be approved by Ecology's Water Resources Program.

Ecology's comments are based upon information provided by the lead agency. As such, they may not constitute an exhaustive list of the various authorizations that must be obtained or legal requirements that must be fulfilled in order to carry out the proposed action.

If you have any questions or would like to respond to these comments, please contact the appropriate reviewing staff listed above.

Department of Ecology
Southwest Regional Office

(SM: 10-2884A)
Enclosure

cc: Qing Chen, AQP
Vicki Cline, WR
Mike Drumright, W2R
Connie Groven, TCP

COMMENT LETTER 172

WR - DEIS
Agency Comment #2

Michelle, Kayce (COM)

From: Posner, Stephen (COM)
Sent: Monday, July 19, 2010 3:29 PM
To: Michelle, Kayce (COM)
Subject: FW: DNR Comments on Whistling Ridge DEIS

Kayce,

Please log in as a comment on the DEIS for WR. Thanks.

From: O NEAL, ELIZABETH (DNR) **On Behalf Of** KIHIA, SIMON (DNR)
Sent: Monday, July 19, 2010 3:05 PM
To: Posner, Stephen (COM)
Cc: TURLEY, CHUCK (DNR); SPRAGUE, CLAY (DNR); CRAMER, DARIN (DNR); NORMAN, DAVE (DNR); HERMAN, JED (DNR); SHRAMEK, JOSEPH (DNR); YOUNG, LENNY (DNR)
Subject: DNR Comments on Whistling Ridge DEIS

Whistling Ridge Comments.pdf

July 19, 2010

Stephen Posner
Energy Facility Site Evaluation Council
905 Plum Street
Olympia, Washington 98504-3172

RE: DNR Comments on Whistling Ridge DEIS

Dear Stephen:

Thank you for the opportunity to review and comment on the joint NEPA SEPA Whistling Ridge draft environmental impact statement (DEIS). We looked primarily at fire hazard, plant species and communities, northern spotted owls and WA Department of Natural Resources' Habitat Conservation Plan (DNR HCP), forest practice requirements, and surface mines and reclamation.

Some of our concerns include: the presence or impacts to Oregon white oak/Idaho fescue plant communities; northern spotted owls, their habitat and associated HCPs; forest practice requirements for this proposal, and a permitted source of aggregate for roads and structures. Our adjacent HCP land to the north is managed to provide habitat that makes a significant contribution to demographic support, maintenance of species distribution and facilitation of owl dispersal. The DEIS on page 3-56 states there are no HCPs in or near the project area. Forest practices owl protection requirements were also not correctly explained. Please also note that state agency wildlife species review is typically done by WA Department of Fish and Wildlife (WDFW), and DNR biologists did not look at impacts to species not protected under the DNR forest land HCP in eastern Washington, other than compliance with Forest Practices Rules.

FPA conversion permits and DNR surface mining reclamation permits (SMRP) are required for timber harvest and rock or gravel mining associated with conversion of forest land and the associated building or construction at the wind tower sites. This was not clear in the DEIS and the SMRP was not listed in Table 4-1. For more details as to DNR concerns and specific requests for DEIS corrections or DEIS additions on the topics noted above please see the following text. Staff contacts are also included for more information or questions.

Fire Hazard

DNR has fire protection responsibility on a significant portion of the land within the project area. After review of the DEIS, we believe that implementation of the fire related mitigation measures listed in Chapter 3, section 3.6.3 of the DEIS (5/1/2010) would adequately address fire prevention responsibility and response on those lands. Thank you for this consideration.

Contact:
Darrel Johnston
Phone: (360) 902-2112
darrel.johnston@dnr.wa.gov

Plant Species and Communities

Issues:

- The EIS appears to adequately address 'Special Status Plant Species.' They appear to have queried appropriate sources of information and to have done on-the-ground surveys at the appropriate times. Thank you for this consideration.
- On page 3-43, there is mention of the Oregon white oak/Idaho fescue plant community. However, there is no subsequent mention of it. Was it surveyed for and not found? Was it not surveyed for, because there was no requirement to do so?

Request:

Add a statement(s?) about the Oregon white oak/Idaho fescue plant community on page 3-74 where the impacts to special status plant species are discussed.

Contact:
John Gamon
(360) 902-1661
john.gamon@dnr.wa.gov

Northern Spotted Owls and Associated DNR HCP

Note: State agency wildlife species review is typically done by WDFW. DNR biologists looked at impacts to those species protected under our DNR forest land HCP in the range of the northern spotted owl, not other eastern Washington wildlife species. See also DNR comments as to Forest Practice Rule requirements related to spotted owls in the next DNR comment section.

- Whistling Ridge Energy Project Draft EIS, Page 3-50 states surveys were conducted for northern spotted owl presence in 2008-2009 using the 1992 USFWS survey protocol. No spotted owls were detected during these surveys. Page 3-52 states that the longstanding absence of any northern spotted owls at the historic

site centers suggest that these site centers likely no longer qualify for special protection. Page 3-53 states that the Turnstone and DNR/NCASI surveys affirmatively documented the absence of northern spotted owl site centers in these historic sites. They also state that surveys conducted in and near the project area indicate that spotted owls are not present. Additional surveys were conducted during three daytime site visits over the seasonal breeding window in 2009 to determine if spotted owls may be in the vicinity but were not vocalizing due to the presence of barred owls. No spotted owls were detected.

Comment: It is widely understood that one of the most serious threats facing the northern spotted owl is the recent range expansion of another closely related owl species, the barred owl, ***Strix varia***. Because barred owls may attack and kill spotted owls, spotted owls are known to vocalize less when around barred owls. This poses a serious problem when the primary means of establishing spotted owl presence is spotted owl vocal response to simulated calls. Hence, vocalization survey results may be unreliable as spotted owls are unlikely to vocalize due to the presence of barred owls, which was the case during the surveys for this project.

Request:

Please note that DNR biologists do not believe that three daytime visits over one season is sufficient evidence to determine that spotted owls are not in the vicinity and are just not vocalizing. Vocalization survey results may be unreliable.

- Whistling Ridge Energy Project Draft EIS, Page 3-56 "A review of USFWS habitat conservation plans issued in the Pacific region indicates there are no spotted owl-related habitat conservation plans applicable in or near the project area." (USFWS 2009b)

  Literature citation: U.S. Fish and Wildlife Service (USFWS). 2009b. Conservation Plan and Agreement Database. Accessed via the Internet at: http://ecos.fws.gov/conserv_plans/public.jsp

  Comment: DNR accessed this website and found the Washington Dept. of Natural Resources HCP identified with 5 listed species covered under this HCP. One of the listed species identified is the northern spotted owl. The area covered under the Washington Dept. of Natural Resources HCP conservation strategy for the northern spotted owl covers DNR managed land directly adjacent to the Whistling Ridge Energy Project to the north.

  Hence, the information provided in the Whistling Ridge Energy Project Draft EIS that "...there are no spotted owl-related habitat conservation plans applicable in or near the project area".... is incorrect.

  Comment: This project may interfere with a spotted owl's ability to disperse from the DNR HCP conservation area to other areas in the vicinity. The state trust lands *HCP Amendment #1 Administrative Amendment to the Northern Spotted Owl Conservation Strategy for the Klickitat HCP Planning Unit,* April 2004 has designated areas for northern spotted owl Nesting, Roosting, and Foraging (NRF) habitat management located directly adjacent to this project's northern boundary. The DNR conservation objective for the northern spotted owl is to provide habitat that makes a significant contribution to demographic support, maintenance of species distribution and facilitation of dispersal.

Request:

Please correct the DEIS text concerning DNR HCP location. You might also reconsider and reword your conclusion that no project impacts are expected to spotted owls.

Contact:

Tami Miketa (360) 902-1481

tamara.miketa@dnr.wa.gov

Forest Practices

Resources at risk by section (from DNR Forest Practices Risk Assessment Tracking GIS data)**:**

- All sections in the proposal are within the Bull Trout overlay delineated in state FP rules (WAC- 222).
- T3N-R10E-S5 There is an F type stream with possible Bull Trout required protections. There are potential unstable slopes indicated.
- T3N-R10E-S6 There is an F type stream with possible Bull Trout required protections. There are potential unstable slopes indicated. There is a Spotted Owl circle.
- T3N-R10E-S7 There is an historic site and there are potential unstable slopes indicated.
- T3N-R10E-S8 There is an historic site.
- T3N-R9E-S12 No issues
- T3N-R9E-S13 There are potential unstable slopes indicated.

Applicable FP rules that may be relevant to the project. Most of these would come into play if there is logging or road building near any waters.

- 222-16-030 Water typing systems
- 222-16-050 Classes of Forest Practices
- 222-20-010 Applications and Notifications
- 222-24-030 Road construction
- 222-24-040 Water crossing structures
- 222-24-052 Road maintenance
- 222-30-020 Harvest unit planning and designs (wetland management zones)
- 222-30-022 Eastern Washington RMZs
- 222-30-050 Felling and Bucking
- 222-30-070 Ground based logging systems.

Comments, concerns and potential mitigation that would be required (for specific DEIS page numbers):

- 2-9, 2-15. Harvesting trees in areas that are not already cleared. This would require an approved Forest Practices Application prior to harvest. Need for Forest Practices Application is already listed in required permits on page 4-3.
- 2-11. The map shows a riparian area. The wetland is described in 3-24. County protection measures are described on 3-39 for category II wetlands.

Request:

If this is on forest land you should verify if it is a Type A or Type B wetland and that the 100 foot buffer would also meet or exceed any FP Rule requirements for a Type A or B wetland (WAC 222-30-020) for that location.

- 3-11. The potential for landslides is described with building of the wind towers. On 3-12, it is stated that there will be no impact to drainages and on 3-12 and 3-13 are mitigation measures.

Request:

Acknowledge that unstable slopes with potential to deliver to public resources would require appropriate protection under forest practices rules to minimize impacts to any unstable areas and associated public resources and/or public safety. This mitigation requirement is not noted.

- 3-28. Approximately 22 acres of the site will be converted from timber management to non forestry use around the wind turbine sites. All of the Forest Practices Applications that were applied for in the area

indicated that the sites would be kept in forestry, not converted to a non-forestry use. This appears to be a violation of the Forest Practices Rules. Potential conversion impacts were not considered. Any future FPAs to harvest trees near wind tower locations will require a conversion FPA (Class IV-General) and any current timber harvesting under current FPAs may be in violation as well. State law (RCW 76.09.460) allows that Skamania County may deny any conversion permits for up to six years on any sites where FPAs were not submitted as conversion FPAs. Under Forest Practices Rules and Regulations (WAC 222-34) DNR requires reforestation to occur on all harvested acres that will remain in forestry.

Request:

All applicable FPAs should be amended or reapplied for to reflect conversion activities (RCW 76.09.470). Any new Class IV-General FPAs must await completion of the final EIS before they can be approved for harvest by DNR.

- 3-50. The comment is made that the project is not sited in or near any Spotted Owls or Spotted Owl activity site centers. There are two Spotted Owl circles within portions of the proposal area.

Request:

Please correct the inaccurate statement concerning spotted owls.

- 3-50 and 3-53. "The two Spotted Owl site centers are no longer considered to be occupied pursuant to USF&W protocols and state law." This is an inaccurate statement. The two Spotted Owl circles are still in the state data base and have not been decertified as of this date. Forest Practices rules and regulations still require appropriate protections (WAC 222-16-080(6)).

Request:

Please correct the inaccurate statement concerning spotted owls and correctly state the appropriate FP Rule mitigation measures that are required.

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joe.blazek@dnr.wa.gov

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John Bromley
Office (360) 902-1452
Cell (360) 280-7518
Email john.bromley@dnr.wa.gov

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Best Regards,

Simon M. Kihia,
Manager, Environmental Review and Analysis

WASHINGTON STATE DEPARTMENT OF
Natural Resources
Peter Goldmark - Commissioner of Public Lands

Caring for
your natural resources
... now and forever

July 19, 2010

Stephen Posner
Energy Facility Site Evaluation Council
905 Plum Street
Olympia, Washington 98504-3172

RE: DNR Comments on Whistling Ridge DEIS

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FPA conversion permits and DNR surface mining reclamation permits (SMRP) are required for timber harvest and rock or gravel mining associated with conversion of forest land and the associated building or construction at the wind tower sites. This was not clear in the DEIS and the SMRP was not listed in Table 4-1. For more details as to DNR concerns and specific requests for DEIS corrections or DEIS additions on the topics noted above please see the following text. Staff contacts are also included for more information or questions.

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DNR has fire protection responsibility on a significant portion of the land within the project area. After review of the DEIS, we believe that implementation of the fire related mitigation measures listed in Chapter 3, section 3.6.3 of the DEIS (5/1/2010) would adequately address fire prevention responsibility and response on those lands. Thank you for this consideration.

Contact:

Contact:
Darrel Johnston
Phone: (360) 902-2112
darrel.johnston@dnr.wa.gov

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Issues:

- The EIS appears to adequately address 'Special Status Plant Species.' They appear to have queried appropriate sources of information and to have done on-the-ground surveys at the appropriate times. Thank you for this consideration.
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Add a statement(s?) about the Oregon white oak/Idaho fescue plant community on page 3-74 where the impacts to special status plant species are discussed.

Contact:
John Gamon
(360) 902-1661
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known to vocalize less when around barred owls. This poses a serious problem when the primary means of establishing spotted owl presence is spotted owl vocal response to simulated calls. Hence, vocalization survey results may be unreliable as spotted owls are unlikely to vocalize due to the presence of barred owls, which was the case during the surveys for this project.

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  Hence, the information provided in the Whistling Ridge Energy Project Draft EIS that "...there are no spotted owl-related habitat conservation plans applicable in or near the project area".... is incorrect.

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Request:

Please correct the DEIS text concerning DNR HCP location. You might also reconsider and reword your conclusion that no project impacts are expected to spotted owls.

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Tami Miketa (360) 902-1481
tamara.miketa@dnr.wa.gov

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RECEIVED
JUL 21 2010
ENERGY FACILITY SITE EVALUATION COUNCIL
WR - DEIS
Agency Comment #4

WASHINGTON STATE DEPARTMENT OF
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Peter Goldmark - Commissioner of Public Lands

Caring for your natural resources ... now and forever

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Best Regards,

Simon M. Kihia,
Manager, Environmental Review and Analysis

COMMENT LETTER 173

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington Fish and Wildlife Office
510 Desmond Dr. SE, Suite 102
Lacey, Washington 98503

In Reply Refer To:
13410-2010-I-0447

JUL 19 2010

Mr. Andrew Montano
Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208-3621

Subject: Whistling Ridge Energy Project (Your Reference: KEC-4)

Dear Mr. Montano:

This letter responds to your request for consultation under section 7(a)(2) of the Endangered Species Act of 1973, (ESA) as amended (16 U.S.C. 1531 *et seq.*) on the proposed Whistling Ridge Energy Project LLC (Project). Your biological assessment (BA), dated June 8, 2010, was received by the U.S. Fish and Wildlife Service's (Service) Washington Fish and Wildlife Office on June 9, 2010. You requested concurrence with your determination that the Project "may affect, but is not likely to adversely affect" the threatened northern spotted owl (*Strix occidentalis caurina)* (spotted owl). No designated spotted owl critical habitat occurs on or near the Project; therefore, no critical habitat will be affected.

This letter is based on information provided in the BA, the 2009 Final Report "*Results of Northern Owl, Western Gray Squirrel and Northern Goshawk Surveys Conducted for the Whistling Ridge Wind Energy Project*", the Draft Environmental Impact Statement, a field trip to the Project attended by staff of the Service and the Washington Department of Fish and Wildlife on May 14, 2009, and a meeting between Service and Washington Department of Fish and Wildlife staff on August 28, 2009.

Project Location

The proposed Project is located on private land, approximately 7 miles northwest of the city of White Salmon in Skamania County, Washington. The Project encompasses approximately 1,152 acres of land in sections 5, 6, 7, 8, and 18 of Township 3 North, Range 10 East, and in section 13 of Township 3 North, Range 9 East, Willamette Meridian.

TAKE PRIDE IN AMERICA

Summary of the Proposed Action

The Bonneville Power Administration (BPA) is proposing to interconnect up to 70 megawatts (MW) of new wind energy from the proposed Project to the North Bonneville-Midway 230-kilovolt transmission line. The interconnect would occur at a new sub-station to be built about 5 miles west of BPA's Underwood Substation in Skamania County. The interconnect was requested by the Project proponent, SDS Lumber Company, in Bingen, Washington. The SDS Lumber Company has created a new limited liability company called Whistling Ridge Energy LLC (WRE) that would finance, develop, and operate the Project. The Project is expected to operate for at least 30 years. The proposed Project would consist of no more than 50, 1.2 MW- to 2.5- MW wind turbines up to 426 feet tall, as well as infrastructure such as newly constructed and improved roads, transformers, underground energy-collector lines, a substation, and an operations and maintenance facility. The Project area consists of 1,152 acres of mostly commercial forests in various age categories, of which 384 acres would be disturbed by the Project, and all but 61 acres would remain in commercial forest. Most of the property where the turbine strings are planned has been recently clear-cut harvested and will be further disturbed with the development of the turbine pads.

Status of Spotted Owls in the Project Area

Two spotted owl territories are located on Washington State Department of Natural Resources (DNR) and National Forest lands located north of and adjacent to the Project. The site center for the Mill Creek owl (MSNO#0991) is located in Township 4 North, Range 10 East, Section 28 and the site center for the Moss Creek owl (MSNO#1003) is located in Township 4 North, Range 9 East, Section 35. Both of these owl territories are within Washington State's White Salmon Spotted Owl Special Emphasis Area, which provides added protection for spotted owls located on private lands through the Washington State Forest Practices Rules. Both of the 70 acre core areas are located on DNR lands and are provided additional protection from their Habitat Conservation Plan for the State Trust Lands.

The estimated median annual home range size for the spotted owl in this physiographic province is approximately 6,657 acres, which for regulatory purposes is assumed to lie within a 1.8-mile radius circle. Best available science indicates that when the amount of suitable spotted owl habitat within a circle falls below 40 percent, there is a likelihood of "take" under section 9 of the ESA. Each of these territories contains more than 40 percent suitable spotted owl habitat (J. Spadaro pers. com. 2009). A small portion of the Moss Creek circle overlaps the northern end of the Project and contains dispersal habitat and some foraging habitat. However, removal of this small amount of habitat (2 acres) would not reduce the habitat acreage below 40 percent in either territory.

Protocol spotted owl surveys were conducted within these estimated home ranges during the 2003, 2004, 2008, and 2009 breeding seasons. Numerous barred owls *(Strix varia)* were detected, but no spotted owls were detected; however, because of the presence of barred owls with these territories, it is possible that spotted owls were present but did not vocalize. The 2009 surveys followed the Service's revised 2010 protocol to better elicit spotted owl responses in the presence of barred owls (USFWS 2010) (the consultant contacted the U.S. Fish and Wildlife

Service on May 29, 2009, how to call for spotted owls in light of the numerous barred owl detections north of the Project and was provided the changes to the 1992 surveying protocol prior to the release of the 2010 revised protocol on February 18, 2010). However, in 2010 surveys were continued in the Project area. On May 6, 2010, a single male spotted owl was detected while conducting a night visit in the far north edge of the Mill Creek provincial range on DNR property. On May 7th, the biologist conducted a follow-up visit during the daytime. The bird exhibited non-nesting behaviors. On May 29, the biologist conducted a second visit and located what appeared to be the same male owl that was detected on May 7th. The bird on both survey visits took and consumed mice, indicating that it is a single male not supporting young. Spotted owl survey protocol requires 3 sightings of a spotted owl single within the same area within the breeding season to be regarded as a territorial single. This does not change the analyses of effects of the Project to spotted owls, as addressed below, regardless of whether or not a territorial status is established.

Effects from Construction

Approximately 2 acres of spotted owl dispersal habitat (with some patches of foraging habitat) would be removed from the Moss Creek spotted owl site by the construction of the Project from the northern end of the turbine string. This habitat is located at the southern extremity of the circle and is on the edge of the Project that has already been clear-cut by SDS Lumber Company, and would not remove suitable spotted owl habitat below 40 percent in the territory (J. Spadaro pers. com. 2009). The discovery of the new owl in 2010 in the extreme north of the Moss Creek owl circle is located more than 2 miles northwest of the northern most turbine. Because of this, and since the remainder of the Project does not contain suitable spotted owl habitat, we believe that potential effects to spotted owls as a result of habitat loss or degradation is expected to be insignificant.

Effects from Maintenance

The effects of the operation and maintenance of the Project are anticipated to be minor. Maintenance of the Project would occur primarily around the turbine pads, inside the nacelle (the nacelle is the part of the turbine that houses the generator, transmission gears, and the shaft that turns the generator that, on its opposite end, bolts to the hub that the blades attach to) and the blades. In addition, because the landscape will be maintained as young second-growth forest we do not expect disturbance to nesting owls from maintenance because owls are not likely to nest in these younger forest stands (non-habitat).

Risk of Spotted Owl Collision with Wind Turbines

Bird mortality from collisions with wind turbines is well documented and varies greatly by bird species and flight behavior (Smallwood et al. 2009). Spotted owls are forest-dwelling birds that are strongly associated with older conifer forests. Spotted owls primarily use closed-canopy forested habitats throughout their entire lives for nesting, roosting, foraging, and dispersal (Forsman et al. 1984). Because spotted owls are non-migratory, forest-dwelling owls, they are at much lower risk of exposure to wind turbines than many other bird species, which typically use non-forested upland habitats for foraging and migration.

Spotted owls less commonly use recent clear-cuts or burned areas for foraging, but spotted owls do occasionally cross such areas while dispersing between patches of older forest (Forsman et al. 1984; 2002). Although spotted owls do occasionally disperse across open areas, they usually avoid crossing such areas by travelling through corridors of forested habitat (Forsman et al. 1984). The typical flight behavior of the spotted owls is described in the *Birds of North America*:

> "Quick wingbeats interspersed with gliding flight. Not a fast flier. Long flights unusual except during dispersal...Flight labored when attempting to fly to a higher perch or up to nest sites. When gaining altitude in the forest canopy, makes a series of short climbing flights rather than continuous flight. Flights above the forest canopy probably rare except during dispersal. (Gutierrez et al 1995, p. 9)."

During natal dispersal, spotted owls will occasionally cross open areas and, as noted above, may occasionally fly above the level of the forest canopy. Considering spotted owl flight behavior, above-canopy flights are most likely to occur in steep-walled valley settings, where the spotted owl may choose to fly across a valley above the level of the forest canopy on the valley floor. The Whistling Ridge site is located on a forested ridge top that will be maintained as a cleared area for the wind turbines. Spotted owls dispersing across the ridge are more likely to disperse through forested areas along the perimeter of the site, rather than crossing the open areas near the turbines. If a spotted owl were to fly through the turbine array, it would most likely cross at an altitude that is at or below the level of the adjacent forest canopy, and well below the height of the lower of the wind turbine blades (164 – 425 ft. above ground level).

To assess the risk of owl collision with the turbine blades or towers, we convened a review panel of three spotted owl biologists from this office and one spotted owl biologist from the Washington Department of Fish and Wildlife. Based on our knowledge of spotted owl flight behaviors and habitat preferences, the group concluded that the risk of spotted owl collisions with turbines at this site is low.

Considering the strong association of spotted owls with the forest canopy, and spotted owl flight behaviors, we conclude that it is unlikely that spotted owls would cross the Whistling Ridge site at an altitude that would put the owls at risk of collision with turbine blades. Therefore, the risk of a spotted owl collision at this site is considered to be discountable.

Concurrence

Considering the current status of spotted owls in the Project area, and the anticipated Project effects, we concur that the Project is not likely to adversely affect the spotted owl.

This concludes informal consultation pursuant to the regulations implementing the ESA (50 CFR 402.13). This action should be re-analyzed if new information reveals effects of the action that may affect listed species or designated critical habitat in a manner or to an extent not considered in this consultation; if the action is subsequently modified in a manner that causes an effect to a listed species or designated critical habitat that was not considered in this consultation; and/or, if a new species or critical habitat is designated that may be affected by this Project.

Other Comments

While reading through the DEIS for this Project, we found some issues that require your attention. On Page 4-4, first paragraph, last sentence "As described in Section 3.4 Biological Resources, no listed species or critical habitat are anticipated to be affected by the Project. This statement equates to a finding of no effect. To the contrary, the biological assessment prepared by BPA made a finding of "may affect, not likely to adversely affect"; hence, the need for this informal consultation.

On page 4-5, 4.5 Migratory Bird Treaty Act, both the interpretation of this Act and the effects of the Project to avian species are in error. Both avian studies and the analyses in Section 3.4 Biological Resources state that many avian species occur within the Project and that some of those individuals will be killed (collisions with blades or tower) and contrary to the statements provided in the Biological effects Section. Within this context, how is it concluded at 4.5, that impacts to migratory birds could only occur through temporary disturbance during construction?

On page 4-5, 4.7 Bald Eagle Protection Act, the last statement "Because the Project would not involve intentional acts or acts in wanton disregard of bald or golden eagles, this Project is not considered to be subject to compliance with the Act.", is an inaccurate statement. Federal Law Enforcement and the U.S Department of Justice decide whether or not an eagle killed by a project is subject to compliance under this Act.

The Service appreciates your efforts to protect listed species and the habitats on which they depend while meeting your mission to provide the public with reliable electricity. If you have any questions regarding this consultation or your responsibilities under the Act, please contact Jim Michaels of this office at (360) 753-7767.

Sincerely,

James L Michaels

for Ken S. Berg, Manager
Washington Fish and Wildlife Office

LITERATURE CITED

Forsman, E.D., E.C. Meslow, and H.M. Wight. 1984. Distribution and biology of the spotted owl in Oregon. Wildlife Monographs 87:1-64.

Forsman, E.D., R.G. Anthony, J.A. Reid, P.J. Loschl, S.G. Sovern, M. Taylor, B.L. Biswell, A. Ellingson, E.C. Meslow, G.S. Miller, K.A. Swindle, J.A. Thrailkill, F.F. Wagner, and D.E. Seaman. 2002. Natal and breeding dispersal of northern spotted owls. Wildlife Monographs 149:1-35.

Gutierrez, R.J., A.B. Franklin, and W.S. Lahaye. 1995. Spotted owl (Strix occidentalis). In: The birds of North America, No. 179 (A. Poole and F. Gills, eds.). The Academy of Natural Sciences, Philadelphia, and the American Ornithologists' Union, Washington, D.C.

Smallwood, K.S., L. Rugge, and M.L. Morrison. 2009. Influence of behavior on bird mortality in wind energy developments. Journal of Wildlife Management 73(7) 1082-1098.

Spadaro, J. 2009. Personal Communication with Jim Michaels with USFWS at site visit, May 14, 2009.

USFWS (U.S. Fish and Wildlife Service). 2010. Draft 2010 Protocol for Surveying Proposed Management Activities That May Impact Northern Spotted Owls, Version 1.0, February 18, 2010.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington Fish and Wildlife Office
510 Desmond Dr. SE, Suite 102
Lacey, Washington 98503

In Reply Refer To:
13410-2010-I-0447

JUL 19 2010

Mr. Andrew Montano
Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208-3621

Subject: Whistling Ridge Energy Project (Your Reference: KEC-4)

Dear Mr. Montano:

This letter responds to your request for consultation under section 7(a)(2) of the Endangered Species Act of 1973, (ESA) as amended (16 U.S.C. 1531 *et seq.*) on the proposed Whistling Ridge Energy Project LLC (Project). Your biological assessment (BA), dated June 8, 2010, was received by the U.S. Fish and Wildlife Service's (Service) Washington Fish and Wildlife Office on June 9, 2010. You requested concurrence with your determination that the Project "may affect, but is not likely to adversely affect" the threatened northern spotted owl (*Strix occidentalis caurina)* (spotted owl). No designated spotted owl critical habitat occurs on or near the Project; therefore, no critical habitat will be affected.

This letter is based on information provided in the BA, the 2009 Final Report "*Results of Northern Owl, Western Gray Squirrel and Northern Goshawk Surveys Conducted for the Whistling Ridge Wind Energy Project*", the Draft Environmental Impact Statement, a field trip to the Project attended by staff of the Service and the Washington Department of Fish and Wildlife on May 14, 2009, and a meeting between Service and Washington Department of Fish and Wildlife staff on August 28, 2009.

Project Location

The proposed Project is located on private land, approximately 7 miles northwest of the city of White Salmon in Skamania County, Washington. The Project encompasses approximately 1,152 acres of land in sections 5, 6, 7, 8, and 18 of Township 3 North, Range 10 East, and in section 13 of Township 3 North, Range 9 East, Willamette Meridian.

TAKE PRIDE IN AMERICA

Summary of the Proposed Action

The Bonneville Power Administration (BPA) is proposing to interconnect up to 70 megawatts (MW) of new wind energy from the proposed Project to the North Bonneville-Midway 230-kilovolt transmission line. The interconnect would occur at a new sub-station to be built about 5 miles west of BPA's Underwood Substation in Skamania County. The interconnect was requested by the Project proponent, SDS Lumber Company, in Bingen, Washington. The SDS Lumber Company has created a new limited liability company called Whistling Ridge Energy LLC (WRE) that would finance, develop, and operate the Project. The Project is expected to operate for at least 30 years. The proposed Project would consist of no more than 50, 1.2 MW- to 2.5- MW wind turbines up to 426 feet tall, as well as infrastructure such as newly constructed and improved roads, transformers, underground energy-collector lines, a substation, and an operations and maintenance facility. The Project area consists of 1,152 acres of mostly commercial forests in various age categories, of which 384 acres would be disturbed by the Project, and all but 61 acres would remain in commercial forest. Most of the property where the turbine strings are planned has been recently clear-cut harvested and will be further disturbed with the development of the turbine pads.

Status of Spotted Owls in the Project Area

Two spotted owl territories are located on Washington State Department of Natural Resources (DNR) and National Forest lands located north of and adjacent to the Project. The site center for the Mill Creek owl (MSNO#0991) is located in Township 4 North, Range 10 East, Section 28 and the site center for the Moss Creek owl (MSNO#1003) is located in Township 4 North, Range 9 East, Section 35. Both of these owl territories are within Washington State's White Salmon Spotted Owl Special Emphasis Area, which provides added protection for spotted owls located on private lands through the Washington State Forest Practices Rules. Both of the 70 acre core areas are located on DNR lands and are provided additional protection from their Habitat Conservation Plan for the State Trust Lands.

The estimated median annual home range size for the spotted owl in this physiographic province is approximately 6,657 acres, which for regulatory purposes is assumed to lie within a 1.8-mile radius circle. Best available science indicates that when the amount of suitable spotted owl habitat within a circle falls below 40 percent, there is a likelihood of "take" under section 9 of the ESA. Each of these territories contains more than 40 percent suitable spotted owl habitat (J. Spadaro pers. com. 2009). A small portion of the Moss Creek circle overlaps the northern end of the Project and contains dispersal habitat and some foraging habitat. However, removal of this small amount of habitat (2 acres) would not reduce the habitat acreage below 40 percent in either territory.

Protocol spotted owl surveys were conducted within these estimated home ranges during the 2003, 2004, 2008, and 2009 breeding seasons. Numerous barred owls *(Strix varia)* were detected, but no spotted owls were detected; however, because of the presence of barred owls with these territories, it is possible that spotted owls were present but did not vocalize. The 2009 surveys followed the Service's revised 2010 protocol to better elicit spotted owl responses in the presence of barred owls (USFWS 2010) (the consultant contacted the U.S. Fish and Wildlife

Service on May 29, 2009, how to call for spotted owls in light of the numerous barred owl detections north of the Project and was provided the changes to the 1992 surveying protocol prior to the release of the 2010 revised protocol on February 18, 2010). However, in 2010 surveys were continued in the Project area. On May 6, 2010, a single male spotted owl was detected while conducting a night visit in the far north edge of the Mill Creek provincial range on DNR property. On May 7th, the biologist conducted a follow-up visit during the daytime. The bird exhibited non-nesting behaviors. On May 29, the biologist conducted a second visit and located what appeared to be the same male owl that was detected on May 7th. The bird on both survey visits took and consumed mice, indicating that it is a single male not supporting young. Spotted owl survey protocol requires 3 sightings of a spotted owl single within the same area within the breeding season to be regarded as a territorial single. This does not change the analyses of effects of the Project to spotted owls, as addressed below, regardless of whether or not a territorial status is established.

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Approximately 2 acres of spotted owl dispersal habitat (with some patches of foraging habitat) would be removed from the Moss Creek spotted owl site by the construction of the Project from the northern end of the turbine string. This habitat is located at the southern extremity of the circle and is on the edge of the Project that has already been clear-cut by SDS Lumber Company, and would not remove suitable spotted owl habitat below 40 percent in the territory (J. Spadaro pers. com. 2009). The discovery of the new owl in 2010 in the extreme north of the Moss Creek owl circle is located more than 2 miles northwest of the northern most turbine. Because of this, and since the remainder of the Project does not contain suitable spotted owl habitat, we believe that potential effects to spotted owls as a result of habitat loss or degradation is expected to be insignificant.

Effects from Maintenance

The effects of the operation and maintenance of the Project are anticipated to be minor. Maintenance of the Project would occur primarily around the turbine pads, inside the nacelle (the nacelle is the part of the turbine that houses the generator, transmission gears, and the shaft that turns the generator that, on its opposite end, bolts to the hub that the blades attach to) and the blades. In addition, because the landscape will be maintained as young second-growth forest we do not expect disturbance to nesting owls from maintenance because owls are not likely to nest in these younger forest stands (non-habitat).

Risk of Spotted Owl Collision with Wind Turbines

Bird mortality from collisions with wind turbines is well documented and varies greatly by bird species and flight behavior (Smallwood et al. 2009). Spotted owls are forest-dwelling birds that are strongly associated with older conifer forests. Spotted owls primarily use closed-canopy forested habitats throughout their entire lives for nesting, roosting, foraging, and dispersal (Forsman et al. 1984). Because spotted owls are non-migratory, forest-dwelling owls, they are at much lower risk of exposure to wind turbines than many other bird species, which typically use non-forested upland habitats for foraging and migration.

Spotted owls less commonly use recent clear-cuts or burned areas for foraging, but spotted owls do occasionally cross such areas while dispersing between patches of older forest (Forsman et al. 1984; 2002). Although spotted owls do occasionally disperse across open areas, they usually avoid crossing such areas by travelling through corridors of forested habitat (Forsman et al. 1984). The typical flight behavior of the spotted owls is described in the *Birds of North America*:

> "Quick wingbeats interspersed with gliding flight. Not a fast flier. Long flights unusual except during dispersal...Flight labored when attempting to fly to a higher perch or up to nest sites. When gaining altitude in the forest canopy, makes a series of short climbing flights rather than continuous flight. Flights above the forest canopy probably rare except during dispersal. (Gutierrez et al 1995, p. 9)."

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Considering the strong association of spotted owls with the forest canopy, and spotted owl flight behaviors, we conclude that it is unlikely that spotted owls would cross the Whistling Ridge site at an altitude that would put the owls at risk of collision with turbine blades. Therefore, the risk of a spotted owl collision at this site is considered to be discountable.

Concurrence

Considering the current status of spotted owls in the Project area, and the anticipated Project effects, we concur that the Project is not likely to adversely affect the spotted owl.

This concludes informal consultation pursuant to the regulations implementing the ESA (50 CFR 402.13). This action should be re-analyzed if new information reveals effects of the action that may affect listed species or designated critical habitat in a manner or to an extent not considered in this consultation; if the action is subsequently modified in a manner that causes an effect to a listed species or designated critical habitat that was not considered in this consultation; and/or, if a new species or critical habitat is designated that may be affected by this Project.

Other Comments

While reading through the DEIS for this Project, we found some issues that require your attention. On Page 4-4, first paragraph, last sentence "As described in Section 3.4 Biological Resources, no listed species or critical habitat are anticipated to be affected by the Project. This statement equates to a finding of no effect. To the contrary, the biological assessment prepared by BPA made a finding of "may affect, not likely to adversely affect"; hence, the need for this informal consultation.

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The Service appreciates your efforts to protect listed species and the habitats on which they depend while meeting your mission to provide the public with reliable electricity. If you have any questions regarding this consultation or your responsibilities under the Act, please contact Jim Michaels of this office at (360) 753-7767.

Sincerely,

James L Michaels

for Ken S. Berg, Manager
Washington Fish and Wildlife Office

LITERATURE CITED

Forsman, E.D., E.C. Meslow, and H.M. Wight. 1984. Distribution and biology of the spotted owl in Oregon. Wildlife Monographs 87:1-64.

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WHITE SALMON VALLEY SCHOOLS

KEY TO THE FUTURE

Jerry A. Lewis, Superintendent
District Office
P.O. Box 157
White Salmon, WA 98672
(509) 493-1500
FAX No. (509) 493-2275

RECEIVED

JUL 26 2010

ENERGY FACILITY SITE
EVALUATION COUNCIL

July21, 2010

Jim Luce
State of Washington
Energy Facility Site Evaluation Council
PO Box 43172
Olympia, WA 98504-3172

RE: Whistling Ridge Wind Project

Mr. Luce:

The White Salmon Valley School District Board of Directors understands that wind energy farms are potentially divisive, particularly in the Underwood portion of the school district. However, the Whistling Ridge Wind Project would have the effect of broadening the tax base when paying for school levies and bonds.

This project would add approximately $100-$150 million of new taxable value to the school district. It would lower the levy rate for everyone in the district considerably, thereby reducing everyone's taxes, possibly enabling the district to pass future levies more readily.

Using 2010 levy rates, the amount of reduction per thousand dollars of assessed valuation would range from 16 cents to 23 cents. A homeowner with a home assessed at $250,000 would save between $38.00 and $55.00 per year. A homeowner with a home assessed at $500,000 would save between $76.00 and $111.00 per year. Due to unique characteristics of our school district, we have recently lost important statewide levy equalization funds. As a result of this, and the general reductions in statewide education funding, the approval of levies might be an increasingly important source of revenues to our district in the future.

Economically this project has the potential to benefit the community and the school district by adding revenues, without creating additional demands for services or impacts on the school system.

Sincerely

Jerry A. Lewis
Superintendent

COMMENT LETTER 175

From: Posner, Stephen (UTC) [Sposner@utc.wa.gov]
Sent: Monday, August 30, 2010 3:19 PM
To: Jan Aarts
Subject: FW: SOSA DEIS COMMENTS for WRE: LAND USE SECTION
Attachments: DEIS Comments Aug2010 - land use +5-6-09attached.pdf; MAXEY.EFSEC.LU Consistency letter-F.pdf

Stephen Posner
Energy Facility Site Evaluation Council
P.O. Box 43172
Olympia, WA 98504-3172
(360) 956-2063
stephen.posner@utc.wa.gov

visit the EFSEC website at: www.efsec.wa.gov

-----Original Message-----
From: Posner, Stephen (COM)
Sent: Thursday, August 26, 2010 4:15 PM
To: Posner, Stephen (UTC)
Subject: FW: SOSA DEIS COMMENTS for WRE: LAND USE SECTION

From: Carol[SMTP:[redacted]
Sent: Thursday, August 26, 2010 4:13:59 PM
To: Posner, Stephen (COM); AMMontano@bpa.gov
Cc: Rick Aramburu
Subject: SOSA DEIS COMMENTS for WRE: LAND USE SECTION Auto forwarded by a Rule

Gentlemen,

Attached in pdf:

Comment letter from Mr. Aramburu on behalf of SOSA on the Draft EIS for the Whistling Ridge Energy proposal, and Copy of previous comments submitted May 6, 2009.

Carol Cohoe
[redacted]

This message may be protected by the attorney-client and/or work product privilege. If you received this message in error please notify us and destroy the message. Thank you.
bccts,f

ARAMBURU & EUSTIS, LLP
Attorneys at Law

[redacted]

August 24, 2010

Stephen Posner
Energy Facility Site Manager
Washington EFSEC
905 Plum Street SE, 3rd Floor
PO Box 43712
Olympia WA 98504-3172

Andrew M. Montaño
Environmental Protection Specialist
Bonneville Power Administration
PO Box 3621 KEC-4
905 NE 11th Avenue
Portland OR 97208-3621

Re: Comments on Draft EIS for Whistling Ridge Energy Project DOE EIS - 0419: Recreation and Land Use Section

Dear Messrs. Montaño and Posner:

This office represents Save Our Scenic Area (SOSA), a Washington corporation representing persons interested in the scenic, recreational and natural values of the Columbia Gorge. SOSA's primary mission is to preserve the Columbia River Gorge National Scenic Area view-shed; to further maintain the existing rural and scenic character of Underwood, Washington, and surrounding communities in Washington and Oregon; and work to preserve the intent of the Columbia River Gorge National Scenic Area Act. WRE proposes to construct as many as 50 wind turbines on ridge lines on their property in Skamania County to produce a minimum of 70 MW. I write today to provide comments on the recently issued draft environmental impact statement (DEIS) for the WRE proposal.

In this letter, I provide comments on behalf of SOSA regarding the "Land Use and Recreation" chapter of the DEIS found at Section 3.8 at page 3-134 to 3-155. SOSA's comments will be divided between the recreation and land use sections.

1. RECREATION IMPACTS.

The DEIS provides only a listing of recreational resources in the area with minimal discussion of the impacts that the wind turbine facilities will have on such areas. This discussion is inadequate. The DEIS should not only disclose the affected areas, but also the impacts on such areas.

Of particular concern is the impact that the turbine operations will have on these areas, particularly visual impacts. This section should be expanded to include impacts on key viewing areas within the scenic area and other areas affected by visual and noise impacts from wind turbine operations. Discussion of mitigation measures should be included which describe alternatives of reduction or relocation of turbines as well as alternative site locations.

2. LAND USE REGULATION.

This section of the DEIS includes discussion of applicable land use regulations. The only land use regulations discussed are the Skamania County's comprehensive plan and land use regulations.

EFSEC has previously taken up the issue of land use consistency during proceedings held on May 6, 2009. Comments and briefs were filed by various parties during that time, including SOSA. Instead of making a decision on land use consistency at the time, EFSEC decided that this issue would be passed to the project adjudicative hearings. Accordingly, we find it inconsistent with the Council's responsibility to enter conclusions regarding land use consistency in the DEIS before it hears evidence in adjudicatory hearings. This is plainly prejudgment of a matter before the Council in violation of the appearance of fairness doctrine.

As to the sections of the DEIS dealing with land use regulation, a determination made that the proposal is "consistent" with the Skamania County comprehensive plan and development regulations is erroneous. SOSA has provided comments on that subject in its letter to the Council dated May 6, 2009 which is attached hereto and incorporated by reference herein. In that letter SOSA provided detailed legal authority and factual background that demonstrated that the construction and operation of wind turbines at the location proposed by the applicant is clearly contrary to the 2007 Skamania County Comprehensive Plan. Since the zoning code of the county preceded the 2007 comprehensive plan, it cannot be considered to implement any of its terms.

Fundamentally, Skamania County has never considered whether or not wind turbines are appropriate in any part of the County, much less within the conservancy designation in the comprehensive plan. As described in SOSA's May 6, 2009 letter, consideration of a draft ordinance that might have regulated the wind turbines was abruptly dropped, and never taken up again, by the Skamania County Commissioners after they learned they had to do an environmental impact statement before considering it. The apparent attempt of the DEIS to blame "local interest groups" for keeping the old zoning ordinance in effect is accordingly misplaced. The statement in the DEIS at page 3-145 that the "proposed updates are currently under appeal by local interest groups" is wrong. As noted in SOSA's May 6, 2009 letter attached hereto, Skamania County did not appeal the ruling against it by the Hearing Examiner and her decision is final.

In summary, the proposal is not consistent with local planning and zoning regulations and the findings and conclusions regarding this ISSUE should be revised for the final EIS.

3. FOREST LAND UNDER G.M.A.

In addition, this section of the DEIS fails to discuss or describe the impact of the Growth Management Act, RCW ch. 36.70A and its regulations on the subject proposal. Though Skamania County is not a county required to plan under GMA, it is required by GMA to designate natural resource land, including:

> (b) Forest lands that are not already characterized by urban growth and that have long-term significance for the commercial production of timber[.]

RCW 36.70A.170. The purpose of such designation is to assure that forest lands of long term commercial significance will be protected by appropriate land use regulation.

It is apparent from the discussion in the EIS that the project site meets the definition of forest lands of long term commercial significance. As the DEIS indicates:

> This site has been in commercial forestry use for the last century, during which the site has been logged over a series of approximately 50 year rotations.

DEIS at page 2-18. See also DEIS at page 1-9, "the site has a long history of commercial logging . . . "

The reason that forest lands are required to be identified is that such lands are intended to be protected and preserved from nonforestry uses. In the present case, industrial wind turbines are intended to cover significant portions of this commercial forest land, contrary to GMA's directives.

Further, this proposal is the first, or one of the first, to be sited in the timbered forest lands near the Columbia Gorge. Under these circumstances, the FEIS must consider whether this project will serve as a precedent for other or future projects impacting the scenic values of the Gorge and forested areas.

Finally, the DEIS at page 3-151 says that there will be no "changes to existing land uses, land use activities or development patterns." This conclusionary statement is unsupported by any objective evidence and is incorrect. It is well known that the placement of industrial wind turbines has a significant adverse impact on residential uses and tourism activities. This is true for most wind turbine locations, but is especially true in areas highly valued for scenic resources, including the Columbia Gorge, which

are prized for their aesthetic surroundings. Much more detailed analysis is required for adequate consideration of these issues.

4. SOLAR ENERGY FACILITY

The DEIS discusses only the development of the site for wind energy facilities. The consideration of alternatives should be expanded to consider other alternate energy sources usch as solar energy. Recently, a proposal for a 75 MW solar reserve has been made in Kittitas County (the Teamaway Solar Reserve, or "TSR"). The proposal will consist of approximately 145 acres for photovoltaic solar panels spread out over 900 acres. Such a proposal would reduce visual impacts and eliminate the noise impacts associated with wind turbine facilities, as well as eliminating the need for transportation of large towers and blades for wind turbines. This alternative should be fully considered in the DFEIS or FEIS.

Thank you for this opportunity to comment on the DEIS. SOSA trusts that the FEIS will provide facts and analysis discussed herein.

Sincerely yours,

ARAMBURU & EUSTIS, LLP

J. Richard Aramburu

JRA:cc
cc: Client

ARAMBURU & EUSTIS LLP

[redacted]

May 6, 2009

Allen Fiksdal, Manager
Energy Site Facility Site Evaluation Council
905 Plum Street SE, 3rd Floor
PO Box 43712
Olympia WA 98504-3172

Skamania County
Community Development Department
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Re: Certificate of Land Use Consistency Review for
Whistling Ridge Wind Energy Project

Dear EFSEC:

This office represents the Save Our Scenic Area (SOSA), a Washington non-profit corporation concerned with the preservation of scenic, recreational and residential values and assets in the Columbia Gorge.

SOSA has closely followed the proposal of SDS Timber Company's Saddleback wind turbine proposal since its public announcement in late 2007. SDS changed the name of the proposal to the "Whistling Ridge Energy Project" (herein "WREP") when it applied to EFSEC. Most recently, SOSA was an appellant before the Skamania County Hearing Examiner in a successful challenge to the issuance of a determination of nonsignificance issued by Skamania County for its zoning code revisions. The Hearing Examiner has ruled that an environmental impact statement (EIS) will be required for the adoption of the new zoning code by the County.

SOSA writes today in response to the notice issued by EFSEC of a hearing on the question of whether the SDS proposal is consistent with local land use plans and zoning codes. The proposal is for multiple

wind turbines (50) on property located in eastern Skamania County. As will be demonstrated herein, the WREP proposal is not consistent with local zoning and there is no basis upon which EFSEC should attempt to preempt this local zoning.

1. STRUCTURE OF SKAMANIA COUNTY PLANNING AND ZONING.

Skamania County planning and zoning is governed by RCW 36.70, the County Planning Enabling Act. It is not one of the counties governed by the Growth Management Act RCW ch. 36.70A (GMA) and has not exercised the option to become a GMA county.

Skamania County first adopted a comprehensive plan in 1977, which was revised in 1991 with the creation of the Columbia River Gorge National Scenic Area (the "Scenic Area"). The 1977 Comprehensive Plan ("the 1977 Plan") is attached hereto as Attachment A. As will be described below, Skamania County recently (June, 2007) adopted a completely revised Comprehensive Plan, referenced herein as the "2007 Plan."

The County originally adopted a zoning code and map in 1985, which has been amended at various times over the years, the most recent of which was by Ordinance 2005-02 in 2005. The existing zoning code would presumably be consistent with the then adopted comprehensive plan from 1977.[1]

After review by the planning commission, Skamania County adopted a new comprehensive plan in June, 2007. In the fall of 2007, Skamania County proposed a new zoning ordinance to implement the new comprehensive plan.

The adoption of the new zoning code requires procedural and substantive compliance with the terms of the State Environmental Policy Act, RCW 43.21C (SEPA). Skamania County has also adopted a local SEPA ordinance that governs the County's procedures under

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[1] The Council is requested to take judicial notice of both the 2007 Plan and the current Skamania County zoning code.

SEPA. Skamania County is required by SEPA and its SEPA ordinance to make a "threshold determination" as to whether to prepare an EIS for its new zoning ordinance. This new zoning ordinance, for the first time in the history of planning and zoning in Skamania County, had specific provisions for large scale wind turbine facilities. [2]

Skamania County's responsible SEPA official, Planning Director Karen Witherspoon, issued a "mitigated determination of nonsignificance" or MDNS for the new zoning code proposal, which included large scale wind turbine regulations. Consistent with the terms of the Skamania County SEPA ordinance, the responsible official's MDNS was appealed to the Skamania County Hearing Examiner by both SOSA and the Friends of the Gorge. The Hearing Examiner held an open record hearing on January 21 and 22 at which the County vigorously defended its MDNS decision.

According to testimony from county officials at the hearing before the County's Hearing Examiner, representative of SDS had met several times with the Skamania County staff to discuss their proposed Saddleback project, but never submitted an application. BPA officials also were in attendance at such meetings according to Ms. Witherspoon's testimony.

On February 19, 2009, the Hearing Examiner entered her decision reversing the MDNS issued by the Responsible Official. See Attachment B hereto. As may be seen from the Findings and Decision, the testimony at the hearing focused on the adverse environmental impacts from wind turbines, centering on SDS's Saddleback proposal. That decision was not appealed by the County to Superior Court and is final. Under this ruling, before any decision is made by Skamania County on a zoning code map, an environmental impact statement must be prepared. Because the environmental impact statement must "accompany the proposal through the agency review process" (SEPA), the Skamania County Planning Commission must also reconsider any decisions it makes on the zoning ordinance based on the upcoming EIS.

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[2] A copy of this proposed zoning ordinance is attached to the WREP application as Appendix F.

As of the date of this submission, no steps have been taken by Skamania County to prepare an environmental impact statement on its proposed zoning code and map.

2. THE WIND TURBINE PROPOSAL IS NOT CONSISTENT WITH THE EXISTING COMPREHENSIVE PLAN.

As noted above, Skamania County adopted a new comprehensive plan for the County in June, 2007. That ordinance replaced a now 30 year old comprehensive plan. See the 2007 Plan at 7.

The 2007 Plan adopted three land use designations, Rural I, Rural II and Conservancy. Rural I was intend to "foster the optimum utilization of land within growing areas of the county. . . ." See page 23. Rural I is the only one of the three designations that allows commercial activity and light or heavy industry. The Rural II designation "is intended to provide for rural living without significant encroachment for land used for agricultural and timber." Page 24. The Conservancy designation is "intended to provide for the conservation and management of existing natural resources" and "logging, timber management, agricultural and mineral extraction are the main use activities that take place in this area." 2007 Plan page 25. Importantly, there has been no effort to amend the comprehensive plan since its adoption in June 2007 by the applicant here or any other party. In this regard, it is important to note that the state Growth Management Act requires that all counties designate "natural resource land" pursuant to RCW 36.70A.170 which includes forest, agricultural and mineral lands of "long term commercial significance." The County recognizes its responsibilities under GMA in the comprehensive plan at page 9 of the 2007 Plan. However, the County has not made a formal designation of such lands. The 2007 Plan essentially provides that designation in the Conservancy designation, which meets the RCW 36.70A.170 criteria: "Conservancy areas are intended to conserve and manage existing natural resources in order to maintain a sustained yield and/or utilization." 2007 Plan at page 25. The WREP is located in the Conservancy and Rural II land use designations.

Significantly, there is no mention of allowance for wind turbines or wind energy in the Rural II or Conservancy designations. "Industry" is permitted in the Rural I category, but not in the other two designations. The Conservancy designation includes only the following relating to utilities:

> Public facilities and utilities, such as parks, public water access, libraries, schools, utility substations and telecommunication facilities.

2007 Plan, p. 25-26. The 2007 comprehensive plan does not allow "private" or "semi-public facilities and utilities." Once again, the failure to include these uses as "appropriate uses" within the 2007 Plan is significant. These uses were defined in the existing zoning ordinance in the "Definition-Interpretation" section at SCC 21.08.010:

> "Semi-public facilities" means facilities intended for public use which may be owned and operated by a private entity.

That this definition was not incorporated into the 2007 Plan is indicative of the intent of the legislative body not to allow such uses and that they were not included within the 2007 Plan indicates a deliberate exclusion. Further, note that the 2007 Plan does not mention electrical energy facilities at all, indicating such facilities are not allowed.

It cannot be that the failure to mention wind energy facilities or wind turbines was a matter of oversight. As the Skamania County Hearing Examiner found in her MDNS decision, there was interest expressed by the applicant here in developing a wind farm well before the Comprehensive Plan was adopted:

> However, SDS Lumber has approached Skamania County on multiple occasions over the past several years to discuss a possible large-scale wind energy project (Saddleback Project) on its property within the County. Ms. Witherspoon (the Skamania County Planning Director) met with representatives of SDS and entities such as the Bonneville Power Administration on two or three occasions

> for "pre-application meetings" to discuss the permitting requirements for the project. Multiple pre-application meetings have been held because of changes in the development team. The project, if developed, would consist of at least 40 wind turbines. Although the last formal pre-application meeting was approximately two years ago, individuals associated with the project have been involved in the County's code update process and the president of SDS was present at the subject appeal hearing.

Findings, Conclusions and Decision of the Hearing Examiner for Skamania County ("FCD"), Finding 37, page 13. In fact, as the Hearing Examiner found:

> The Bonneville Power Administration (BPA) has produced a map entitled "Current and Proposed Wind Energy Interconnections to BPA Transmission Facilities" (Exhibit D.4). This map depicts the SDS Saddleback project as a proposed wind generation facility of 70 megawatts (MW).

FCD, Finding 38, p. 14. Skamania County and its commissioners have long been aware of the Energy Overlay Zone adopted by the neighboring county to the east (Klickitat); indeed, testimony at the Hearing Examiner hearing on the MDNS revealed that Skamania County was asked by Klickitat County to participate in the EIS process for its overlay zone, but Skamania County declined.

As described herein, the 2007 Comprehensive Plan does not authorize or permit electrical energy or wind turbines within the County. Policy LU6.1 deals with uses authorized under the comprehensive plan:

> Three types of uses should be established for each land use designation under this plan and for any zone established to implement this plan. If any use is not listed as one of the following types of developments, then the use is prohibited within that land use designation.

The Plan goes on to describe uses that may be listed as allowable uses, review uses and conditional uses. Policy LU6.2 specifies that:

> In the development regulations, land uses which are neither allowed without review by the Planning Department, permitted subject to conditions, nor named as a conditional use under a land use designation made in this plan or in an ordinance implementing this plan should be prohibited without proof of a substantial change in circumstances.

As such, uses not described as appropriate under each land use designation are to be prohibited. As applied to the WREP proposal, wind turbines are not mentioned as an allowable, review or conditional use in either the Conservancy or Rural II designations and are thus not allowed.

Under the County Planning Enabling Act, RCW ch. 36.70, a county is required to prepare and adopt a comprehensive plan. RCW 36.70.320 provides that:

> Each planning agency shall prepare a comprehensive plan for the orderly physical development of the county, or any portion thereof, and may include any land outside its boundaries which, in the judgment of the planning agency, relates to planning for the county. The plan shall be referred to as the comprehensive plan, and, after hearings by the commission and approval by motion of the board, shall be certified as the comprehensive plan. Amendments or additions to the comprehensive plan shall be similarly processed and certified

The statute goes on to proscribe that the comprehensive plan will be the basic source of reference when the County reviews any proposed project under RCW 36.70.450:

> After a board has approved by motion and certified all or parts of a comprehensive plan for a county or for any part of a county, the planning agency shall use such plan as the

> basic source of reference and as a guide in reporting upon or recommending any proposed project, public or private, as to its purpose, location, form, alignment and timing. The report of the planning agency on any project shall indicate wherein the proposed project does or does not conform to the purpose of the comprehensive plan and may include proposals which, if effected, would make the project conform. If the planning agency finds that a proposed project reveals the justification or necessity for amending the comprehensive plan or any part of it, it may institute proceedings to accomplish such amendment, and in its report to the board on the project shall note that appropriate amendments to the comprehensive plan, or part thereof, are being initiated.

Unlike the GMA, zoning codes and maps are not required in counties operating under the county enabling act as RCW 36.70.550 provides:

> From time to time, the planning agency may, or if so requested by the board shall, cause to be prepared official controls which, when adopted by ordinance by the board, will further the objectives and goals of the comprehensive plan. The planning agency may also draft such regulations, programs and legislation as may, in its judgment, be required to preserve the integrity of the comprehensive plan and assure its systematic execution, and the planning agency may recommend such plans, regulations, programs and legislation to the board for adoption.

As may be seen above, the 2007 Plan does not permit or allow wind turbine facilities by its terms. The County and this Council must apply the 2007 Plan as the "basic source of reference" in reviewing the SDS proposal and conclude that the present proposal is inconsistent with that plan.

3. PROPOSAL INCONSISTENT WITH SKAMANIA COUNTY ZONING ORDINANCE.

As described above, the proposal is inconsistent with the recently

adopted (June 2007) Skamania County Comprehensive Plan. Notwithstanding this defect, the applicant urges that the proposal is consistent with the existing zoning code. However, the existing zoning ordinance was adopted before the adoption of the 2007 Comprehensive Plan. Neither the Skamania County Planning Commission nor County Commissioners have adopted the existing zoning code as consistent with the 2007 Plan. Accordingly, the policies of the 2007 Comprehensive Plan cannot be applied to that code. Moreover, it is clear that the existing zoning ordinance does not permit the subject proposal.

Under Washington state law, development regulations or the zoning code must be consistent with the adopted Comprehensive Plan:

> 36.70.545. Development regulations--Consistency with comprehensive plan. Beginning July 1, 1992, the development regulations of each county that does not plan under RCW 36.70A.040 shall not be inconsistent with the county's comprehensive plan. For the purposes of this section, "development regulations" has the same meaning as set forth in RCW 36.70A.030.

Accordingly, if the existing development regulations are not consistent with the adopted 2007 Comprehensive Plan, then the zoning regulations are ineffective.

The applicant makes two attempts to demonstrate that its wind turbine proposal is consistent with the existing code, neither of which is persuasive.

This analysis begins with the important fact that the existing zoning code does not make wind turbines, wind energy or wind farms an allowable, review or conditional use in any zone. It is significant that "geothermal energy facilities" are listed as a conditional use in the FOR/AG10 and 20, Rural Estate zones. See SCC 21.56.030, 21.44.030. Indeed, "geothermal energy" is a specific type of an "Alternative energy resource" under the EFSEC statute at RCW 80.50.020(18). This indicates that the county was aware of types of alternate energy facilities, but only chose to allow only "geothermal

energy" as a conditional use, whereas "wind," another specifically listed "alternate energy resource" under RCW 80.50.020(18), is not permitted anywhere. Once again, this is not an oversight as "wind turbines" are specifically mentioned in the current code as exempt from height limitations in SCC 21.70.050. However, wind turbines, wind farms or a use related thereto is not listed as a permitted review use or conditional use in the zoning code. The only conclusion to be reached is that wind turbines are not authorized or permitted under the existing code.

The applicant also argues that Table 2-1 in the 2007 Plan at page 23 declares that certain uses are permissible in certain zones. The applicant states at page 4.2-6 of its application that:

> There are three land use designations outside of the specific subarea plans: Rural I, Rural II, and Conservancy. The project area is designated as "Conservancy." Table 2-1 of the Comprehensive Plan identifies zones that are consistent with the Conservancy designation, including: Residential 10 (R-10), Rural Estates 20 (RES-20), Forest Land 20 (FL 20), Commercial Resource Land 40 (CRL 40), Natural (NAT) and Unmapped (UNM). The project site is located in the FL 20, R-10, and UNM zones, all of which are consistent with the Conservancy designation.

However, Table 2-1 refers not to the current code, but to code that might be adopted after the 2007 Plan was adopted. This is clear from the explanation of the table at page 22:

> Table 2-1 shows the comprehensive plan designations and consistency of each potential zoning classification. The Plan Designation to Zoning Classification table is provided to identify those zoning districts that are consistent with each plan designation. Those districts, which are not consistent with the plan designation, are not permitted within the plan designation. This information is necessary to determine when, where and under what circumstances these designations should be applied in the future.

(Emphasis supplied). Thus the table references "potential" and "future" zoning classifications, not ones under the existing code. This is further demonstrated by the fact that the zoning classifications in Table 2-1 do not refer to the existing code, but to future code classifications. Thus, the "Commercial Resource Land 40" zone is a potential new zone as referenced in the draft zoning ordinance at Appendix F to the application. Under the existing code, the like zone is the Resource Production Zone or (FOR/AG20) zone, which is not mentioned in Table 2.1.

Thus Table 2-1 does not establish consistency with the existing code, but serves as a guide to a new zoning code, which has not yet been adopted and cannot be until an environmental impact statement is prepared under the Hearing Examiner's ruling.

The applicant argues that wind turbines are allowed as a use under the terms of the "Unmapped" area of the code. However, the terms of the 2007 Comprehensive Plan specifically provide that if a use is not listed as a conditional or allowable use within the land use designation under the plan then it will be prohibited. See discussion above and 2007 Plan at pages 30-31. The 2007 Comprehensive Plan also specifically provides under Policy LU2.6 that: "Building permits, septic tank permits, or other development permits issued by the County for any project <u>will be in conformance with this Comprehensive Plan</u>." (Emphasis supplied.) Since the "Unmapped" areas do not have a specific zone designation they must be regulated by the designation given by the 2007 Plan.

In addition, to determine the meaning of language within the 2007 comprehensive plan, it is useful to review the 1977 comprehensive plan it replaced. A copy of that plan is Attachment A hereto. That plan had identical land use designations, Rural 1, Rural 2 and Conservancy. See pages 91-92. Importantly, the 1977 comprehensive plan "Conservancy" designation provided:

> The following inappropriate uses may be allowed on a conditional or temporary basis:
>
> a. Industrial
> b. Commercial

See page 92. The "NOTE" at the bottom of page 92 states:

> Land uses which are considered by this plan to be inappropriate, may be established in Rural 2 and Conservancy land use areas, subject to public review and approval by the Board of County Commissioners. Such uses might include light industrial facilities, small commercial businesses, airstrips, portable sawmills, and other wood processing equipment.

(Emphasis in original). When the 2007 comprehensive plan was adopted, it retained verbatim the sentence setting the purpose and objective:

> "Conservancy areas are intended to conserve and manage existing natural resources in order to maintain a sustained resource yield and/or utilization."

Compare page 25 of the 2007 comprehensive plan with page 92 of the 1977 comprehensive plan. However, the 2007 comprehensive plan removed any allowance for "Industrial" or "Commercial" uses either as permitted, review or conditional uses in the Conservancy designation.

The inclusion in the 1977 Plan of the "inappropriate" industrial and commercial uses also explains why the "Unmapped" zone (guided by the 1977 Plan) allowed uses which were "not nuisances," to take account of their characterization as "inappropriate." However, with the adoption of the 2007 comprehensive plan, and the elimination of any possibility of any "inappropriate uses," allowance of uses that were not nuisances became inconsistent with the comprehensive plan and thus illegal.

In addition, the applicant contends that its private wind turbine proposal should be considered "semi-public facilities and utilities" and thus an allowable conditional use in the existing FOR/AG10 and 20 zones. However, the Comprehensive Plan says that "Public Facilities and Utilities" (emphasis supplied) are allowed in the Conservancy and Rural II Land Use Designations, not "Semi-public Facilities and Utilities." Since both of these uses are defined terms in the existing

code, it is very clear that when the Commissioners chose to include only one in the comprehensive plan, it was a deliberate decision. In addition, the 1977 plan made specific provisions in the Rural 2 zone for "Semi-public" uses. See page 91. "Semi-public" uses were specifically eliminated from the 2007 comprehensive plan in all land use designations, including "Conservancy." See 2007 Plan, p. 24-26. Further, the provision in the comprehensive plan gives examples of the kinds of "public facilities and utilities" which are appropriate in the zone "such as parks, public water access, libraries, schools, utility substations and telecommunication facilities." It cannot be said up to 50, 425 foot tall wind turbines as the WREP would intend, with an extensive road network, can be equated to such modest and common place uses as parks, public accesses and schools. If these were intended to include wind turbines, wind farms and other alternative energy facilities, the comprehensive plan would have said so by simply adding a definition of such uses. Of course if there was a proposal to include large wind farms within the 2007 Plan, it would have likely ignited significant controversy.

In essence, inclusion of a large scale wind farm as a "facility and utility" permissible in the Conservancy designation is a de facto amendment of the comprehensive plan. It does so without adherence to the requirement that the planning commission first review the comprehensive plan or any amendments under RCW 36.70.320 and .410, that there be a public hearing and a final decision by the Commissioners. RCW 36.70.380 and .420. In addition, the inclusion of wind turbine or other facilities in the comprehensive plan would have required new SEPA compliance. Given that the inclusion in the zoning code of provisions for wind farms has resulted in the requirement for a environmental impact statement, the same would likely be true for the comprehensive plan adoption.

In addition to the foregoing, the issue of consistency between the existing zoning code and the comprehensive plan arose in the hearing before the Skamania County on the appeal of SOSA and Friends challenging the County MDNS for the new zoning code. SOSA in particular alleged that the 2007 Comprehensive Plan was inconsistent with the proposed zoning ordinance. In response, the County argued that the allowance of wind turbines in the proposed

zoning ordinance did not have a significant impact because wind turbines were already allowed. This issue was resolved in favor of SOSA when the Hearing Examiner found:

> The 2007 Comprehensive Plan does not contemplate the type of energy facilities described in the Planning Commission Recommended Draft.

FCD, Finding 18, page 8. As an issue regarding the comprehensive plan, which was actually litigated between the County, SOSA and Friends, the County is now prevented from contesting this conclusion under the doctrine of claim preclusion or *res judicata*. Washington law is clear that *res judicata* applies to administrative proceedings:

> *Res judicata*, modernly called claim preclusion, P. Trautman, Claim and Issue Preclusion in Civil Litigation in Washington, 60 Wash.L.Rev. 805 (1985), applies to quasi-judicial decisions by administrative tribunals as well as to judicial decisions by courts. *State v. Dupard*, 93 Wn. 2d 268, 274, 609 P.2d 961 (1980); *Miller v. St. Regis Paper Co.*, 60 Wn. 2d 484, 485, 374 P.2d 675 (1962); see *McCarthy v. Department of Social and Health Servs.*, 110 Wn. 2d 812, 823, 759 P.2d 351 (1988) (collateral estoppel); *Malland v. Department of Retirement Sys.*, 103 Wn. 2d 484, 490, 694 P.2d 16 (1985) (same). The Board's 1985 decision was quasi-judicial because it denied a proposed plat, and an administrative decision denying a proposed plat is quasi-judicial. *Miller v. Port Angeles*, 38 Wn. App. 904, 908, 691 P.2d 229 (1984), review denied, 103 Wn. 2d 1024 (1985); *Lechelt v. Seattle*, 32 Wn. 2d 831, 835, 650 P.2d 240 (1982), review denied, 99 Wn. 2d 1005 (1983); see RCW 58.17.100 (findings of fact required); RCW 58.17.180 (review is by writ of review). Therefore, the Board's 1985 decision was subject to *res judicata* at such time as it became final. *Columbia Rentals, Inc. v. State*, 89 Wn. 2d 819, 821, 576 P.2d 62 (1978) (final judgment is *res judicata*); *Pinkney v. Ayers*, 77 Wn. 2d 795, 796, 466 P.2d 853 (1970) (interlocutory order is not *res judicata).*

Lejeune v. Clallam County, 64 Wn. App. 257, 264-265, 823 P.2d 1144, (1992).

The finding by the Hearing Examiner that the 2007 comprehensive plan did not contemplate the wind energy facilities described in the zoning ordinance is binding on the County. Further, the existing zoning code, even if adopted by the County to implement the 2007 Plan (which it was not), does not permit large scale wind facilities.

5. THE RECOMMENDED DRAFT OF THE PLANNING DEPARTMENT CANNOT BE CONSIDERED BY EFSEC.

At Appendix F of its application, SDS argues that the EFSEC should consider a draft, unadopted zoning code and map. EFSEC will commit error if it considers the proposed code for two reasons.

First, zoning codes do not become effective until they are adopted by the legislative body with jurisdiction. Zoning codes and maps are considered "official controls" under RCW 36.70.02(11):

> (11) "Official controls" means legislatively defined and enacted policies, standards, precise detailed maps and other criteria, all of which control the physical development of a county or any part thereof or any detail thereof, and are the means of translating into regulations and ordinances all or any part of the general objectives of the comprehensive plan. Such official controls may include, but are not limited to, ordinances establishing zoning, subdivision control, platting, and adoption of detailed maps.

See also RCW 36.70.560. RCW 36.70.570 specifically requires that:

> Official controls <u>shall be adopted by ordinance</u> and shall further the purpose and objectives of a comprehensive plan and parts thereof.

(Emphasis supplied). Zoning ordinances and zoning maps may only be

adopted after a public hearing and recommendations by the Planning Commission under RCW 36.70.320 and .420. There is no provision in EFSEC legislation to consider unadopted codes, or ones under consideration.

Second, the Skamania County Hearing Examiner has ruled the MDNS issued by the responsible official in Skamania County was issued in error. The ruling of the Examiner is as follows:

> The Determination of Nonsignificance is reversed, and remanded to the County for preparation of an Environmental Impact Statement for the zoning code map and text amendments.

FCD, p. 29.

Under the terms of SEPA, the EIS when completed "shall accompany the proposal through the agency review processes; . . ." RCW 43.21.030(2)(d). In the present case, the Planning Enabling Act requires that before an agency adopts a zoning ordinance or maps, a public hearing must be held by the Planning Commission under RCW 36.70.580:

> Before recommending an official control or amendment to the board for adoption, the commission shall hold at least one public hearing.

Following the public hearing, the Planning Commission must make a recommendation to the County Commissioners under RCW 36.70.600.

> The recommendation to the board of any official control or amendments thereto by the planning agency shall be by the affirmative vote of not less than a majority of the total members of the commission. Such approval shall be by a recorded motion which shall incorporate the findings of fact of the commission and the reasons for its action and the motion shall refer expressly to the maps, descriptive and other matters intended by the commission to constitute the plan, or amendment, addition or extension thereto.

> The indication of approval by the commission shall be recorded on the map and descriptive matter by the signatures of the chairman and the secretary of the commission and of such others as the commission in its rules may designate.

For SEPA purposes, the "existing agency review process" involves, at a minimum, public hearings before the Planning Commission, a recommendation by the Planning Commission and action by the County Commissioners. Each of these processes will require that a final EIS be prepared and available for those bodies. Thus any action previously taken, or recommendations made, must be reconsidered in light of Hearing Examiner's requirement that an EIS be prepared. Since the County has not yet prepared an EIS on its zoning ordinance, any existing drafts of a proposed ordinance may not be considered by EFSEC.

6. THE ROAD ACCESS TO THE SITE IS NOT PERMITTED BY SCENIC AREA RULES.

The application filed herein describes the improvement and widening of a road that appears to be the primary access to the site. Approximately 2.1 acres of this road are located in the National Scenic Area and are controlled by Skamania County Scenic Area regulations. The Friends of the Columbia River Gorge has addressed this issue in correspondence and SOSA adopts by reference the position stated by Friends on this issue in their submission.

7. SKAMANIA COUNTY CERTIFICATE OF LAND USE CONSISTENCY.

SOSA has just received Skamania County Resolution 2009-22 which purports to adopt a Certificate of Land Use Consistency for the WREP proposal. This Resolution was adopted on May 5, 2007 by the Skamania County Commissioners. Copies of the Resolution and its accompanying 28 page staff analysis were not available prior to adoption. Because of its late adoption, and lack of notice, SOSA is not able to provide a detailed response to the Resolution at this time. Neither county staff nor the commissioners provided notice of the

content of what was intended to be adopted and there were no public hearings on the matter. The Planning Commission for Skamania County was neither contacted or consulted regarding this matter. Accordingly, SOSA requests a two week delay in the close of the record on the land use consistency hearing to provide comments on the county's resolution.

SOSA does have one preliminary comment. As noted above, the County's 2007 comprehensive plan contains no provisions for wind energy facilities in any land use designation. Notwithstanding this obvious deficiency, the County Commissioners proposed a zoning ordinance and map that would allow wind energy facilities in Conservancy designations. The County's decision not to prepare an environmental impact statement on the zoning code and map was appealed to Skamania County's own Hearing Examiner. She not only reversed the MDNS issued by the County (see Attachment B), but also ruled that the "2007 Comprehensive Plan does not contemplate the type of energy facilities [among them large scale wind energy facilities] described in the Planning Commission Recommended Draft." The County did not appeal the Hearing Examiner decision to the Superior Court.

Now, in the letter accompanying the submission of Resolution 2009-22 to this Council, everyone is told that:

> Since this decision (of the Hearing Examiner requiring the environmental impact statement) the map and updates for the Zoning Ordinance project have been permanently placed on hold. It has not been decided whether or not the County will continue with this project or start from scratch when the zoning update process resumes.

May 4, 2009 letter from Karen Witherspoon to EFSEC, page 2.

It is clear that the County, having been denied the approval of wind turbines in legally appropriate processes, has now decided to go through the "back door" to try to legalize large scale wind farms by simply deciding that they are consistent with existing codes. However, as demonstrated above, the adopted comprehensive plan and zoning ordinances do not allow such facilities. It is likely that the County's

actions, as interpretations of land use codes, will be challenged as illegal under the Washington Land Use Petition Act. In the meantime, EFSEC should refuse to consider the county's position on this matter or dismiss it and hold that the proposed project is not consistent with the comprehensive plan and zoning ordinances.

Based on the foregoing, SOSA submits that the WREP is inconsistent with the 2007 Skamania County Comprehensive Plan and current zoning code and EFSEC should so conclude.

Thank you in advance for your consideration of our views.

Sincerely yours,

ARAMBURU & EUSTIS LLP

J. Richard Aramburu

JRA/py
cc: SOSA

WR - DEIS
Public Comment #542

Michelle, Kayce (UTC) **Late**

From: Posner, Stephen (UTC)
Sent: Monday, August 30, 2010 7:44 AM
To: Michelle, Kayce (UTC)
Cc: Talburt, Tammy (UTC)
Subject: FW: SOSA DEIS COMMENTS for WRE: LAND USE SECTION
Attachments: DEIS Comments Aug2010 - land use +5-6-09attached.pdf; MAXEY.EFSEC.LU Consistency letter-F.pdf

Another one. Please process. Thanks.

Stephen Posner
Energy Facility Site Evaluation Council
P.O. Box 43172
Olympia, WA 98504-3172
(360) 956-2063
stephen.posner@utc.wa.gov

visit the EFSEC website at: www.efsec.wa.gov

-----Original Message-----
From: Posner, Stephen (COM)
Sent: Thursday, August 26, 2010 4:15 PM
To: Posner, Stephen (UTC)
Subject: FW: SOSA DEIS COMMENTS for WRE: LAND USE SECTION

From: Carol[SMTP:[redacted]
Sent: Thursday, August 26, 2010 4:13:59 PM
To: Posner, Stephen (COM); AMMontano@bpa.gov
Cc: Rick Aramburu
Subject: SOSA DEIS COMMENTS for WRE: LAND USE SECTION Auto forwarded by a Rule

Gentlemen,

Attached in pdf:

Comment letter from Mr. Aramburu on behalf of SOSA on the Draft EIS for the Whistling Ridge Energy proposal, and Copy of previous comments submitted May 6, 2009.

Carol Cohoe

[redacted]

ARAMBURU & EUSTIS, LLP
Attorneys at Law

[redacted]

August 24, 2010

Stephen Posner
Energy Facility Site Manager
Washington EFSEC
905 Plum Street SE, 3rd Floor
PO Box 43712
Olympia WA 98504-3172

Andrew M. Montaño
Environmental Protection Specialist
Bonneville Power Administration
PO Box 3621 KEC-4
905 NE 11th Avenue
Portland OR 97208-3621

Re: Comments on Draft EIS for Whistling Ridge Energy Project DOE EIS - 0419: Recreation and Land Use Section

Dear Messrs. Montaño and Posner:

This office represents Save Our Scenic Area (SOSA), a Washington corporation representing persons interested in the scenic, recreational and natural values of the Columbia Gorge. SOSA's primary mission is to preserve the Columbia River Gorge National Scenic Area view-shed; to further maintain the existing rural and scenic character of Underwood, Washington, and surrounding communities in Washington and Oregon; and work to preserve the intent of the Columbia River Gorge National Scenic Area Act. WRE proposes to construct as many as 50 wind turbines on ridge lines on their property in Skamania County to produce a minimum of 70 MW. I write today to provide comments on the recently issued draft environmental impact statement (DEIS) for the WRE proposal.

In this letter, I provide comments on behalf of SOSA regarding the "Land Use and Recreation" chapter of the DEIS found at Section 3.8 at page 3-134 to 3-155. SOSA's comments will be divided between the recreation and land use sections.

1. RECREATION IMPACTS.

The DEIS provides only a listing of recreational resources in the area with minimal discussion of the impacts that the wind turbine facilities will have on such areas. This discussion is inadequate. The DEIS should not only disclose the affected areas, but also the impacts on such areas.

Of particular concern is the impact that the turbine operations will have on these areas, particularly visual impacts. This section should be expanded to include impacts on key viewing areas within the scenic area and other areas affected by visual and noise impacts from wind turbine operations. Discussion of mitigation measures should be included which describe alternatives of reduction or relocation of turbines as well as alternative site locations.

2. LAND USE REGULATION.

This section of the DEIS includes discussion of applicable land use regulations. The only land use regulations discussed are the Skamania County's comprehensive plan and land use regulations.

EFSEC has previously taken up the issue of land use consistency during proceedings held on May 6, 2009. Comments and briefs were filed by various parties during that time, including SOSA. Instead of making a decision on land use consistency at the time, EFSEC decided that this issue would be passed to the project adjudicative hearings. Accordingly, we find it inconsistent with the Council's responsibility to enter conclusions regarding land use consistency in the DEIS before it hears evidence in adjudicatory hearings. This is plainly prejudgment of a matter before the Council in violation of the appearance of fairness doctrine.

As to the sections of the DEIS dealing with land use regulation, a determination made that the proposal is "consistent" with the Skamania County comprehensive plan and development regulations is erroneous. SOSA has provided comments on that subject in its letter to the Council dated May 6, 2009 which is attached hereto and incorporated by reference herein. In that letter SOSA provided detailed legal authority and factual background that demonstrated that the construction and operation of wind turbines at the location proposed by the applicant is clearly contrary to the 2007 Skamania County Comprehensive Plan. Since the zoning code of the county preceded the 2007 comprehensive plan, it cannot be considered to implement any of its terms.

Fundamentally, Skamania County has never considered whether or not wind turbines are appropriate in any part of the County, much less within the conservancy designation in the comprehensive plan. As described in SOSA's May 6, 2009 letter, consideration of a draft ordinance that might have regulated the wind turbines was abruptly dropped, and never taken up again, by the Skamania County Commissioners after they learned they had to do an environmental impact statement before considering it. The apparent attempt of the DEIS to blame "local interest groups" for keeping the old zoning ordinance in effect is accordingly misplaced. The statement in the DEIS at page 3-145 that the "proposed updates are currently under appeal by local interest groups" is wrong. As noted in SOSA's May 6, 2009 letter attached hereto, Skamania County did not appeal the ruling against it by the Hearing Examiner and her decision is final.

In summary, the proposal is not consistent with local planning and zoning regulations and the findings and conclusions regarding this ISSUE should be revised for the final EIS.

3. FOREST LAND UNDER G.M.A.

In addition, this section of the DEIS fails to discuss or describe the impact of the Growth Management Act, RCW ch. 36.70A and its regulations on the subject proposal. Though Skamania County is not a county required to plan under GMA, it is required by GMA to designate natural resource land, including:

> (b) Forest lands that are not already characterized by urban growth and that have long-term significance for the commercial production of timber[.]

RCW 36.70A.170. The purpose of such designation is to assure that forest lands of long term commercial significance will be protected by appropriate land use regulation.

It is apparent from the discussion in the EIS that the project site meets the definition of forest lands of long term commercial significance. As the DEIS indicates:

> This site has been in commercial forestry use for the last century, during which the site has been logged over a series of approximately 50 year rotations.

DEIS at page 2-18. See also DEIS at page 1-9, "the site has a long history of commercial logging . . . "

The reason that forest lands are required to be identified is that such lands are intended to be protected and preserved from nonforestry uses. In the present case, industrial wind turbines are intended to cover significant portions of this commercial forest land, contrary to GMA's directives.

Further, this proposal is the first, or one of the first, to be sited in the timbered forest lands near the Columbia Gorge. Under these circumstances, the FEIS must consider whether this project will serve as a precedent for other or future projects impacting the scenic values of the Gorge and forested areas.

Finally, the DEIS at page 3-151 says that there will be no "changes to existing land uses, land use activities or development patterns." This conclusionary statement is unsupported by any objective evidence and is incorrect. It is well known that the placement of industrial wind turbines has a significant adverse impact on residential uses and tourism activities. This is true for most wind turbine locations, but is especially true in areas highly valued for scenic resources, including the Columbia Gorge, which

are prized for their aesthetic surroundings. Much more detailed analysis is required for adequate consideration of these issues.

4. SOLAR ENERGY FACILITY

The DEIS discusses only the development of the site for wind energy facilities. The consideration of alternatives should be expanded to consider other alternate energy sources usch as solar energy. Recently, a proposal for a 75 MW solar reserve has been made in Kittitas County (the Teamaway Solar Reserve, or "TSR"). The proposal will consist of approximately 145 acres for photovoltaic solar panels spread out over 900 acres. Such a proposal would reduce visual impacts and eliminate the noise impacts associated with wind turbine facilities, as well as eliminating the need for transportation of large towers and blades for wind turbines. This alternative should be fully considered in the DFEIS or FEIS.

Thank you for this opportunity to comment on the DEIS. SOSA trusts that the FEIS will provide facts and analysis discussed herein.

Sincerely yours,

ARAMBURU & EUSTIS, LLP

J. Richard Aramburu

JRA:cc
cc: Client

ARAMBURU & EUSTIS LLP

[redacted]

May 6, 2009

Allen Fiksdal, Manager
Energy Site Facility Site Evaluation Council
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PO Box 43712
Olympia WA 98504-3172

Skamania County
Community Development Department
Post Office Box 790
Stevenson WA 98648

Re: Certificate of Land Use Consistency Review for Whistling Ridge Wind Energy Project

Dear EFSEC:

This office represents the Save Our Scenic Area (SOSA), a Washington non-profit corporation concerned with the preservation of scenic, recreational and residential values and assets in the Columbia Gorge.

SOSA has closely followed the proposal of SDS Timber Company's Saddleback wind turbine proposal since its public announcement in late 2007. SDS changed the name of the proposal to the "Whistling Ridge Energy Project" (herein "WREP") when it applied to EFSEC. Most recently, SOSA was an appellant before the Skamania County Hearing Examiner in a successful challenge to the issuance of a determination of nonsignificance issued by Skamania County for its zoning code revisions. The Hearing Examiner has ruled that an environmental impact statement (EIS) will be required for the adoption of the new zoning code by the County.

SOSA writes today in response to the notice issued by EFSEC of a hearing on the question of whether the SDS proposal is consistent with local land use plans and zoning codes. The proposal is for multiple

wind turbines (50) on property located in eastern Skamania County. As will be demonstrated herein, the WREP proposal is not consistent with local zoning and there is no basis upon which EFSEC should attempt to preempt this local zoning.

1. STRUCTURE OF SKAMANIA COUNTY PLANNING AND ZONING.

Skamania County planning and zoning is governed by RCW 36.70, the County Planning Enabling Act. It is not one of the counties governed by the Growth Management Act RCW ch. 36.70A (GMA) and has not exercised the option to become a GMA county.

Skamania County first adopted a comprehensive plan in 1977, which was revised in 1991 with the creation of the Columbia River Gorge National Scenic Area (the "Scenic Area"). The 1977 Comprehensive Plan ("the 1977 Plan") is attached hereto as Attachment A. As will be described below, Skamania County recently (June, 2007) adopted a completely revised Comprehensive Plan, referenced herein as the "2007 Plan."

The County originally adopted a zoning code and map in 1985, which has been amended at various times over the years, the most recent of which was by Ordinance 2005-02 in 2005. The existing zoning code would presumably be consistent with the then adopted comprehensive plan from 1977.[1]

After review by the planning commission, Skamania County adopted a new comprehensive plan in June, 2007. In the fall of 2007, Skamania County proposed a new zoning ordinance to implement the new comprehensive plan.

The adoption of the new zoning code requires procedural and substantive compliance with the terms of the State Environmental Policy Act, RCW 43.21C (SEPA). Skamania County has also adopted a local SEPA ordinance that governs the County's procedures under

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[1] The Council is requested to take judicial notice of both the 2007 Plan and the current Skamania County zoning code.

SEPA. Skamania County is required by SEPA and its SEPA ordinance to make a "threshold determination" as to whether to prepare an EIS for its new zoning ordinance. This new zoning ordinance, for the first time in the history of planning and zoning in Skamania County, had specific provisions for large scale wind turbine facilities. [2]

Skamania County's responsible SEPA official, Planning Director Karen Witherspoon, issued a "mitigated determination of nonsignificance" or MDNS for the new zoning code proposal, which included large scale wind turbine regulations. Consistent with the terms of the Skamania County SEPA ordinance, the responsible official's MDNS was appealed to the Skamania County Hearing Examiner by both SOSA and the Friends of the Gorge. The Hearing Examiner held an open record hearing on January 21 and 22 at which the County vigorously defended its MDNS decision.

According to testimony from county officials at the hearing before the County's Hearing Examiner, representative of SDS had met several times with the Skamania County staff to discuss their proposed Saddleback project, but never submitted an application. BPA officials also were in attendance at such meetings according to Ms. Witherspoon's testimony.

On February 19, 2009, the Hearing Examiner entered her decision reversing the MDNS issued by the Responsible Official. See Attachment B hereto. As may be seen from the Findings and Decision, the testimony at the hearing focused on the adverse environmental impacts from wind turbines, centering on SDS's Saddleback proposal. That decision was not appealed by the County to Superior Court and is final. Under this ruling, before any decision is made by Skamania County on a zoning code map, an environmental impact statement must be prepared. Because the environmental impact statement must "accompany the proposal through the agency review process" (SEPA), the Skamania County Planning Commission must also reconsider any decisions it makes on the zoning ordinance based on the upcoming EIS.

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[2] A copy of this proposed zoning ordinance is attached to the WREP application as Appendix F.

As of the date of this submission, no steps have been taken by Skamania County to prepare an environmental impact statement on its proposed zoning code and map.

2. THE WIND TURBINE PROPOSAL IS NOT CONSISTENT WITH THE EXISTING COMPREHENSIVE PLAN.

As noted above, Skamania County adopted a new comprehensive plan for the County in June, 2007. That ordinance replaced a now 30 year old comprehensive plan. See the 2007 Plan at 7.

The 2007 Plan adopted three land use designations, Rural I, Rural II and Conservancy. Rural I was intend to "foster the optimum utilization of land within growing areas of the county. . . ." See page 23. Rural I is the only one of the three designations that allows commercial activity and light or heavy industry. The Rural II designation "is intended to provide for rural living without significant encroachment for land used for agricultural and timber." Page 24. The Conservancy designation is "intended to provide for the conservation and management of existing natural resources" and "logging, timber management, agricultural and mineral extraction are the main use activities that take place in this area." 2007 Plan page 25. Importantly, there has been no effort to amend the comprehensive plan since its adoption in June 2007 by the applicant here or any other party. In this regard, it is important to note that the state Growth Management Act requires that all counties designate "natural resource land" pursuant to RCW 36.70A.170 which includes forest, agricultural and mineral lands of "long term commercial significance." The County recognizes its responsibilities under GMA in the comprehensive plan at page 9 of the 2007 Plan. However, the County has not made a formal designation of such lands. The 2007 Plan essentially provides that designation in the Conservancy designation, which meets the RCW 36.70A.170 criteria: "Conservancy areas are intended to conserve and manage existing natural resources in order to maintain a sustained yield and/or utilization." 2007 Plan at page 25. The WREP is located in the Conservancy and Rural II land use designations.

Significantly, there is no mention of allowance for wind turbines or wind energy in the Rural II or Conservancy designations. "Industry" is permitted in the Rural I category, but not in the other two designations. The Conservancy designation includes only the following relating to utilities:

> Public facilities and utilities, such as parks, public water access, libraries, schools, utility substations and telecommunication facilities.

2007 Plan, p. 25-26. The 2007 comprehensive plan does not allow "private" or "semi-public facilities and utilities." Once again, the failure to include these uses as "appropriate uses" within the 2007 Plan is significant. These uses were defined in the existing zoning ordinance in the "Definition-Interpretation" section at SCC 21.08.010:

> "Semi-public facilities" means facilities intended for public use which may be owned and operated by a private entity.

That this definition was not incorporated into the 2007 Plan is indicative of the intent of the legislative body not to allow such uses and that they were not included within the 2007 Plan indicates a deliberate exclusion. Further, note that the 2007 Plan does not mention electrical energy facilities at all, indicating such facilities are not allowed.

It cannot be that the failure to mention wind energy facilities or wind turbines was a matter of oversight. As the Skamania County Hearing Examiner found in her MDNS decision, there was interest expressed by the applicant here in developing a wind farm well before the Comprehensive Plan was adopted:

> However, SDS Lumber has approached Skamania County on multiple occasions over the past several years to discuss a possible large-scale wind energy project (Saddleback Project) on its property within the County. Ms. Witherspoon (the Skamania County Planning Director) met with representatives of SDS and entities such as the Bonneville Power Administration on two or three occasions

> for "pre-application meetings" to discuss the permitting requirements for the project. Multiple pre-application meetings have been held because of changes in the development team. The project, if developed, would consist of at least 40 wind turbines. Although the last formal pre-application meeting was approximately two years ago, individuals associated with the project have been involved in the County's code update process and the president of SDS was present at the subject appeal hearing.

Findings, Conclusions and Decision of the Hearing Examiner for Skamania County ("FCD"), Finding 37, page 13. In fact, as the Hearing Examiner found:

> The Bonneville Power Administration (BPA) has produced a map entitled "Current and Proposed Wind Energy Interconnections to BPA Transmission Facilities" (Exhibit D.4). This map depicts the SDS Saddleback project as a proposed wind generation facility of 70 megawatts (MW).

FCD, Finding 38, p. 14. Skamania County and its commissioners have long been aware of the Energy Overlay Zone adopted by the neighboring county to the east (Klickitat); indeed, testimony at the Hearing Examiner hearing on the MDNS revealed that Skamania County was asked by Klickitat County to participate in the EIS process for its overlay zone, but Skamania County declined.

As described herein, the 2007 Comprehensive Plan does not authorize or permit electrical energy or wind turbines within the County. Policy LU6.1 deals with uses authorized under the comprehensive plan:

> Three types of uses should be established for each land use designation under this plan and for any zone established to implement this plan. If any use is not listed as one of the following types of developments, then the use is prohibited within that land use designation.

The Plan goes on to describe uses that may be listed as allowable uses, review uses and conditional uses. Policy LU6.2 specifies that:

> In the development regulations, land uses which are neither allowed without review by the Planning Department, permitted subject to conditions, nor named as a conditional use under a land use designation made in this plan or in an ordinance implementing this plan should be prohibited without proof of a substantial change in circumstances.

As such, uses not described as appropriate under each land use designation are to be prohibited. As applied to the WREP proposal, wind turbines are not mentioned as an allowable, review or conditional use in either the Conservancy or Rural II designations and are thus not allowed.

Under the County Planning Enabling Act, RCW ch. 36.70, a county is required to prepare and adopt a comprehensive plan. RCW 36.70.320 provides that:

> Each planning agency shall prepare a comprehensive plan for the orderly physical development of the county, or any portion thereof, and may include any land outside its boundaries which, in the judgment of the planning agency, relates to planning for the county. The plan shall be referred to as the comprehensive plan, and, after hearings by the commission and approval by motion of the board, shall be certified as the comprehensive plan. Amendments or additions to the comprehensive plan shall be similarly processed and certified

The statute goes on to proscribe that the comprehensive plan will be the basic source of reference when the County reviews any proposed project under RCW 36.70.450:

> After a board has approved by motion and certified all or parts of a comprehensive plan for a county or for any part of a county, the planning agency shall use such plan as the

> basic source of reference and as a guide in reporting upon or recommending any proposed project, public or private, as to its purpose, location, form, alignment and timing. The report of the planning agency on any project shall indicate wherein the proposed project does or does not conform to the purpose of the comprehensive plan and may include proposals which, if effected, would make the project conform. If the planning agency finds that a proposed project reveals the justification or necessity for amending the comprehensive plan or any part of it, it may institute proceedings to accomplish such amendment, and in its report to the board on the project shall note that appropriate amendments to the comprehensive plan, or part thereof, are being initiated.

Unlike the GMA, zoning codes and maps are not required in counties operating under the county enabling act as RCW 36.70.550 provides:

> From time to time, the planning agency may, or if so requested by the board shall, cause to be prepared official controls which, when adopted by ordinance by the board, will further the objectives and goals of the comprehensive plan. The planning agency may also draft such regulations, programs and legislation as may, in its judgment, be required to preserve the integrity of the comprehensive plan and assure its systematic execution, and the planning agency may recommend such plans, regulations, programs and legislation to the board for adoption.

As may be seen above, the 2007 Plan does not permit or allow wind turbine facilities by its terms. The County and this Council must apply the 2007 Plan as the "basic source of reference" in reviewing the SDS proposal and conclude that the present proposal is inconsistent with that plan.

3. PROPOSAL INCONSISTENT WITH SKAMANIA COUNTY ZONING ORDINANCE.

As described above, the proposal is inconsistent with the recently

adopted (June 2007) Skamania County Comprehensive Plan. Notwithstanding this defect, the applicant urges that the proposal is consistent with the existing zoning code. However, the existing zoning ordinance was adopted before the adoption of the 2007 Comprehensive Plan. Neither the Skamania County Planning Commission nor County Commissioners have adopted the existing zoning code as consistent with the 2007 Plan. Accordingly, the policies of the 2007 Comprehensive Plan cannot be applied to that code. Moreover, it is clear that the existing zoning ordinance does not permit the subject proposal.

Under Washington state law, development regulations or the zoning code must be consistent with the adopted Comprehensive Plan:

> 36.70.545. Development regulations--Consistency with comprehensive plan. Beginning July 1, 1992, the development regulations of each county that does not plan under RCW 36.70A.040 shall not be inconsistent with the county's comprehensive plan. For the purposes of this section, "development regulations" has the same meaning as set forth in RCW 36.70A.030.

Accordingly, if the existing development regulations are not consistent with the adopted 2007 Comprehensive Plan, then the zoning regulations are ineffective.

The applicant makes two attempts to demonstrate that its wind turbine proposal is consistent with the existing code, neither of which is persuasive.

This analysis begins with the important fact that the existing zoning code does not make wind turbines, wind energy or wind farms an allowable, review or conditional use in any zone. It is significant that "geothermal energy facilities" are listed as a conditional use in the FOR/AG10 and 20, Rural Estate zones. See SCC 21.56.030, 21.44.030. Indeed, "geothermal energy" is a specific type of an "Alternative energy resource" under the EFSEC statute at RCW 80.50.020(18). This indicates that the county was aware of types of alternate energy facilities, but only chose to allow only "geothermal

energy" as a conditional use, whereas "wind," another specifically listed "alternate energy resource" under RCW 80.50.020(18), is not permitted anywhere. Once again, this is not an oversight as "wind turbines" are specifically mentioned in the current code as exempt from height limitations in SCC 21.70.050. However, wind turbines, wind farms or a use related thereto is not listed as a permitted review use or conditional use in the zoning code. The only conclusion to be reached is that wind turbines are not authorized or permitted under the existing code.

The applicant also argues that Table 2-1 in the 2007 Plan at page 23 declares that certain uses are permissible in certain zones. The applicant states at page 4.2-6 of its application that:

> There are three land use designations outside of the specific subarea plans: Rural I, Rural II, and Conservancy. The project area is designated as "Conservancy." Table 2-1 of the Comprehensive Plan identifies zones that are consistent with the Conservancy designation, including: Residential 10 (R-10), Rural Estates 20 (RES-20), Forest Land 20 (FL 20), Commercial Resource Land 40 (CRL 40), Natural (NAT) and Unmapped (UNM). The project site is located in the FL 20, R-10, and UNM zones, all of which are consistent with the Conservancy designation.

However, Table 2-1 refers not to the current code, but to code that might be adopted after the 2007 Plan was adopted. This is clear from the explanation of the table at page 22:

> Table 2-1 shows the comprehensive plan designations and consistency of each potential zoning classification. The Plan Designation to Zoning Classification table is provided to identify those zoning districts that are consistent with each plan designation. Those districts, which are not consistent with the plan designation, are not permitted within the plan designation. This information is necessary to determine when, where and under what circumstances these designations should be applied in the future.

(Emphasis supplied). Thus the table references "potential" and "future" zoning classifications, not ones under the existing code. This is further demonstrated by the fact that the zoning classifications in Table 2-1 do not refer to the existing code, but to future code classifications. Thus, the "Commercial Resource Land 40" zone is a potential new zone as referenced in the draft zoning ordinance at Appendix F to the application. Under the existing code, the like zone is the Resource Production Zone or (FOR/AG20) zone, which is not mentioned in Table 2.1.

Thus Table 2-1 does not establish consistency with the existing code, but serves as a guide to a new zoning code, which has not yet been adopted and cannot be until an environmental impact statement is prepared under the Hearing Examiner's ruling.

The applicant argues that wind turbines are allowed as a use under the terms of the "Unmapped" area of the code. However, the terms of the 2007 Comprehensive Plan specifically provide that if a use is not listed as a conditional or allowable use within the land use designation under the plan then it will be prohibited. See discussion above and 2007 Plan at pages 30-31. The 2007 Comprehensive Plan also specifically provides under Policy LU2.6 that: "Building permits, septic tank permits, or other development permits issued by the County for any project will be in conformance with this Comprehensive Plan." (Emphasis supplied.) Since the "Unmapped" areas do not have a specific zone designation they must be regulated by the designation given by the 2007 Plan.

In addition, to determine the meaning of language within the 2007 comprehensive plan, it is useful to review the 1977 comprehensive plan it replaced. A copy of that plan is Attachment A hereto. That plan had identical land use designations, Rural 1, Rural 2 and Conservancy. See pages 91-92. Importantly, the 1977 comprehensive plan "Conservancy" designation provided:

> The following inappropriate uses may be allowed on a conditional or temporary basis:
>
> a. Industrial
> b. Commercial

See page 92. The "NOTE" at the bottom of page 92 states:

> Land uses which are considered by this plan to be inappropriate, may be established in Rural 2 and Conservancy land use areas, subject to public review and approval by the Board of County Commissioners. Such uses might include light industrial facilities, small commercial businesses, airstrips, portable sawmills, and other wood processing equipment.

(Emphasis in original). When the 2007 comprehensive plan was adopted, it retained verbatim the sentence setting the purpose and objective:

> "Conservancy areas are intended to conserve and manage existing natural resources in order to maintain a sustained resource yield and/or utilization."

Compare page 25 of the 2007 comprehensive plan with page 92 of the 1977 comprehensive plan. However, the 2007 comprehensive plan removed any allowance for "Industrial" or "Commercial" uses either as permitted, review or conditional uses in the Conservancy designation.

The inclusion in the 1977 Plan of the "inappropriate" industrial and commercial uses also explains why the "Unmapped" zone (guided by the 1977 Plan) allowed uses which were "not nuisances," to take account of their characterization as "inappropriate." However, with the adoption of the 2007 comprehensive plan, and the elimination of any possibility of any "inappropriate uses," allowance of uses that were not nuisances became inconsistent with the comprehensive plan and thus illegal.

In addition, the applicant contends that its private wind turbine proposal should be considered "semi-public facilities and utilities" and thus an allowable conditional use in the existing FOR/AG10 and 20 zones. However, the Comprehensive Plan says that "Public Facilities and Utilities" (emphasis supplied) are allowed in the Conservancy and Rural II Land Use Designations, not "Semi-public Facilities and Utilities." Since both of these uses are defined terms in the existing

code, It is very clear that when the Commissioners chose to include only one in the comprehensive plan, it was a deliberate decision. In addition, the 1977 plan made specific provisions in the Rural 2 zone for "Semi-public" uses. See page 91. "Semi-public" uses were specifically eliminated from the 2007 comprehensive plan in all land use designations, including "Conservancy." See 2007 Plan, p. 24-26. Further, the provision in the comprehensive plan gives examples of the kinds of "public facilities and utilities" which are appropriate in the zone "such as parks, public water access, libraries, schools, utility substations and telecommunication facilities." It cannot be said up to 50, 425 foot tall wind turbines as the WREP would intend, with an extensive road network, can be equated to such modest and common place uses as parks, public accesses and schools. If these were intended to include wind turbines, wind farms and other alternative energy facilities, the comprehensive plan would have said so by simply adding a definition of such uses. Of course if there was a proposal to include large wind farms within the 2007 Plan, it would have likely ignited significant controversy.

In essence, inclusion of a large scale wind farm as a "facility and utility" permissible in the Conservancy designation is a de facto amendment of the comprehensive plan. It does so without adherence to the requirement that the planning commission first review the comprehensive plan or any amendments under RCW 36.70.320 and .410, that there be a public hearing and a final decision by the Commissioners. RCW 36.70.380 and .420. In addition, the inclusion of wind turbine or other facilities in the comprehensive plan would have required new SEPA compliance. Given that the inclusion in the zoning code of provisions for wind farms has resulted in the requirement for a environmental impact statement, the same would likely be true for the comprehensive plan adoption.

In addition to the foregoing, the issue of consistency between the existing zoning code and the comprehensive plan arose in the hearing before the Skamania County on the appeal of SOSA and Friends challenging the County MDNS for the new zoning code. SOSA in particular alleged that the 2007 Comprehensive Plan was inconsistent with the proposed zoning ordinance. In response, the County argued that the allowance of wind turbines in the proposed

zoning ordinance did not have a significant impact because wind turbines were already allowed. This issue was resolved in favor of SOSA when the Hearing Examiner found:

> The 2007 Comprehensive Plan does not contemplate the type of energy facilities described in the Planning Commission Recommended Draft.

FCD, Finding 18, page 8. As an issue regarding the comprehensive plan, which was actually litigated between the County, SOSA and Friends, the County is now prevented from contesting this conclusion under the doctrine of claim preclusion or *res judicata*. Washington law is clear that *res judicata* applies to administrative proceedings:

> *Res judicata*, modernly called claim preclusion, P. Trautman, Claim and Issue Preclusion in Civil Litigation in Washington, 60 Wash.L.Rev. 805 (1985), applies to quasi-judicial decisions by administrative tribunals as well as to judicial decisions by courts. *State v. Dupard*, 93 Wn. 2d 268, 274, 609 P.2d 961 (1980); *Miller v. St. Regis Paper Co.*, 60 Wn. 2d 484, 485, 374 P.2d 675 (1962); see *McCarthy v. Department of Social and Health Servs.*, 110 Wn. 2d 812, 823, 759 P.2d 351 (1988) (collateral estoppel); *Malland v. Department of Retirement Sys.*, 103 Wn. 2d 484, 490, 694 P.2d 16 (1985) (same). The Board's 1985 decision was quasi-judicial because it denied a proposed plat, and an administrative decision denying a proposed plat is quasi-judicial. *Miller v. Port Angeles*, 38 Wn. App. 904, 908, 691 P.2d 229 (1984), review denied, 103 Wn. 2d 1024 (1985); *Lechelt v. Seattle*, 32 Wn. 2d 831, 835, 650 P.2d 240 (1982), review denied, 99 Wn. 2d 1005 (1983); see RCW 58.17.100 (findings of fact required); RCW 58.17.180 (review is by writ of review). Therefore, the Board's 1985 decision was subject to *res judicata* at such time as it became final. *Columbia Rentals, Inc. v. State*, 89 Wn. 2d 819, 821, 576 P.2d 62 (1978) (final judgment is *res judicata*); *Pinkney v. Ayers*, 77 Wn. 2d 795, 796, 466 P.2d 853 (1970) (interlocutory order is not *res judicata).*

Lejeune v. Clallam County, 64 Wn. App. 257, 264-265, 823 P.2d 1144, (1992).

The finding by the Hearing Examiner that the 2007 comprehensive plan did not contemplate the wind energy facilities described in the zoning ordinance is binding on the County. Further, the existing zoning code, even if adopted by the County to implement the 2007 Plan (which it was not), does not permit large scale wind facilities.

5. THE RECOMMENDED DRAFT OF THE PLANNING DEPARTMENT CANNOT BE CONSIDERED BY EFSEC.

At Appendix F of its application, SDS argues that the EFSEC should consider a draft, unadopted zoning code and map. EFSEC will commit error if it considers the proposed code for two reasons.

First, zoning codes do not become effective until they are adopted by the legislative body with jurisdiction. Zoning codes and maps are considered "official controls" under RCW 36.70.02(11):

> (11) "Official controls" means legislatively defined and enacted policies, standards, precise detailed maps and other criteria, all of which control the physical development of a county or any part thereof or any detail thereof, and are the means of translating into regulations and ordinances all or any part of the general objectives of the comprehensive plan. Such official controls may include, but are not limited to, ordinances establishing zoning, subdivision control, platting, and adoption of detailed maps.

See also RCW 36.70.560. RCW 36.70.570 specifically requires that:

> Official controls shall be adopted by ordinance and shall further the purpose and objectives of a comprehensive plan and parts thereof.

(Emphasis supplied). Zoning ordinances and zoning maps may only be

adopted after a public hearing and recommendations by the Planning Commission under RCW 36.70.320 and .420. There is no provision in EFSEC legislation to consider unadopted codes, or ones under consideration.

Second, the Skamania County Hearing Examiner has ruled the MDNS issued by the responsible official in Skamania County was issued in error. The ruling of the Examiner is as follows:

> The Determination of Nonsignificance is reversed, and remanded to the County for preparation of an Environmental Impact Statement for the zoning code map and text amendments.

FCD, p. 29.

Under the terms of SEPA, the EIS when completed "shall accompany the proposal through the agency review processes; . . ." RCW 43.21.030(2)(d). In the present case, the Planning Enabling Act requires that before an agency adopts a zoning ordinance or maps, a public hearing must be held by the Planning Commission under RCW 36.70.580:

> Before recommending an official control or amendment to the board for adoption, the commission shall hold at least one public hearing.

Following the public hearing, the Planning Commission must make a recommendation to the County Commissioners under RCW 36.70.600.

> The recommendation to the board of any official control or amendments thereto by the planning agency shall be by the affirmative vote of not less than a majority of the total members of the commission. Such approval shall be by a recorded motion which shall incorporate the findings of fact of the commission and the reasons for its action and the motion shall refer expressly to the maps, descriptive and other matters intended by the commission to constitute the plan, or amendment, addition or extension thereto.

> The indication of approval by the commission shall be recorded on the map and descriptive matter by the signatures of the chairman and the secretary of the commission and of such others as the commission in its rules may designate.

For SEPA purposes, the "existing agency review process" involves, at a minimum, public hearings before the Planning Commission, a recommendation by the Planning Commission and action by the County Commissioners. Each of these processes will require that a final EIS be prepared and available for those bodies. Thus any action previously taken, or recommendations made, must be reconsidered in light of Hearing Examiner's requirement that an EIS be prepared. Since the County has not yet prepared an EIS on its zoning ordinance, any existing drafts of a proposed ordinance may not be considered by EFSEC.

6. THE ROAD ACCESS TO THE SITE IS NOT PERMITTED BY SCENIC AREA RULES.

The application filed herein describes the improvement and widening of a road that appears to be the primary access to the site. Approximately 2.1 acres of this road are located in the National Scenic Area and are controlled by Skamania County Scenic Area regulations. The Friends of the Columbia River Gorge has addressed this issue in correspondence and SOSA adopts by reference the position stated by Friends on this issue in their submission.

7. SKAMANIA COUNTY CERTIFICATE OF LAND USE CONSISTENCY.

SOSA has just received Skamania County Resolution 2009-22 which purports to adopt a Certificate of Land Use Consistency for the WREP proposal. This Resolution was adopted on May 5, 2007 by the Skamania County Commissioners. Copies of the Resolution and its accompanying 28 page staff analysis were not available prior to adoption. Because of its late adoption, and lack of notice, SOSA is not able to provide a detailed response to the Resolution at this time. Neither county staff nor the commissioners provided notice of the

content of what was intended to be adopted and there were no public hearings on the matter. The Planning Commission for Skamania County was neither contacted or consulted regarding this matter. Accordingly, SOSA requests a two week delay in the close of the record on the land use consistency hearing to provide comments on the county's resolution.

SOSA does have one preliminary comment. As noted above, the County's 2007 comprehensive plan contains no provisions for wind energy facilities in any land use designation. Notwithstanding this obvious deficiency, the County Commissioners proposed a zoning ordinance and map that would allow wind energy facilities in Conservancy designations. The County's decision not to prepare an environmental impact statement on the zoning code and map was appealed to Skamania County's own Hearing Examiner. She not only reversed the MDNS issued by the County (see Attachment B), but also ruled that the "2007 Comprehensive Plan does not contemplate the type of energy facilities [among them large scale wind energy facilities] described in the Planning Commission Recommended Draft." The County did not appeal the Hearing Examiner decision to the Superior Court.

Now, in the letter accompanying the submission of Resolution 2009-22 to this Council, everyone is told that:

> Since this decision (of the Hearing Examiner requiring the environmental impact statement) the map and updates for the Zoning Ordinance project have been permanently placed on hold. It has not been decided whether or not the County will continue with this project or start from scratch when the zoning update process resumes.

May 4, 2009 letter from Karen Witherspoon to EFSEC, page 2.

It is clear that the County, having been denied the approval of wind turbines in legally appropriate processes, has now decided to go through the "back door" to try to legalize large scale wind farms by simply deciding that they are consistent with existing codes. However, as demonstrated above, the adopted comprehensive plan and zoning ordinances do not allow such facilities. It is likely that the County's

actions, as interpretations of land use codes, will be challenged as illegal under the Washington Land Use Petition Act. In the meantime, EFSEC should refuse to consider the county's position on this matter or dismiss it and hold that the proposed project is not consistent with the comprehensive plan and zoning ordinances.

Based on the foregoing, SOSA submits that the WREP is inconsistent with the 2007 Skamania County Comprehensive Plan and current zoning code and EFSEC should so conclude.

Thank you in advance for your consideration of our views.

Sincerely yours,

ARAMBURU & EUSTIS LLP

J. Richard Aramburu

JRA/py
cc: SOSA

Montano,Andrew M - KEC-4

From: Carol [redacted]
Sent: Thursday, August 26, 2010 4:14 PM
To: stephen.posner@commerce.wa.gov; Montano,Andrew M - KEC-4
Cc: Rick Aramburu
Subject: SOSA DEIS COMMENTS for WRE: LAND USE SECTION

Attachments: DEIS Comments Aug2010 - land use +5-6-09attached.pdf; MAXEY.EFSEC.LU Consistency letter-F.pdf

DEIS Comments Aug2010 - land u...

MAXEY.EFSEC.LU Consistency let...

Gentlemen,

Attached in pdf:

Comment letter from Mr. Aramburu on behalf of SOSA on the Draft EIS for the Whistling Ridge Energy proposal, and
Copy of previous comments submitted May 6, 2009.

Carol Cohoe

[redacted]

ARAMBURU & EUSTIS, LLP
Attorneys at Law

[redacted]

August 24, 2010

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Re: Comments on Draft EIS for Whistling Ridge Energy Project DOE EIS - 0419: Recreation and Land Use Section

Dear Messrs. Montaño and Posner:

This office represents Save Our Scenic Area (SOSA), a Washington corporation representing persons interested in the scenic, recreational and natural values of the Columbia Gorge. SOSA's primary mission is to preserve the Columbia River Gorge National Scenic Area view-shed; to further maintain the existing rural and scenic character of Underwood, Washington, and surrounding communities in Washington and Oregon; and work to preserve the intent of the Columbia River Gorge National Scenic Area Act. WRE proposes to construct as many as 50 wind turbines on ridge lines on their property in Skamania County to produce a minimum of 70 MW. I write today to provide comments on the recently issued draft environmental impact statement (DEIS) for the WRE proposal.

In this letter, I provide comments on behalf of SOSA regarding the "Land Use and Recreation" chapter of the DEIS found at Section 3.8 at page 3-134 to 3-155. SOSA's comments will be divided between the recreation and land use sections.

1. RECREATION IMPACTS.

The DEIS provides only a listing of recreational resources in the area with minimal discussion of the impacts that the wind turbine facilities will have on such areas. This discussion is inadequate. The DEIS should not only disclose the affected areas, but also the impacts on such areas.

Of particular concern is the impact that the turbine operations will have on these areas, particularly visual impacts. This section should be expanded to include impacts on key viewing areas within the scenic area and other areas affected by visual and noise impacts from wind turbine operations. Discussion of mitigation measures should be included which describe alternatives of reduction or relocation of turbines as well as alternative site locations.

2. LAND USE REGULATION.

This section of the DEIS includes discussion of applicable land use regulations. The only land use regulations discussed are the Skamania County's comprehensive plan and land use regulations.

EFSEC has previously taken up the issue of land use consistency during proceedings held on May 6, 2009. Comments and briefs were filed by various parties during that time, including SOSA. Instead of making a decision on land use consistency at the time, EFSEC decided that this issue would be passed to the project adjudicative hearings. Accordingly, we find it inconsistent with the Council's responsibility to enter conclusions regarding land use consistency in the DEIS before it hears evidence in adjudicatory hearings. This is plainly prejudgment of a matter before the Council in violation of the appearance of fairness doctrine.

As to the sections of the DEIS dealing with land use regulation, a determination made that the proposal is "consistent" with the Skamania County comprehensive plan and development regulations is erroneous. SOSA has provided comments on that subject in its letter to the Council dated May 6, 2009 which is attached hereto and incorporated by reference herein. In that letter SOSA provided detailed legal authority and factual background that demonstrated that the construction and operation of wind turbines at the location proposed by the applicant is clearly contrary to the 2007 Skamania County Comprehensive Plan. Since the zoning code of the county preceded the 2007 comprehensive plan, it cannot be considered to implement any of its terms.

Fundamentally, Skamania County has never considered whether or not wind turbines are appropriate in any part of the County, much less within the conservancy designation in the comprehensive plan. As described in SOSA's May 6, 2009 letter, consideration of a draft ordinance that might have regulated the wind turbines was abruptly dropped, and never taken up again, by the Skamania County Commissioners after they learned they had to do an environmental impact statement before considering it. The apparent attempt of the DEIS to blame "local interest groups" for keeping the old zoning ordinance in effect is accordingly misplaced. The statement in the DEIS at page 3-145 that the "proposed updates are currently under appeal by local interest groups" is wrong. As noted in SOSA's May 6, 2009 letter attached hereto, Skamania County did not appeal the ruling against it by the Hearing Examiner and her decision is final.

In summary, the proposal is not consistent with local planning and zoning regulations and the findings and conclusions regarding this ISSUE should be revised for the final EIS.

3. FOREST LAND UNDER G.M.A.

In addition, this section of the DEIS fails to discuss or describe the impact of the Growth Management Act, RCW ch. 36.70A and its regulations on the subject proposal. Though Skamania County is not a county required to plan under GMA, it is required by GMA to designate natural resource land, including:

> (b) Forest lands that are not already characterized by urban growth and that have long-term significance for the commercial production of timber[.]

RCW 36.70A.170. The purpose of such designation is to assure that forest lands of long term commercial significance will be protected by appropriate land use regulation.

It is apparent from the discussion in the EIS that the project site meets the definition of forest lands of long term commercial significance. As the DEIS indicates:

> This site has been in commercial forestry use for the last century, during which the site has been logged over a series of approximately 50 year rotations.

DEIS at page 2-18. See also DEIS at page 1-9, "the site has a long history of commercial logging . . . "

The reason that forest lands are required to be identified is that such lands are intended to be protected and preserved from nonforestry uses. In the present case, industrial wind turbines are intended to cover significant portions of this commercial forest land, contrary to GMA's directives.

Further, this proposal is the first, or one of the first, to be sited in the timbered forest lands near the Columbia Gorge. Under these circumstances, the FEIS must consider whether this project will serve as a precedent for other or future projects impacting the scenic values of the Gorge and forested areas.

Finally, the DEIS at page 3-151 says that there will be no "changes to existing land uses, land use activities or development patterns." This conclusionary statement is unsupported by any objective evidence and is incorrect. It is well known that the placement of industrial wind turbines has a significant adverse impact on residential uses and tourism activities. This is true for most wind turbine locations, but is especially true in areas highly valued for scenic resources, including the Columbia Gorge, which

are prized for their aesthetic surroundings. Much more detailed analysis is required for adequate consideration of these issues.

4. SOLAR ENERGY FACILITY

The DEIS discusses only the development of the site for wind energy facilities. The consideration of alternatives should be expanded to consider other alternate energy sources usch as solar energy. Recently, a proposal for a 75 MW solar reserve has been made in Kittitas County (the Teamaway Solar Reserve, or "TSR"). The proposal will consist of approximately 145 acres for photovoltaic solar panels spread out over 900 acres. Such a proposal would reduce visual impacts and eliminate the noise impacts associated with wind turbine facilities, as well as eliminating the need for transportation of large towers and blades for wind turbines. This alternative should be fully considered in the DFEIS or FEIS.

Thank you for this opportunity to comment on the DEIS. SOSA trusts that the FEIS will provide facts and analysis discussed herein.

Sincerely yours,

ARAMBURU & EUSTIS, LLP

J. Richard Aramburu

JRA:cc
cc: Client

ARAMBURU & EUSTIS LLP
[redacted]

May 6, 2009

Allen Fiksdal, Manager
Energy Site Facility Site Evaluation Council
905 Plum Street SE, 3rd Floor
PO Box 43712
Olympia WA 98504-3172

Skamania County
Community Development Department
Post Office Box 790
Stevenson WA 98648

Re: Certificate of Land Use Consistency Review for
Whistling Ridge Wind Energy Project

Dear EFSEC:

This office represents the Save Our Scenic Area (SOSA), a Washington non-profit corporation concerned with the preservation of scenic, recreational and residential values and assets in the Columbia Gorge.

SOSA has closely followed the proposal of SDS Timber Company's Saddleback wind turbine proposal since its public announcement in late 2007. SDS changed the name of the proposal to the "Whistling Ridge Energy Project" (herein "WREP") when it applied to EFSEC. Most recently, SOSA was an appellant before the Skamania County Hearing Examiner in a successful challenge to the issuance of a determination of nonsignificance issued by Skamania County for its zoning code revisions. The Hearing Examiner has ruled that an environmental impact statement (EIS) will be required for the adoption of the new zoning code by the County.

SOSA writes today in response to the notice issued by EFSEC of a hearing on the question of whether the SDS proposal is consistent with local land use plans and zoning codes. The proposal is for multiple

wind turbines (50) on property located in eastern Skamania County. As will be demonstrated herein, the WREP proposal is not consistent with local zoning and there is no basis upon which EFSEC should attempt to preempt this local zoning.

1. STRUCTURE OF SKAMANIA COUNTY PLANNING AND ZONING.

Skamania County planning and zoning is governed by RCW 36.70, the County Planning Enabling Act. It is not one of the counties governed by the Growth Management Act RCW ch. 36.70A (GMA) and has not exercised the option to become a GMA county.

Skamania County first adopted a comprehensive plan in 1977, which was revised in 1991 with the creation of the Columbia River Gorge National Scenic Area (the "Scenic Area"). The 1977 Comprehensive Plan ("the 1977 Plan") is attached hereto as Attachment A. As will be described below, Skamania County recently (June, 2007) adopted a completely revised Comprehensive Plan, referenced herein as the "2007 Plan."

The County originally adopted a zoning code and map in 1985, which has been amended at various times over the years, the most recent of which was by Ordinance 2005-02 in 2005. The existing zoning code would presumably be consistent with the then adopted comprehensive plan from 1977.[1]

After review by the planning commission, Skamania County adopted a new comprehensive plan in June, 2007. In the fall of 2007, Skamania County proposed a new zoning ordinance to implement the new comprehensive plan.

The adoption of the new zoning code requires procedural and substantive compliance with the terms of the State Environmental Policy Act, RCW 43.21C (SEPA). Skamania County has also adopted a local SEPA ordinance that governs the County's procedures under

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[1] The Council is requested to take judicial notice of both the 2007 Plan and the current Skamania County zoning code.

SEPA. Skamania County is required by SEPA and its SEPA ordinance to make a "threshold determination" as to whether to prepare an EIS for its new zoning ordinance. This new zoning ordinance, for the first time in the history of planning and zoning in Skamania County, had specific provisions for large scale wind turbine facilities. [2]

Skamania County's responsible SEPA official, Planning Director Karen Witherspoon, issued a "mitigated determination of nonsignificance" or MDNS for the new zoning code proposal, which included large scale wind turbine regulations. Consistent with the terms of the Skamania County SEPA ordinance, the responsible official's MDNS was appealed to the Skamania County Hearing Examiner by both SOSA and the Friends of the Gorge. The Hearing Examiner held an open record hearing on January 21 and 22 at which the County vigorously defended its MDNS decision.

According to testimony from county officials at the hearing before the County's Hearing Examiner, representative of SDS had met several times with the Skamania County staff to discuss their proposed Saddleback project, but never submitted an application. BPA officials also were in attendance at such meetings according to Ms. Witherspoon's testimony.

On February 19, 2009, the Hearing Examiner entered her decision reversing the MDNS issued by the Responsible Official. See Attachment B hereto. As may be seen from the Findings and Decision, the testimony at the hearing focused on the adverse environmental impacts from wind turbines, centering on SDS's Saddleback proposal. That decision was not appealed by the County to Superior Court and is final. Under this ruling, before any decision is made by Skamania County on a zoning code map, an environmental impact statement must be prepared. Because the environmental impact statement must "accompany the proposal through the agency review process" (SEPA), the Skamania County Planning Commission must also reconsider any decisions it makes on the zoning ordinance based on the upcoming EIS.

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[2] A copy of this proposed zoning ordinance is attached to the WREP application as Appendix F.

As of the date of this submission, no steps have been taken by Skamania County to prepare an environmental impact statement on its proposed zoning code and map.

2. THE WIND TURBINE PROPOSAL IS NOT CONSISTENT WITH THE EXISTING COMPREHENSIVE PLAN.

As noted above, Skamania County adopted a new comprehensive plan for the County in June, 2007. That ordinance replaced a now 30 year old comprehensive plan. See the 2007 Plan at 7.

The 2007 Plan adopted three land use designations, Rural I, Rural II and Conservancy. Rural I was intend to "foster the optimum utilization of land within growing areas of the county. . . ." See page 23. Rural I is the only one of the three designations that allows commercial activity and light or heavy industry. The Rural II designation "is intended to provide for rural living without significant encroachment for land used for agricultural and timber." Page 24. The Conservancy designation is "intended to provide for the conservation and management of existing natural resources" and "logging, timber management, agricultural and mineral extraction are the main use activities that take place in this area." 2007 Plan page 25. Importantly, there has been no effort to amend the comprehensive plan since its adoption in June 2007 by the applicant here or any other party. In this regard, it is important to note that the state Growth Management Act requires that all counties designate "natural resource land" pursuant to RCW 36.70A.170 which includes forest, agricultural and mineral lands of "long term commercial significance." The County recognizes its responsibilities under GMA in the comprehensive plan at page 9 of the 2007 Plan. However, the County has not made a formal designation of such lands. The 2007 Plan essentially provides that designation in the Conservancy designation, which meets the RCW 36.70A.170 criteria: "Conservancy areas are intended to conserve and manage existing natural resources in order to maintain a sustained yield and/or utilization." 2007 Plan at page 25. The WREP is located in the Conservancy and Rural II land use designations.

Significantly, there is no mention of allowance for wind turbines or wind energy in the Rural II or Conservancy designations. "Industry" is permitted in the Rural I category, but not in the other two designations. The Conservancy designation includes only the following relating to utilities:

> Public facilities and utilities, such as parks, public water access, libraries, schools, utility substations and telecommunication facilities.

2007 Plan, p. 25-26. The 2007 comprehensive plan does not allow "private" or "semi-public facilities and utilities." Once again, the failure to include these uses as "appropriate uses" within the 2007 Plan is significant. These uses were defined in the existing zoning ordinance in the "Definition-Interpretation" section at SCC 21.08.010:

> "Semi-public facilities" means facilities intended for public use which may be owned and operated by a private entity.

That this definition was not incorporated into the 2007 Plan is indicative of the intent of the legislative body not to allow such uses and that they were not included within the 2007 Plan indicates a deliberate exclusion. Further, note that the 2007 Plan does not mention electrical energy facilities at all, indicating such facilities are not allowed.

It cannot be that the failure to mention wind energy facilities or wind turbines was a matter of oversight. As the Skamania County Hearing Examiner found in her MDNS decision, there was interest expressed by the applicant here in developing a wind farm well before the Comprehensive Plan was adopted:

> However, SDS Lumber has approached Skamania County on multiple occasions over the past several years to discuss a possible large-scale wind energy project (Saddleback Project) on its property within the County. Ms. Witherspoon (the Skamania County Planning Director) met with representatives of SDS and entities such as the Bonneville Power Administration on two or three occasions

> for "pre-application meetings" to discuss the permitting requirements for the project. Multiple pre-application meetings have been held because of changes in the development team. The project, if developed, would consist of at least 40 wind turbines. Although the last formal pre-application meeting was approximately two years ago, individuals associated with the project have been involved in the County's code update process and the president of SDS was present at the subject appeal hearing.

Findings, Conclusions and Decision of the Hearing Examiner for Skamania County ("FCD"), Finding 37, page 13. In fact, as the Hearing Examiner found:

> The Bonneville Power Administration (BPA) has produced a map entitled "Current and Proposed Wind Energy Interconnections to BPA Transmission Facilities" (Exhibit D.4). This map depicts the SDS Saddleback project as a proposed wind generation facility of 70 megawatts (MW).

FCD, Finding 38, p. 14. Skamania County and its commissioners have long been aware of the Energy Overlay Zone adopted by the neighboring county to the east (Klickitat); indeed, testimony at the Hearing Examiner hearing on the MDNS revealed that Skamania County was asked by Klickitat County to participate in the EIS process for its overlay zone, but Skamania County declined.

As described herein, the 2007 Comprehensive Plan does not authorize or permit electrical energy or wind turbines within the County. Policy LU6.1 deals with uses authorized under the comprehensive plan:

> Three types of uses should be established for each land use designation under this plan and for any zone established to implement this plan. If any use is not listed as one of the following types of developments, then the use is prohibited within that land use designation.

The Plan goes on to describe uses that may be listed as allowable uses, review uses and conditional uses. Policy LU6.2 specifies that:

> In the development regulations, land uses which are neither allowed without review by the Planning Department, permitted subject to conditions, nor named as a conditional use under a land use designation made in this plan or in an ordinance implementing this plan should be prohibited without proof of a substantial change in circumstances.

As such, uses not described as appropriate under each land use designation are to be prohibited. As applied to the WREP proposal, wind turbines are not mentioned as an allowable, review or conditional use in either the Conservancy or Rural II designations and are thus not allowed.

Under the County Planning Enabling Act, RCW ch. 36.70, a county is required to prepare and adopt a comprehensive plan. RCW 36.70.320 provides that:

> Each planning agency shall prepare a comprehensive plan for the orderly physical development of the county, or any portion thereof, and may include any land outside its boundaries which, in the judgment of the planning agency, relates to planning for the county. The plan shall be referred to as the comprehensive plan, and, after hearings by the commission and approval by motion of the board, shall be certified as the comprehensive plan. Amendments or additions to the comprehensive plan shall be similarly processed and certified

The statute goes on to proscribe that the comprehensive plan will be the basic source of reference when the County reviews any proposed project under RCW 36.70.450:

> After a board has approved by motion and certified all or parts of a comprehensive plan for a county or for any part of a county, the planning agency shall use such plan as the

> basic source of reference and as a guide in reporting upon or recommending any proposed project, public or private, as to its purpose, location, form, alignment and timing. The report of the planning agency on any project shall indicate wherein the proposed project does or does not conform to the purpose of the comprehensive plan and may include proposals which, if effected, would make the project conform. If the planning agency finds that a proposed project reveals the justification or necessity for amending the comprehensive plan or any part of it, it may institute proceedings to accomplish such amendment, and in its report to the board on the project shall note that appropriate amendments to the comprehensive plan, or part thereof, are being initiated.

Unlike the GMA, zoning codes and maps are not required in counties operating under the county enabling act as RCW 36.70.550 provides:

> From time to time, the planning agency may, or if so requested by the board shall, cause to be prepared official controls which, when adopted by ordinance by the board, will further the objectives and goals of the comprehensive plan. The planning agency may also draft such regulations, programs and legislation as may, in its judgment, be required to preserve the integrity of the comprehensive plan and assure its systematic execution, and the planning agency may recommend such plans, regulations, programs and legislation to the board for adoption.

As may be seen above, the 2007 Plan does not permit or allow wind turbine facilities by its terms. The County and this Council must apply the 2007 Plan as the "basic source of reference" in reviewing the SDS proposal and conclude that the present proposal is inconsistent with that plan.

3. PROPOSAL INCONSISTENT WITH SKAMANIA COUNTY ZONING ORDINANCE.

As described above, the proposal is inconsistent with the recently

adopted (June 2007) Skamania County Comprehensive Plan. Notwithstanding this defect, the applicant urges that the proposal is consistent with the existing zoning code. However, the existing zoning ordinance was adopted before the adoption of the 2007 Comprehensive Plan. Neither the Skamania County Planning Commission nor County Commissioners have adopted the existing zoning code as consistent with the 2007 Plan. Accordingly, the policies of the 2007 Comprehensive Plan cannot be applied to that code. Moreover, it is clear that the existing zoning ordinance does not permit the subject proposal.

Under Washington state law, development regulations or the zoning code must be consistent with the adopted Comprehensive Plan:

> 36.70.545. Development regulations--Consistency with comprehensive plan. Beginning July 1, 1992, the development regulations of each county that does not plan under RCW 36.70A.040 shall not be inconsistent with the county's comprehensive plan. For the purposes of this section, "development regulations" has the same meaning as set forth in RCW 36.70A.030.

Accordingly, if the existing development regulations are not consistent with the adopted 2007 Comprehensive Plan, then the zoning regulations are ineffective.

The applicant makes two attempts to demonstrate that its wind turbine proposal is consistent with the existing code, neither of which is persuasive.

This analysis begins with the important fact that the existing zoning code does not make wind turbines, wind energy or wind farms an allowable, review or conditional use in any zone. It is significant that "geothermal energy facilities" are listed as a conditional use in the FOR/AG10 and 20, Rural Estate zones. See SCC 21.56.030, 21.44.030. Indeed, "geothermal energy" is a specific type of an "Alternative energy resource" under the EFSEC statute at RCW 80.50.020(18). This indicates that the county was aware of types of alternate energy facilities, but only chose to allow only "geothermal

energy" as a conditional use, whereas "wind," another specifically listed "alternate energy resource" under RCW 80.50.020(18), is not permitted anywhere. Once again, this is not an oversight as "wind turbines" are specifically mentioned in the current code as exempt from height limitations in SCC 21.70.050. However, wind turbines, wind farms or a use related thereto is not listed as a permitted review use or conditional use in the zoning code. The only conclusion to be reached is that wind turbines are not authorized or permitted under the existing code.

The applicant also argues that Table 2-1 in the 2007 Plan at page 23 declares that certain uses are permissible in certain zones. The applicant states at page 4.2-6 of its application that:

> There are three land use designations outside of the specific subarea plans: Rural I, Rural II, and Conservancy. The project area is designated as "Conservancy." Table 2-1 of the Comprehensive Plan identifies zones that are consistent with the Conservancy designation, including: Residential 10 (R-10), Rural Estates 20 (RES-20), Forest Land 20 (FL 20), Commercial Resource Land 40 (CRL 40), Natural (NAT) and Unmapped (UNM). The project site is located in the FL 20, R-10, and UNM zones, all of which are consistent with the Conservancy designation.

However, Table 2-1 refers not to the current code, but to code that might be adopted after the 2007 Plan was adopted. This is clear from the explanation of the table at page 22:

> Table 2-1 shows the comprehensive plan designations and consistency of each potential zoning classification. The Plan Designation to Zoning Classification table is provided to identify those zoning districts that are consistent with each plan designation. Those districts, which are not consistent with the plan designation, are not permitted within the plan designation. This information is necessary to determine when, where and under what circumstances these designations should be applied in the future.

(Emphasis supplied). Thus the table references "potential" and "future" zoning classifications, not ones under the existing code. This is further demonstrated by the fact that the zoning classifications in Table 2-1 do not refer to the existing code, but to future code classifications. Thus, the "Commercial Resource Land 40" zone is a potential new zone as referenced in the draft zoning ordinance at Appendix F to the application. Under the existing code, the like zone is the Resource Production Zone or (FOR/AG20) zone, which is not mentioned in Table 2.1.

Thus Table 2-1 does not establish consistency with the existing code, but serves as a guide to a new zoning code, which has not yet been adopted and cannot be until an environmental impact statement is prepared under the Hearing Examiner's ruling.

The applicant argues that wind turbines are allowed as a use under the terms of the "Unmapped" area of the code. However, the terms of the 2007 Comprehensive Plan specifically provide that if a use is not listed as a conditional or allowable use within the land use designation under the plan then it will be prohibited. See discussion above and 2007 Plan at pages 30-31. The 2007 Comprehensive Plan also specifically provides under Policy LU2.6 that: "Building permits, septic tank permits, or other development permits issued by the County for any project <u>will be in conformance with this Comprehensive Plan</u>." (Emphasis supplied.) Since the "Unmapped" areas do not have a specific zone designation they must be regulated by the designation given by the 2007 Plan.

In addition, to determine the meaning of language within the 2007 comprehensive plan, it is useful to review the 1977 comprehensive plan it replaced. A copy of that plan is Attachment A hereto. That plan had identical land use designations, Rural 1, Rural 2 and Conservancy. See pages 91-92. Importantly, the 1977 comprehensive plan "Conservancy" designation provided:

> The following inappropriate uses may be allowed on a conditional or temporary basis:
>
> a. Industrial
> b. Commercial

See page 92. The "NOTE" at the bottom of page 92 states:

> Land uses which are considered by this plan to be inappropriate, may be established in Rural 2 and Conservancy land use areas, subject to public review and approval by the Board of County Commissioners. Such uses might include light industrial facilities, small commercial businesses, airstrips, portable sawmills, and other wood processing equipment.

(Emphasis in original). When the 2007 comprehensive plan was adopted, it retained verbatim the sentence setting the purpose and objective:

> "Conservancy areas are intended to conserve and manage existing natural resources in order to maintain a sustained resource yield and/or utilization."

Compare page 25 of the 2007 comprehensive plan with page 92 of the 1977 comprehensive plan. However, the 2007 comprehensive plan removed any allowance for "Industrial" or "Commercial" uses either as permitted, review or conditional uses in the Conservancy designation.

The inclusion in the 1977 Plan of the "inappropriate" industrial and commercial uses also explains why the "Unmapped" zone (guided by the 1977 Plan) allowed uses which were "not nuisances," to take account of their characterization as "inappropriate." However, with the adoption of the 2007 comprehensive plan, and the elimination of any possibility of any "inappropriate uses," allowance of uses that were not nuisances became inconsistent with the comprehensive plan and thus illegal.

In addition, the applicant contends that its private wind turbine proposal should be considered "semi-public facilities and utilities" and thus an allowable conditional use in the existing FOR/AG10 and 20 zones. However, the Comprehensive Plan says that "Public Facilities and Utilities" (emphasis supplied) are allowed in the Conservancy and Rural II Land Use Designations, not "Semi-public Facilities and Utilities." Since both of these uses are defined terms in the existing

code, it is very clear that when the Commissioners chose to include only one in the comprehensive plan, it was a deliberate decision. In addition, the 1977 plan made specific provisions in the Rural 2 zone for "Semi-public" uses. See page 91. "Semi-public" uses were specifically eliminated from the 2007 comprehensive plan in all land use designations, including "Conservancy." See 2007 Plan, p. 24-26. Further, the provision in the comprehensive plan gives examples of the kinds of "public facilities and utilities" which are appropriate in the zone "such as parks, public water access, libraries, schools, utility substations and telecommunication facilities." It cannot be said up to 50, 425 foot tall wind turbines as the WREP would intend, with an extensive road network, can be equated to such modest and common place uses as parks, public accesses and schools. If these were intended to include wind turbines, wind farms and other alternative energy facilities, the comprehensive plan would have said so by simply adding a definition of such uses. Of course if there was a proposal to include large wind farms within the 2007 Plan, it would have likely ignited significant controversy.

In essence, inclusion of a large scale wind farm as a "facility and utility" permissible in the Conservancy designation is a de facto amendment of the comprehensive plan. It does so without adherence to the requirement that the planning commission first review the comprehensive plan or any amendments under RCW 36.70.320 and .410, that there be a public hearing and a final decision by the Commissioners. RCW 36.70.380 and .420. In addition, the inclusion of wind turbine or other facilities in the comprehensive plan would have required new SEPA compliance. Given that the inclusion in the zoning code of provisions for wind farms has resulted in the requirement for a environmental impact statement, the same would likely be true for the comprehensive plan adoption.

In addition to the foregoing, the issue of consistency between the existing zoning code and the comprehensive plan arose in the hearing before the Skamania County on the appeal of SOSA and Friends challenging the County MDNS for the new zoning code. SOSA in particular alleged that the 2007 Comprehensive Plan was inconsistent with the proposed zoning ordinance. In response, the County argued that the allowance of wind turbines in the proposed

zoning ordinance did not have a significant impact because wind turbines were already allowed. This issue was resolved in favor of SOSA when the Hearing Examiner found:

> The 2007 Comprehensive Plan does not contemplate the type of energy facilities described in the Planning Commission Recommended Draft.

FCD, Finding 18, page 8. As an issue regarding the comprehensive plan, which was actually litigated between the County, SOSA and Friends, the County is now prevented from contesting this conclusion under the doctrine of claim preclusion or *res judicata*. Washington law is clear that *res judicata* applies to administrative proceedings:

> *Res judicata*, modernly called claim preclusion, P. Trautman, Claim and Issue Preclusion in Civil Litigation in Washington, 60 Wash.L.Rev. 805 (1985), applies to quasi-judicial decisions by administrative tribunals as well as to judicial decisions by courts. *State v. Dupard*, 93 Wn. 2d 268, 274, 609 P.2d 961 (1980); *Miller v. St. Regis Paper Co.*, 60 Wn. 2d 484, 485, 374 P.2d 675 (1962); see *McCarthy v. Department of Social and Health Servs.*, 110 Wn. 2d 812, 823, 759 P.2d 351 (1988) (collateral estoppel); *Malland v. Department of Retirement Sys.*, 103 Wn. 2d 484, 490, 694 P.2d 16 (1985) (same). The Board's 1985 decision was quasi-judicial because it denied a proposed plat, and an administrative decision denying a proposed plat is quasi-judicial. *Miller v. Port Angeles*, 38 Wn. App. 904, 908, 691 P.2d 229 (1984), review denied, 103 Wn. 2d 1024 (1985); *Lechelt v. Seattle*, 32 Wn. 2d 831, 835, 650 P.2d 240 (1982), review denied, 99 Wn. 2d 1005 (1983); see RCW 58.17.100 (findings of fact required); RCW 58.17.180 (review is by writ of review). Therefore, the Board's 1985 decision was subject to *res judicata* at such time as it became final. *Columbia Rentals, Inc. v. State*, 89 Wn. 2d 819, 821, 576 P.2d 62 (1978) (final judgment is *res judicata*); *Pinkney v. Ayers*, 77 Wn. 2d 795, 796, 466 P.2d 853 (1970) (interlocutory order is not *res judicata).*

Lejeune v. Clallam County, 64 Wn. App. 257, 264-265, 823 P.2d 1144, (1992).

The finding by the Hearing Examiner that the 2007 comprehensive plan did not contemplate the wind energy facilities described in the zoning ordinance is binding on the County. Further, the existing zoning code, even if adopted by the County to implement the 2007 Plan (which it was not), does not permit large scale wind facilities.

5. THE RECOMMENDED DRAFT OF THE PLANNING DEPARTMENT CANNOT BE CONSIDERED BY EFSEC.

At Appendix F of its application, SDS argues that the EFSEC should consider a draft, unadopted zoning code and map. EFSEC will commit error if it considers the proposed code for two reasons.

First, zoning codes do not become effective until they are adopted by the legislative body with jurisdiction. Zoning codes and maps are considered "official controls" under RCW 36.70.02(11):

> (11) "Official controls" means legislatively defined and enacted policies, standards, precise detailed maps and other criteria, all of which control the physical development of a county or any part thereof or any detail thereof, and are the means of translating into regulations and ordinances all or any part of the general objectives of the comprehensive plan. Such official controls may include, but are not limited to, ordinances establishing zoning, subdivision control, platting, and adoption of detailed maps.

See also RCW 36.70.560. RCW 36.70.570 specifically requires that:

> Official controls <u>shall be adopted by ordinance</u> and shall further the purpose and objectives of a comprehensive plan and parts thereof.

(Emphasis supplied). Zoning ordinances and zoning maps may only be

adopted after a public hearing and recommendations by the Planning Commission under RCW 36.70.320 and .420. There is no provision in EFSEC legislation to consider unadopted codes, or ones under consideration.

Second, the Skamania County Hearing Examiner has ruled the MDNS issued by the responsible official in Skamania County was issued in error. The ruling of the Examiner is as follows:

> The Determination of Nonsignificance is reversed, and remanded to the County for preparation of an Environmental Impact Statement for the zoning code map and text amendments.

FCD, p. 29.

Under the terms of SEPA, the EIS when completed "shall accompany the proposal through the agency review processes; . . ." RCW 43.21.030(2)(d). In the present case, the Planning Enabling Act requires that before an agency adopts a zoning ordinance or maps, a public hearing must be held by the Planning Commission under RCW 36.70.580:

> Before recommending an official control or amendment to the board for adoption, the commission shall hold at least one public hearing.

Following the public hearing, the Planning Commission must make a recommendation to the County Commissioners under RCW 36.70.600.

> The recommendation to the board of any official control or amendments thereto by the planning agency shall be by the affirmative vote of not less than a majority of the total members of the commission. Such approval shall be by a recorded motion which shall incorporate the findings of fact of the commission and the reasons for its action and the motion shall refer expressly to the maps, descriptive and other matters intended by the commission to constitute the plan, or amendment, addition or extension thereto.

> The indication of approval by the commission shall be recorded on the map and descriptive matter by the signatures of the chairman and the secretary of the commission and of such others as the commission in its rules may designate.

For SEPA purposes, the "existing agency review process" involves, at a minimum, public hearings before the Planning Commission, a recommendation by the Planning Commission and action by the County Commissioners. Each of these processes will require that a final EIS be prepared and available for those bodies. Thus any action previously taken, or recommendations made, must be reconsidered in light of Hearing Examiner's requirement that an EIS be prepared. Since the County has not yet prepared an EIS on its zoning ordinance, any existing drafts of a proposed ordinance may not be considered by EFSEC.

6. THE ROAD ACCESS TO THE SITE IS NOT PERMITTED BY SCENIC AREA RULES.

The application filed herein describes the improvement and widening of a road that appears to be the primary access to the site. Approximately 2.1 acres of this road are located in the National Scenic Area and are controlled by Skamania County Scenic Area regulations. The Friends of the Columbia River Gorge has addressed this issue in correspondence and SOSA adopts by reference the position stated by Friends on this issue in their submission.

7. SKAMANIA COUNTY CERTIFICATE OF LAND USE CONSISTENCY.

SOSA has just received Skamania County Resolution 2009-22 which purports to adopt a Certificate of Land Use Consistency for the WREP proposal. This Resolution was adopted on May 5, 2007 by the Skamania County Commissioners. Copies of the Resolution and its accompanying 28 page staff analysis were not available prior to adoption. Because of its late adoption, and lack of notice, SOSA is not able to provide a detailed response to the Resolution at this time. Neither county staff nor the commissioners provided notice of the

content of what was intended to be adopted and there were no public hearings on the matter. The Planning Commission for Skamania County was neither contacted or consulted regarding this matter. Accordingly, SOSA requests a two week delay in the close of the record on the land use consistency hearing to provide comments on the county's resolution.

SOSA does have one preliminary comment. As noted above, the County's 2007 comprehensive plan contains no provisions for wind energy facilities in any land use designation. Notwithstanding this obvious deficiency, the County Commissioners proposed a zoning ordinance and map that would allow wind energy facilities in Conservancy designations. The County's decision not to prepare an environmental impact statement on the zoning code and map was appealed to Skamania County's own Hearing Examiner. She not only reversed the MDNS issued by the County (see Attachment B), but also ruled that the "2007 Comprehensive Plan does not contemplate the type of energy facilities [among them large scale wind energy facilities] described in the Planning Commission Recommended Draft." The County did not appeal the Hearing Examiner decision to the Superior Court.

Now, in the letter accompanying the submission of Resolution 2009-22 to this Council, everyone is told that:

> Since this decision (of the Hearing Examiner requiring the environmental impact statement) the map and updates for the Zoning Ordinance project have been permanently placed on hold. It has not been decided whether or not the County will continue with this project or start from scratch when the zoning update process resumes.

May 4, 2009 letter from Karen Witherspoon to EFSEC, page 2.

It is clear that the County, having been denied the approval of wind turbines in legally appropriate processes, has now decided to go through the "back door" to try to legalize large scale wind farms by simply deciding that they are consistent with existing codes. However, as demonstrated above, the adopted comprehensive plan and zoning ordinances do not allow such facilities. It is likely that the County's

actions, as interpretations of land use codes, will be challenged as illegal under the Washington Land Use Petition Act. In the meantime, EFSEC should refuse to consider the county's position on this matter or dismiss it and hold that the proposed project is not consistent with the comprehensive plan and zoning ordinances.

Based on the foregoing, SOSA submits that the WREP is inconsistent with the 2007 Skamania County Comprehensive Plan and current zoning code and EFSEC should so conclude.

Thank you in advance for your consideration of our views.

Sincerely yours,

ARAMBURU & EUSTIS LLP

J. Richard Aramburu

JRA/py
cc: SOSA

COMMENT LETTER 176

From: Posner, Stephen (UTC) [Sposner@utc.wa.gov]
Sent: Monday, August 30, 2010 3:20 PM
To: Jan Aarts
Subject: FW: SOSA DEIS Comments on WRE proposal: Alternatives
Attachments: DEIS Comments Aug2010 - alternatives.pdf

Stephen Posner
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visit the EFSEC website at: www.efsec.wa.gov

-----Original Message-----
From: Posner, Stephen (COM)
Sent: Thursday, August 26, 2010 4:57 PM
To: Posner, Stephen (UTC)
Subject: FW: SOSA DEIS Comments on WRE proposal: Alternatives

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From: Carol[SMTP:[redacted]
Sent: Thursday, August 26, 2010 4:56:28 PM
To: Posner, Stephen (COM); AMMontano@bpa.gov
Cc: Rick Aramburu
Subject: SOSA DEIS Comments on WRE proposal: Alternatives Auto forwarded by a Rule

Gentlemen,

Attached please find comments on the DEIS for the Whistling Ridge Energy proposal (with Attachment A).

Carol Cohoe
[redacted]t

bccts,f

ARAMBURU & EUSTIS, LLP
Attorneys at Law

[redacted]

August 26, 2010

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Andrew M. Montaño
Environmental Protection Specialist
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PO Box 3621 KEC-4
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Re: Comments on Draft EIS for Whistling Ridge Energy Project
DOE EIS - 0419: Failure to Consider Alternatives

Dear Messrs. Posner and Montaño:

This office represents Save Our Scenic Area (SOSA), a Washington corporation representing persons interested in the Whistling Ridge Energy Project (WRE). SOSA's primary mission is to preserve the Columbia River Gorge National Scenic Area view-shed; to further maintain the existing rural and scenic character of Underwood, Washington, and surrounding communities in Washington and Oregon; and work to preserve the intent of the Columbia River Gorge National Scenic Area Act. I write today to provide comments on the recently issued draft environmental impact statement (DEIS) for the WRE proposal.

WRE proposes to construct as many as 50 wind turbines on ridge lines on its property in Skamania County to produce a minimum of 70 MW. The project includes the construction and operation of a substation to be owned and operated by BPA that will connect the project to the Federal Columbia River Transmission System (FCRTS or the Grid). As discussed herein the project includes the turbines, the electrical connection system, the necessary infrastructure and the BPA substation. Though this project has been under development for some time, the applicant has identified only a range of wind turbine generators which "would likely range in size from 1.2 to 2.5 MW." DEIS at 1-9. However, the larger capacity turbines have larger diameter rotors (up to 100 meters), so it is unknown what the size of the machines would actually be. The proposal has multiple serious environmental impacts, including severe impacts on the visual surroundings of the Columbia River Gorge National Scenic Area.

A severe deficiency in the EIS is the failure to consider any alternative other than the applicant's minimum 70 MW proposal on its own property. Page 1-13 of the "Alternate Project Locations" includes only sites within the ownership of SDS. On page 1-14, the EIS states that the applicant considered a lesser number of turbines, but rejected such an alternative because it did not fit within SDS's concept of "economic feasibility." The failure to consider either alternate locations or alternate site configurations (with fewer wind turbines) is a fundamental and fatal defect in the DEIS, as was previously pointed out at the public hearing on the document. The responsible official must prepare a supplemental DEIS to address and thoroughly consider reasonable alternatives. This supplemental DEIS should be circulated for comment in the same manner as any DEIS under NEPA/SEPA rules and regulations.

After the DEIS was issued, the EFSEC and BPA issued Council Order No. 848 (June 29, 2010), which acknowledged public comments during the DEIS comment hearing on June 16, 2010 that identified "potentially serious errors in, or omissions from, the draft EIS." See page 2 of Order 848. That order requested that the applicant "incorporate into its direct presentation any information needed to address asserted significant flaws in the DEIS." Order 848 also indicated that the Final Environmental Impact Statement (FEIS) would not be issued before the adjudicative hearings began on December 8, 2010. SOSA and Friends of the Columbia Gorge (Friends) objected to Order 848 on July 8, 2010, requesting that the Council's responsible official require that the FEIS be issued prior to the commencement of the adjudicative hearings.

In its Order 850, the Council responded to the objections of Friends and SOSA. In that order, the Council indicated that:

> The comments [on the DEIS] are reviewed, responses are prepared and then the general agency practice is that the responsible official issues a draft final EIS (DFEIS).
>
> The DFEIS precedes the beginning of the adjudicative hearing. Its information is public and available. The environmental record is received in evidence; its information is available to the parties and the public during the adjudicative hearing. The content of the DFEIS is the equivalent of a FEIS. At the conclusion of the hearing process, the responsible official issues a FEIS, which may incorporate additional information received in the adjudicative hearing.

Order 850 at pages 3-4. Order 850 raises multiple issues regarding the proper procedures under SEPA and NEPA, as well as several unanswered questions, as follows:

1. There are no procedures under SEPA or NEPA by which an agency can issue a "DFEIS." Accordingly, it cannot be considered part of the SEPA or NEPA process.

2. Order 850 does not indicate whether interested parties may comment on the "DFEIS." Given that it is a draft document (though not one authorized by SEPA or NEPA), the DFEIS, if issued, should be properly noticed to agencies and persons who commented on the DEIS. There should be a comment period of a minimum of 45 days on the DFEIS.

3. Order 850 does not explain how the responsible official "may incorporate additional information received in the adjudicative hearing." Will the responsible official go through the entire administrative record to revise the DFEIS? More information is required on how that process will be implemented.

Based on the foregoing, SOSA still believes that the correct procedure to be followed, and one authorized by the rules under both SEPA and NEPA, is to issue a supplemental DEIS (SDEIS) correcting basic errors in the issued DEIS. The SDEIS would be subject to comment by interested agencies and members of the public. Our legal basis for this request is as follows:

The starting point for analysis of the alternative requirement is SEPA itself. RCW 43.21C.030(1)(c)(iii) makes clear that the "detailed statement" (which is now the environmental impact statement requirement) must consider "alternatives to the proposed action." Alternatives are so important under SEPA that each state agency, including EFSEC, has the responsibility to:

> Study, develop and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.

The details of consideration of alternatives in an EIS is found at WAC 197-11-440(5).

Under NEPA Rules, the consideration of alternatives is considered the heart of the EIS:

> Sec. 1502.14 Alternatives including the proposed action.
> This section is the heart of the environmental impact statement. Based on the information and analysis presented in the sections on the Affected Environment (Sec. 1502.15) and the Environmental Consequences (Sec. 1502.16), it should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public. In this section agencies shall:

> (a) Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.
> (b) Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits.
> (c) Include reasonable alternatives not within the jurisdiction of the lead agency.
> (d) Include the alternative of no action.
> (e) Identify the agency's preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference.
> (f) Include appropriate mitigation measures not already included in the proposed action or alternatives.

(Emphasis supplied.)

As noted above, based on the applicant's own opinion of financial feasibility, the DEIS has not considered other alternatives; a position which appears to be unquestioned by the drafters of the DEIS. However, the applicant has not provided any information on financial feasibility and cannot so stricture and limit its proposal to avoid alternatives.

It appears that the applicant asserts, and EFSEC and BPA concur, that the proposal is for a private project on private property. See 197-11-440(5)(d). This exemption does not apply if the project includes a rezone or:

> if other locations for the type of proposed use have not been included or considered in existing planning or zoning documents.

The portion of the DEIS addressing land use regulation does not disclose that wind turbines were ever included or considered in planning documents adopted in Skamania County. See DEIS at pages 3-140 to 3-155.

The failure of the DEIS to consider alternatives is a fatal flaw for several reasons.

First, there are serious issues as to whether the proposal is consistent with local zoning. While the DEIS seems to claim that the project is consistent with Skamania County's comprehensive plan and zoning code, there are many reasons to believe it is not. On May 6, 2009 SOSA filed a lengthy letter directed to both Skamania County and EFSEC challenging the consistency of the proposal with local zoning. Among other matters, that letter pointed out that wind turbines or wind farms are not listed as permitted uses in the

Skamania County Zoning Ordinance or in the 2007 Skamania County Comprehensive plan.

The latter conclusion is confirmed by decision of the Skamania County Hearing Examiner made in February 2009 in a SEPA challenge to a determination of nonsignificance for adoption of a new zoning ordinance for Skamania County, which ordinance proposed regulating wind turbine development. Questions arose during the course of that hearing regarding whether the 2007 Skamania County Comprehensive Plan actually permitted or considered wind energy facilities. In her decision, the Hearing Examiner found as follows:

> The 2007 Comprehensive Plan does not contemplate the type of energy facilities described in the Planning Commission Recommended Draft.

See Findings and Decision, Finding 18 at page 8. The Hearing Examiner went on to rule that Skamania County was required to prepare an environmental impact statement prior to the adoption of its new zoning ordinance. Skamania County has never prepared the environmental impact statement ordered by the Examiner and the proposed zoning ordinance was not adopted.

Since Skamania County has adopted a zoning ordinance that does not provide for wind energy facilities, and its comprehensive plan does not contemplate such facilities, the exception in the SEPA Rules does not apply. Either WRE must apply for a rezone (which it has not) or EFSEC must preempt local zoning. The preemption decision by EFSEC would be the functional equivalent of a rezone because it provides approval for a previously unpermitted use.

In fact, EFSEC must make a determination of land use consistency and held a hearing on that subject on May 6, 2010. However, EFSEC did not make a decision on land use consistency at that time and has deferred such decision to be made in the course of the adjudicative hearings.

The consistency of the proposed project with local zoning has yet to be determined. The responsible official under SEPA, the EFSEC manager, accordingly cannot determine whether the WRE project is consistent with local zoning. If it is not, the Council may preempt local zoning, which would be the functional equivalent of a rezone for the project. Alternatives must accordingly be fully considered.

Second, the proposal is not a private project within the meaning of the SEPA Rules. This issue was previously considered in a Washington Supreme Court decision:

> Under the present statutes and administrative code, the question now before the court as to whether the EIS is adequate turns on whether the proposed project is a "public project" or a "private project".FN1

> FN1. It is unnecessary in this case to determine whether the "public"/ "private" distinction drawn in the administrative code accords with SEPA policy. We recognize that one commentator has suggested that in certain cases, the distinction may be unsound. See Richard L. Settle, The Washington State Environmental Policy Act: A Legal and Policy Analysis §14(b)(ii) (4th ed. 1993).

WAC 197-11-440(5)(d) provides in relevant part:

> When a proposal is for a private project on a specific site, the lead agency shall be required to evaluate only the no action alternative plus other reasonable alternatives for achieving the proposal's objective *on the same site....*

(Italics ours.) A "private project" is defined in WAC 197-11-780: "'Private project' means any proposal primarily initiated or sponsored by an individual or entity other than an agency."

Weyerhaeuser v. Pierce County, 124 Wn. 2d 26, 38-39, 873 P.2d 498, 505 (1994).

The project in *Weyerhaeuser* was a land fill proposed by a private applicant on private property. However, the court concluded it was a public project because of the close relationship between the county actions and the supposedly private project. The court went on to hold:

> We agree with the Weyerhaeusers that, as a matter of law, the proposed landfill is a public project, and the EIS must contain a sufficient discussion of offsite alternative proposals. Because it does not do so, it is inadequate as a matter of law.

The WRE project is similarly public for several reasons. First, the DEIS contains extensive discussion as to need for electric power to meet public needs for the region. See DEIS pages 1-4 to 1-7. This is clear in the DEIS at page 1-4: "The Applicant's purpose in proposing the Whistling Ridge Energy Project is to help meet the future need for energy resources." SDS also seeks to provide an additional renewable resource for electric utilities in Washington. Second, this project has been referenced by its proponents as a "semi-public" facility under the Skamania County zoning ordinance. See DEIS at page 3-147 to 149.

The WRE proposal is not exempt from alternatives analysis under SEPA or NEPA as it must be classified as a public facility.

Third, the DEIS cites numerous public documents that the project will supposedly comply with, including the Fifth Northwest Electric Power and Conservation Plan (DEIS at 1-4), the draft Sixth Northwest Electric Power Plan ("NPCC 2009", DEIS at 1-5), the "establishment of Renewable Portfolio Standards (RPS) at the state level" (DEIS at 1-

5), the requirement for "qualified alternative energy products" pursuant to state law (DEIS at 1-5). Each of these regulations and policies is substantially similar to the relationship between Pierce County and the developer in the *Weyerhaeuser* case. The DEIS touts the current proposal as meeting public needs and legislative mandates. WRE cannot promote the project "public" for one purpose, but claim it is "private" for another, especially where careful review of alternatives is required by SEPA and NEPA.

The result of the *Weyerhaeuser* case was as follows:

> The hearing examiner's decisions on the conditional use permit and the EIS appeal are reversed. The EIS must be revised to adequately address alternatives to the proposed project. In any new public hearing on this proposed project where county-staff-authored reports and an environmental impact statement are involved, the opportunity for oral cross examination of the staff members must be accorded.

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Ninth, the proposed project requires an interconnection with the BPA transmission line together with the construction of a substation. That is clearly a public project, not a private project, and thus alternatives must be fully considered. As related to the substation it is understood that the BPA substation must be built with capacity to receive additional electric energy for interconnection with the FCRTS. Thus, the EIS must consider whether the BPA substation will act as an attraction for other energy projects to locate nearby. In this regard, SOSA notes that a natural gas pipeline traverses the north portion of the project area. See DEIS, Figure 2-3. In the recent past, the land owner SDS has promoted plans for a gas turbine for electrical generation in this area. The EIS must consider the possibility of a gas turbine project in the area, especially one that may have enhanced financial feasibility because of the proximity to both a fuel source (the gas pipeline) and a substation to connect that energy to the FCRTS. Given the need for balancing resources for VERs like WR, location of such a facility nearby appears more likely. Accordingly, the EIS must consider the impacts of such a gas turbine facility, including air emissions, noise, wildlife impacts and other impacts common to these facilities.

In addition, reports indicate that this year 68% of new wind turbine energy will be sold to California. The FEIS should identify whether power from the WR project will be sold and used in California or at any other location outside the state of Washington. Further, analysis should be made as to the capacity of transmission lines to accept the power from the WR project. Any contract or informal commitment between this applicant and public or private utilities should be identified in the FEIS and whether such parties are providing up front costs for this application and construction. If the power from this project is to be sold to out of state public or private consumers, then alternatives should be considered closer to where the power will be consumed.

Tenth, while SEPA contains the public v. private distinction, NEPA and the NEPA Guidelines contain no such exception. Since this DEIS is to meet NEPA requirements, there must be a full exploration of available alternatives under the terms of both NEPA

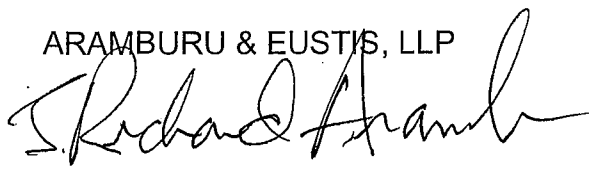
and SEPA rules. As cited above, the NEPA Guidelines require consideration of alternatives even though they may not be within the agency's jurisdiction.

Given the importance of alternatives analysis under both NEPA and SEPA, the failure of EFSEC and BPA to do this analysis now may mean that upcoming processes will have to be repeated should a court determine that the procedure adopted is illegal, resulting in a huge waste of time and resources of all involved.

In summary, the failure of the DEIS to discuss reasonable alternatives is a fatal flaw in that document. EFSEC and BPA should immediately withdraw the noncompliant DEIS and prepare a supplemental DEIS that considers all reasonable alternatives, not just those identified in this letter. The supplemental DEIS should be circulated for comment as required for any DEIS and no work on the final EIS should begin until all comments are in for the supplement.

Sincerely yours,

ARAMBURU & EUSTIS, LLP



J. Richard Aramburu

JRA:cc
cc: SOSA
Friends

BPA Balancing Authority Load and Total Wind, Hydro, and Thermal Generation, Near-Real-Time

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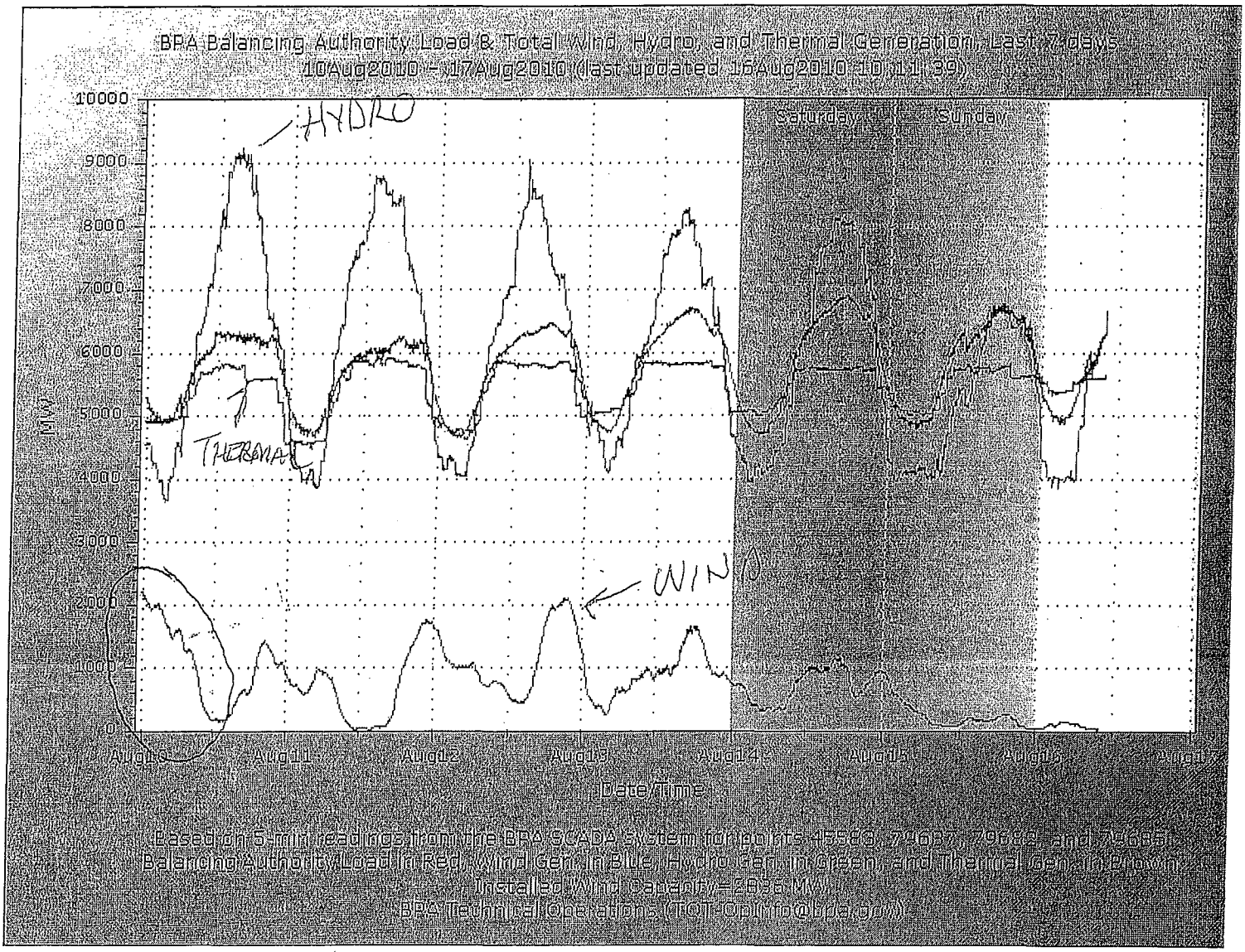

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Attachment A

Montano,Andrew M - KEC-4

From: Carol [c[redacted]om]
Sent: Thursday, August 26, 2010 4:56 PM
To: stephen.posner@commerce.wa.gov; Montano,Andrew M - KEC-4
Cc: Rick Aramburu
Subject: SOSA DEIS Comments on WRE proposal: Alternatives

Attachments: DEIS Comments Aug2010 - alternatives.pdf

DEIS Comments Aug2010 - altern...

Gentlemen,

Attached please find comments on the DEIS for the Whistling Ridge Energy proposal (with Attachment A).

Carol Cohoe

[redacted]uct

bccts,f

ARAMBURU & EUSTIS, LLP
Attorneys at Law

[redacted]

August 26, 2010

Stephen Posner
Energy Facility Site Manager
Washington EFSEC
905 Plum Street SE, 3rd Floor
PO Box 43712
Olympia WA 98504-3172

Andrew M. Montaño
Environmental Protection Specialist
Bonneville Power Administration
PO Box 3621 KEC-4
905 NE 11th Avenue
Portland OR 97208-3621

Re: Comments on Draft EIS for Whistling Ridge Energy Project
DOE EIS - 0419: Failure to Consider Alternatives

Dear Messrs. Posner and Montaño:

This office represents Save Our Scenic Area (SOSA), a Washington corporation representing persons interested in the Whistling Ridge Energy Project (WRE). SOSA's primary mission is to preserve the Columbia River Gorge National Scenic Area view-shed; to further maintain the existing rural and scenic character of Underwood, Washington, and surrounding communities in Washington and Oregon; and work to preserve the intent of the Columbia River Gorge National Scenic Area Act. I write today to provide comments on the recently issued draft environmental impact statement (DEIS) for the WRE proposal.

WRE proposes to construct as many as 50 wind turbines on ridge lines on its property in Skamania County to produce a minimum of 70 MW. The project includes the construction and operation of a substation to be owned and operated by BPA that will connect the project to the Federal Columbia River Transmission System (FCRTS or the Grid). As discussed herein the project includes the turbines, the electrical connection system, the necessary infrastructure and the BPA substation. Though this project has been under development for some time, the applicant has identified only a range of wind turbine generators which "would likely range in size from 1.2 to 2.5 MW." DEIS at 1-9. However, the larger capacity turbines have larger diameter rotors (up to 100 meters), so it is unknown what the size of the machines would actually be. The proposal has multiple serious environmental impacts, including severe impacts on the visual surroundings of the Columbia River Gorge National Scenic Area.

A severe deficiency in the EIS is the failure to consider any alternative other than the applicant's minimum 70 MW proposal on its own property. Page 1-13 of the "Alternate Project Locations" includes only sites within the ownership of SDS. On page 1-14, the EIS states that the applicant considered a lesser number of turbines, but rejected such an alternative because it did not fit within SDS's concept of "economic feasibility." The failure to consider either alternate locations or alternate site configurations (with fewer wind turbines) is a fundamental and fatal defect in the DEIS, as was previously pointed out at the public hearing on the document. The responsible official must prepare a supplemental DEIS to address and thoroughly consider reasonable alternatives. This supplemental DEIS should be circulated for comment in the same manner as any DEIS under NEPA/SEPA rules and regulations.

After the DEIS was issued, the EFSEC and BPA issued Council Order No. 848 (June 29, 2010), which acknowledged public comments during the DEIS comment hearing on June 16, 2010 that identified "potentially serious errors in, or omissions from, the draft EIS." See page 2 of Order 848. That order requested that the applicant "incorporate into its direct presentation any information needed to address asserted significant flaws in the DEIS." Order 848 also indicated that the Final Environmental Impact Statement (FEIS) would not be issued before the adjudicative hearings began on December 8, 2010. SOSA and Friends of the Columbia Gorge (Friends) objected to Order 848 on July 8, 2010, requesting that the Council's responsible official require that the FEIS be issued prior to the commencement of the adjudicative hearings.

In its Order 850, the Council responded to the objections of Friends and SOSA. In that order, the Council indicated that:

> The comments [on the DEIS] are reviewed, responses are prepared and then the general agency practice is that the responsible official issues a draft final EIS (DFEIS).
>
> The DFEIS precedes the beginning of the adjudicative hearing. Its information is public and available. The environmental record is received in evidence; its information is available to the parties and the public during the adjudicative hearing. The content of the DFEIS is the equivalent of a FEIS. At the conclusion of the hearing process, the responsible official issues a FEIS, which may incorporate additional information received in the adjudicative hearing.

Order 850 at pages 3-4. Order 850 raises multiple issues regarding the proper procedures under SEPA and NEPA, as well as several unanswered questions, as follows:

1. There are no procedures under SEPA or NEPA by which an agency can issue a "DFEIS." Accordingly, it cannot be considered part of the SEPA or NEPA process.

2. Order 850 does not indicate whether interested parties may comment on the "DFEIS." Given that it is a draft document (though not one authorized by SEPA or NEPA), the DFEIS, if issued, should be properly noticed to agencies and persons who commented on the DEIS. There should be a comment period of a minimum of 45 days on the DFEIS.

3. Order 850 does not explain how the responsible official "may incorporate additional information received in the adjudicative hearing." Will the responsible official go through the entire administrative record to revise the DFEIS? More information is required on how that process will be implemented.

Based on the foregoing, SOSA still believes that the correct procedure to be followed, and one authorized by the rules under both SEPA and NEPA, is to issue a supplemental DEIS (SDEIS) correcting basic errors in the issued DEIS. The SDEIS would be subject to comment by interested agencies and members of the public. Our legal basis for this request is as follows:

The starting point for analysis of the alternative requirement is SEPA itself. RCW 43.21C.030(1)(c)(iii) makes clear that the "detailed statement" (which is now the environmental impact statement requirement) must consider "alternatives to the proposed action." Alternatives are so important under SEPA that each state agency, including EFSEC, has the responsibility to:

> Study, develop and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.

The details of consideration of alternatives in an EIS is found at WAC 197-11-440(5).

Under NEPA Rules, the consideration of alternatives is considered the heart of the EIS:

> Sec. 1502.14 Alternatives including the proposed action.
> This section is the heart of the environmental impact statement. Based on the information and analysis presented in the sections on the Affected Environment (Sec. 1502.15) and the Environmental Consequences (Sec. 1502.16), it should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public. In this section agencies shall:

> (a) Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.
> (b) Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits.
> (c) Include reasonable alternatives not within the jurisdiction of the lead agency.
> (d) Include the alternative of no action.
> (e) Identify the agency's preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference.
> (f) Include appropriate mitigation measures not already included in the proposed action or alternatives.

(Emphasis supplied.)

As noted above, based on the applicant's own opinion of financial feasibility, the DEIS has not considered other alternatives; a position which appears to be unquestioned by the drafters of the DEIS. However, the applicant has not provided any information on financial feasibility and cannot so stricture and limit its proposal to avoid alternatives.

It appears that the applicant asserts, and EFSEC and BPA concur, that the proposal is for a private project on private property. See 197-11-440(5)(d). This exemption does not apply if the project includes a rezone or:

> if other locations for the type of proposed use have not been included or considered in existing planning or zoning documents.

The portion of the DEIS addressing land use regulation does not disclose that wind turbines were ever included or considered in planning documents adopted in Skamania County. See DEIS at pages 3-140 to 3-155.

The failure of the DEIS to consider alternatives is a fatal flaw for several reasons.

First, there are serious issues as to whether the proposal is consistent with local zoning. While the DEIS seems to claim that the project is consistent with Skamania County's comprehensive plan and zoning code, there are many reasons to believe it is not. On May 6, 2009 SOSA filed a lengthy letter directed to both Skamania County and EFSEC challenging the consistency of the proposal with local zoning. Among other matters, that letter pointed out that wind turbines or wind farms are not listed as permitted uses in the

Skamania County Zoning Ordinance or in the 2007 Skamania County Comprehensive plan.

The latter conclusion is confirmed by decision of the Skamania County Hearing Examiner made in February 2009 in a SEPA challenge to a determination of nonsignificance for adoption of a new zoning ordinance for Skamania County, which ordinance proposed regulating wind turbine development. Questions arose during the course of that hearing regarding whether the 2007 Skamania County Comprehensive Plan actually permitted or considered wind energy facilities. In her decision, the Hearing Examiner found as follows:

> The 2007 Comprehensive Plan does not contemplate the type of energy facilities described in the Planning Commission Recommended Draft.

See Findings and Decision, Finding 18 at page 8. The Hearing Examiner went on to rule that Skamania County was required to prepare an environmental impact statement prior to the adoption of its new zoning ordinance. Skamania County has never prepared the environmental impact statement ordered by the Examiner and the proposed zoning ordinance was not adopted.

Since Skamania County has adopted a zoning ordinance that does not provide for wind energy facilities, and its comprehensive plan does not contemplate such facilities, the exception in the SEPA Rules does not apply. Either WRE must apply for a rezone (which it has not) or EFSEC must preempt local zoning. The preemption decision by EFSEC would be the functional equivalent of a rezone because it provides approval for a previously unpermitted use.

In fact, EFSEC must make a determination of land use consistency and held a hearing on that subject on May 6, 2010. However, EFSEC did not make a decision on land use consistency at that time and has deferred such decision to be made in the course of the adjudicative hearings.

The consistency of the proposed project with local zoning has yet to be determined. The responsible official under SEPA, the EFSEC manager, accordingly cannot determine whether the WRE project is consistent with local zoning. If it is not, the Council may preempt local zoning, which would be the functional equivalent of a rezone for the project. Alternatives must accordingly be fully considered.

Second, the proposal is not a private project within the meaning of the SEPA Rules. This issue was previously considered in a Washington Supreme Court decision:

> Under the present statutes and administrative code, the question now before the court as to whether the EIS is adequate turns on whether the proposed project is a "public project" or a "private project".FN1

> FN1. It is unnecessary in this case to determine whether the "public"/ "private" distinction drawn in the administrative code accords with SEPA policy. We recognize that one commentator has suggested that in certain cases, the distinction may be unsound. See Richard L. Settle, The Washington State Environmental Policy Act: A Legal and Policy Analysis §14(b)(ii) (4th ed. 1993).

WAC 197-11-440(5)(d) provides in relevant part:

> When a proposal is for a private project on a specific site, the lead agency shall be required to evaluate only the no action alternative plus other reasonable alternatives for achieving the proposal's objective *on the same site....*

(Italics ours.) A "private project" is defined in WAC 197-11-780: "'Private project' means any proposal primarily initiated or sponsored by an individual or entity other than an agency."

Weyerhaeuser v. Pierce County, 124 Wn. 2d 26, 38-39, 873 P.2d 498, 505 (1994).

The project in *Weyerhaeuser* was a land fill proposed by a private applicant on private property. However, the court concluded it was a public project because of the close relationship between the county actions and the supposedly private project. The court went on to hold:

> We agree with the Weyerhaeusers that, as a matter of law, the proposed landfill is a public project, and the EIS must contain a sufficient discussion of offsite alternative proposals. Because it does not do so, it is inadequate as a matter of law.

The WRE project is similarly public for several reasons. First, the DEIS contains extensive discussion as to need for electric power to meet public needs for the region. See DEIS pages 1-4 to 1-7. This is clear in the DEIS at page 1-4: "The Applicant's purpose in proposing the Whistling Ridge Energy Project is to help meet the future need for energy resources." SDS also seeks to provide an additional renewable resource for electric utilities in Washington. Second, this project has been referenced by its proponents as a "semi-public" facility under the Skamania County zoning ordinance. See DEIS at page 3-147 to 149.

The WRE proposal is not exempt from alternatives analysis under SEPA or NEPA as it must be classified as a public facility.

Third, the DEIS cites numerous public documents that the project will supposedly comply with, including the Fifth Northwest Electric Power and Conservation Plan (DEIS at 1-4), the draft Sixth Northwest Electric Power Plan ("NPCC 2009", DEIS at 1-5), the "establishment of Renewable Portfolio Standards (RPS) at the state level" (DEIS at 1-

5), the requirement for "qualified alternative energy products" pursuant to state law (DEIS at 1-5). Each of these regulations and policies is substantially similar to the relationship between Pierce County and the developer in the *Weyerhaeuser* case. The DEIS touts the current proposal as meeting public needs and legislative mandates. WRE cannot promote the project "public" for one purpose, but claim it is "private" for another, especially where careful review of alternatives is required by SEPA and NEPA.

The result of the *Weyerhaeuser* case was as follows:

> The hearing examiner's decisions on the conditional use permit and the EIS appeal are reversed. The EIS must be revised to adequately address alternatives to the proposed project. In any new public hearing on this proposed project where county-staff-authored reports and an environmental impact statement are involved, the opportunity for oral cross examination of the staff members must be accorded.

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> generation is, in effect, a trustee of the environment for succeeding generations. Particular attention should be given to the possibility of foreclosing future options by implementing the proposal.

For the present application, the DEIS must discuss the alternative of delaying the implementation of the WR proposal. In light of visual impacts, bird and bat kills and other serious impacts of the WR proposal, the DEIS should discuss the option of reserving the WRE project until such time as projects with lesser impacts have been permitted and constructed. The DEIS should accordingly discuss potential wind turbine sites, including those permitted, those under application, and those in areas where new applications are likely, for example, where land commitments in the form of leases are made by property owners to wind turbine developers.

Ninth, the proposed project requires an interconnection with the BPA transmission line together with the construction of a substation. That is clearly a public project, not a private project, and thus alternatives must be fully considered. As related to the substation it is understood that the BPA substation must be built with capacity to receive additional electric energy for interconnection with the FCRTS. Thus, the EIS must consider whether the BPA substation will act as an attraction for other energy projects to locate nearby. In this regard, SOSA notes that a natural gas pipeline traverses the north portion of the project area. See DEIS, Figure 2-3. In the recent past, the land owner SDS has promoted plans for a gas turbine for electrical generation in this area. The EIS must consider the possibility of a gas turbine project in the area, especially one that may have enhanced financial feasibility because of the proximity to both a fuel source (the gas pipeline) and a substation to connect that energy to the FCRTS. Given the need for balancing resources for VERs like WR, location of such a facility nearby appears more likely. Accordingly, the EIS must consider the impacts of such a gas turbine facility, including air emissions, noise, wildlife impacts and other impacts common to these facilities.

In addition, reports indicate that this year 68% of new wind turbine energy will be sold to California. The FEIS should identify whether power from the WR project will be sold and used in California or at any other location outside the state of Washington. Further, analysis should be made as to the capacity of transmission lines to accept the power from the WR project. Any contract or informal commitment between this applicant and public or private utilities should be identified in the FEIS and whether such parties are providing up front costs for this application and construction. If the power from this project is to be sold to out of state public or private consumers, then alternatives should be considered closer to where the power will be consumed.

Tenth, while SEPA contains the public v. private distinction, NEPA and the NEPA Guidelines contain no such exception. Since this DEIS is to meet NEPA requirements, there must be a full exploration of available alternatives under the terms of both NEPA

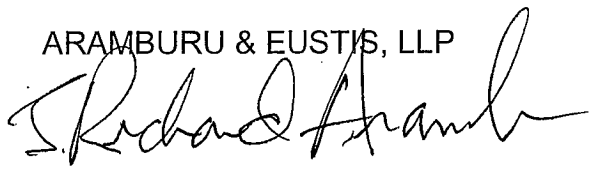
and SEPA rules. As cited above, the NEPA Guidelines require consideration of alternatives even though they may not be within the agency's jurisdiction.

Given the importance of alternatives analysis under both NEPA and SEPA, the failure of EFSEC and BPA to do this analysis now may mean that upcoming processes will have to be repeated should a court determine that the procedure adopted is illegal, resulting in a huge waste of time and resources of all involved.

In summary, the failure of the DEIS to discuss reasonable alternatives is a fatal flaw in that document. EFSEC and BPA should immediately withdraw the noncompliant DEIS and prepare a supplemental DEIS that considers all reasonable alternatives, not just those identified in this letter. The supplemental DEIS should be circulated for comment as required for any DEIS and no work on the final EIS should begin until all comments are in for the supplement.

Sincerely yours,

ARAMBURU & EUSTIS, LLP



J. Richard Aramburu

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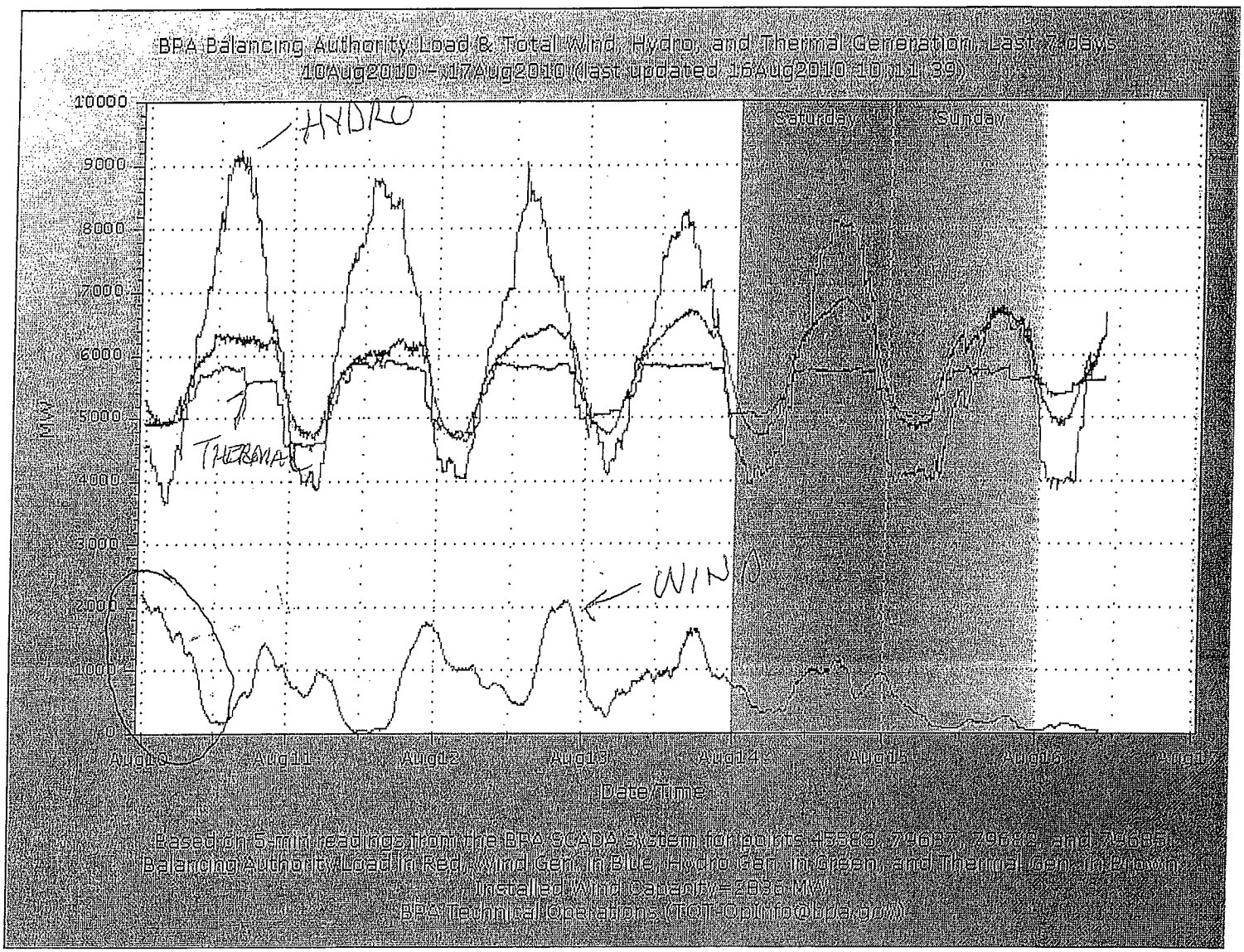

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COMMENT LETTER 177

From: Posner, Stephen (UTC) [Sposner@utc.wa.gov]
Sent: Monday, August 30, 2010 3:19 PM
To: Jan Aarts
Subject: FW: Whistling Ridge Energy Project - Counsel For the Environment DEIS Comment Letter
Attachments: Letter 20100827 Comments on DEIS.pdf

Jan,

As we discussed.

Stephen Posner

Energy Facility Site Evaluation Council

P.O. Box 43172

Olympia, WA 98504-3172

(360) 956-2063

stephen.posner@utc.wa.gov

visit the EFSEC website at: www.efsec.wa.gov

From: Vervair, Candace (ATG)
Sent: Friday, August 27, 2010 2:17 PM
[redacted]
Cc: Marvin, Bruce (ATG)
Subject: Whistling Ridge Energy Project

Please see attached letter from AAG H. Bruce Marvin, Counsel for Environment:

<<Letter 20100827 Comments on DEIS.pdf>>

[redacted]

Rob McKenna
ATTORNEY GENERAL OF WASHINGTON
1125 Washington Street • PO Box 40100 • Olympia WA 98504-0100

Via Email and First Class Mail

August 27, 2010

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Re: Whistling Ridge Energy Project Draft Environmental Impact Statement: Comments

To Whom It May Concern:

Counsel for the Environment (CFE) appreciates this opportunity to comment on the Whistling Ridge Energy Project (Whistling Ridge) Draft Environmental Impact Statement (DEIS). The following comments seek to ensure that the Final Environmental Impact Statement (FEIS) fully captures and analyzes the proposed project's environmental impacts, potential mitigation measures, and reasonable off-site and on-site alternatives so that permitting authorities can make a fully informed decision. CFE takes no position regarding the merits of the project at this time.

1.0 Summary and Purpose of and Need for Action

1.4 ALTERNATIVES ANALYSIS

The Alternatives Analysis is limited to a No Action alternative. While the DEIS states that other locations, project sizes and project configurations were considered, it fails to identify these alternative locations or configurations, or adequately explain why they were not worthy of additional analysis. As described in more detail below, the off-site and on-site alternative analyses should be expanded to include in-depth descriptions of the criteria used to select the proposed site and the proposed project configuration, as well as a focused discussion about why other sites and project configurations were excluded from further review.

1.4.1 Proposed Action

The second bulleted factor in this section indicates that the site must be large enough to accommodate enough wind turbines to produce a minimum of 70 MW of electricity. Because the wind does not blow at a constant rate, wind turbines rarely operate at 100% percent capacity. Accordingly, references to wind generating capacity should be expressed in nameplate generation capacity.

The fourth bulleted factor in this section states: "The site has a long history of commercial logging and associated absence of *native* habitat, reducing or eliminating the need to clear additional forest land." This and similar statements regarding the "absence of native habitat" are made in several places in the document (*e.g.*, 3.4.1.1), and the statement is misleading. With the exception of the weeds identified at the site and disclosed elsewhere in the document, grass, forb, shrub, and tree species at the site are predominantly native. A more accurate statement would be that the site is heavily managed and manipulated and is not in a *natural* state, being maintained in a state of disclimax and with monotypic forest stands. The affected environment description provided in Chapter 3 (3.4.1.1 and 3.4.1.2) is far more accurate.

The final paragraph in this section states that the project would have a total nameplate capacity of "up to 75 MW." The second bulleted factor in this section states that project's minimum nameplate capacity is 70 MW. It is unclear how these two figures relate to one another. The project's maximum and minimum nameplate generating capacity levels should be clearly identified and described in a single location.

1.4.1.1 Wind Turbines

The generating capacity should be referenced as nameplate capacity. This section should also clarify whether the size of the turbines will be consistent throughout the project or whether the size will vary from tower to tower.

1.4.2 No Action Alternative

This section states that the only circumstance the project will not be built is if the responsible agencies (BPA or EFSEC) withhold their authorization. There are a multitude of reasons why a proposed project may not be built. This statement is not accurate and should be removed from the FEIS.

1.4.3 Alternatives Considered But Eliminated From Detailed Study

This section explains why the no action alternative was the only alternative analyzed. In doing so, it references a set of technical and economic requirements that purportedly eliminated all other potential project sites from consideration. None of the eliminated off-site locations,

however, are identified, and the DEIS does not contain the underlying technical and economic data the Applicant used to eliminate the undisclosed sites from further consideration. At a minimum, the FEIS should include detailed information regarding the economic and technical data underlying the site selection criteria, as well as the locations of all potential alternative sites considered so that the decision to limit review to the No Action alternative can be independently verified.

1.4.3.1 Alternative Project Locations

The DEIS states that the Applicant applied the following criteria to determine whether alternative project locations were available for EIS review: adequate wind supply, applicant ownership of land, ability to operate wind turbines without impacting commercial timber operations, and proximity to high voltage transmission lines. The DEIS analysis and discussion of the alternative location selection process is set forth in a single sentence:

> No other sites were identified that are under the ownership of the Applicant or as close to transmission infrastructure facilities.

DEIS at p. 1-14. This summary analysis should be expanded to include a detailed description of the criteria used to select the project site, the location of the alternative sites that were considered, and discussion regarding why these alternative sites were ultimately eliminated from further consideration.[1] The FEIS should also be expanded to consider the Middle Mountain Project, which is only 12 miles from the proposed project site, as an alternative wind generation site.

1.4.3.2 Larger or Smaller Generation Facility Size

The FEIS should be expanded to address on-site alternatives that reduce the number of turbines and/or reconfigure the turbine strings. The purpose of the alternatives analysis is to explore whether the needs of the project can be accomplished through less environmentally impactful means. During the scoping hearings, the public and National Parks Service raised concerns regarding the project's visual impacts, particularly regarding the location of Turbine String A.[2]

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[1] Ideally, this discussion would include information sufficient to independently verify the decision to eliminate these alternative sites from further consideration. This would include the location of SDS holdings in Southern Washington and Northern Oregon, wind resources available in those areas, the location of transmission lines, economic parameters for the project, as well as economic information regarding the project's interrelationship with timber harvesting activities.

[2] Turbine String A is also unique in that it contains the turbines in closest proximity to residential dwellings and is located on a parcel of land that is zoned FOR/AG 20, which would require issuance of a conditional use permit under Skamania County's land use laws. *See* DEIS at p. 3-153.

This section asserts that the project must be reviewed as an "integrated whole" from which no piece may be eliminated and that if turbines are removed from the project design, "other locations must be found to replace those turbines to maintain the minimum necessary capacity." These assertions are unsupported by analysis and appear to be inconsistent with the project description in both the Site Certification Application (SCA) and the DEIS. Both the SCA and the DEIS state that the project will have a total nameplate generating capacity of approximately 75 MW and will be comprised of up to 50 towers equipped with turbines with nameplate generating capacities ranging from 1.2 to 2.5 MW .[3] Assuming that a 2 MW turbine is selected, the maximum generating capacity of 75 MW could be satisfied with the installation of 38 turbines (resulting in a reduction of 12 turbines).[4] If a 2.5 MW turbine is selected, the number of towers could be reduced to 30.

Reducing the number of turbines without sacrificing nameplate generating capacity is not merely hypothetical. The Kittitas Valley Wind Power Project recently reduced its total number of turbines from a maximum of 65 to a maximum of 52 turbines without any change in nameplate generating capacity. The FEIS should include a discussion regarding how the project may be reconfigured through the use of turbines with larger generating capacities.

The FEIS should include information regarding the strength and viability of wind resources found throughout the site. This would include information gathered from the on-site meteorological tower regarding the strength, quality, direction and location of on-site wind resources.

1.4.3.4 Alternative Project Configurations

See comments under § 1.4.3.2, Larger or Smaller Generation Facility Size.

1.4.3.6 Alternative Access Roads

Private logging road CG 2930 should be subject to detailed review as an alternative access road. The original Site Certification Application proposed accessing the site using this route. On October 12, 2009, the Applicant submitted an amended application that abandoned the CG 2930

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[3] The SCA at Section 2.3.3.1, for example, states that "[t]he project would consist of **up to 50 wind turbines**" and that each turbine would have a nameplate generating power of somewhere between 1.2- to 2.5 MW. (Emphasis added). The DEIS contains an identical description.[3] *See* DEIS at §1.4.1.1. Both the SCA and DEIS also state that the project must have a generating capacity of "up to 75 MW." *See* SCA at §2.3.2 (Project Overview – "up to 75 MW"); DEIS at §1.4.1 ("minimum of 70 MW;" "up to 75 MW").

[4] Recently permitted projects appear to be installing turbines with nameplate generation capacities of 2.0 MW or larger. The Desert Claim Wind Power Project, for example, will be installing 2 MW turbines. *See* Desert Claim Wind Power Project Final Supplemental EIS at 2-13. The recent expansion to the Wild Horse Wind Power Project also used 2.0 MW turbines.

route in favor of the West Pit Road with the stated purpose of removing the entire project outside the CRGNSA boundary. *See* October 12, 2009 Letter from Whistling Ridge Energy Project to EFSEC re: Submittal of Amended Application 2009-01. Although removing this route from the project plan may dispose of certain regulatory hurdles, the West Pit Road is a longer route that traverses steeper terrain and will likely have a higher environmental impact than the CG 2930.[5] Accordingly, this CG 2930 should be evaluated as an alternative.

1.6 SUMMARY OF POTENTIAL PROJECT IMPACTS AND MITIGATION MEASURES

Earth – p. 1-22 – Impact of Proposed Project: Much of the West Pit Road is located in a Class II Landslide Hazard Area. This section should summarize and address anticipated impacts, if any, related to Class II Landslide Hazard Areas.

Air Quality – p. 1-22 – Impact of No Action Alternative: This section identifies impacts from construction of fossil fuel power plants as a potential impact under the no action alternative. There is nothing in the record establishing that proposed project is being built in lieu of fossil fuel powered plant or that its construction will reduce the number of fossil fuel powered generation facilities in the future. Indeed, intermittent nature of wind generated power may require the construction of fossil fuel facilities to provide a back up power source.[6]

Biological Resources – p. 1-23 – Impact of No Action Alternative: *See* comments regarding Air Quality – p. 1-22 – Impact of No Action Alternative *infra.*

Biological Resources – p. 1-24 – Impact of Proposed Project: This section states that there "would likely be some mortality to birds and bats due to turbine collision and displacement." This should be revised to state that operation of project "will result in mortality to some birds and bats . . ."

Biological Resources – p. 1-24 – Design and Mitigation Measures: Remove qualifier "extensive" from pre-project assessment of wildlife habitat conducted under WDFW Wind Power Guidelines.

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[5] Long sections of West Pit Road crosses land designated as a Class II landslide hazard area. *See* DEIS Figures 3.1-1, 3.1-4 and 3.11-2

[6] The No Action Alternative analysis appearing on p. 3-92 and in other section of the DEIS contains a more accurate description of the possible impacts if no action is taken:

> It is likely that the region's power needs would be met through energy efficiency and conservation measures, existing power generation, or the development of new power generation. Base load demands would likely be filled through expansion of existing, or development of new thermal generation such as gas-fired combustion turbine technology. The impacts would depend on the type, location, and size of the facility proposed.

Biological Resources - p. 1-24 – Design and Mitigation Measures: A Technical Advisory Committee (TAC) is described, including a description of the stakeholders comprising this group. Because the overarching concern for biological resources is bird and bat mortality, a representative of the Audubon Society should be specified and included in the TAC.[7]

Biological Resources - p. 1-25 – Design and Mitigation Measures: The post construction avian mortality monitoring should include bat mortality monitoring as so little is known about bat species' composition and mortality risk at the site. The monitoring program should also analyze the accuracy of the pre-construction risk and mortality predictions. Because the project is being proposed in a new habitat type (forested) for Washington wind energy projects, and because so little is known about bat use of the site, bird and bat monitoring should be conducted for five (5) years, rather than the proposed two (2) years.

Visual Resources – p. 1-28 – Impact of Proposed Project: This section should clearly state that as proposed the project **will** have low to moderate visual impacts from key viewpoints, including key viewpoints within the CRGNSA.

1.7 SUMMARY OF UNAVOIDABLE ADVERSE IMPACTS

This section should plainly identify and summarize unavoidable **adverse** impacts. References to beneficial impacts should be removed. The description of unavoidable visual impacts (Table 1-2, p. 1-35) should be re-drafted to read as follows:

> This project will have unavoidable adverse visual impacts on the surrounding area. Visual impact analysis establishes that the project will have low to moderate visual impacts from key viewpoints, including viewpoints within the CRGNSA.

1.8 CUMULATIVE IMPACTS

The discussions of existing development in section 1.8.1.1 and reasonably foreseeable future development in section 1.8.1.2 appear to be inconsistent. In section 1.8.1.1, the authors considered wind projects located 35 to 70 miles from the proposed project in their cumulative analysis. In section 1.8.1.2, however, the authors chose to disregard two proposed wind power projects (Juniper Canyon and Summit Ridge) because they are "too far away (generally more than 20 miles) from the Whistling Ridge Energy Project site to result in cumulative impacts." Given that the cumulative analysis of existing impacts considered projects that were located 70 miles away, the analysis of cumulative impacts relating to reasonably foreseeable future

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[7] The TAC should also be expanded to include representatives from local public interest groups, including interveners Friends of the Columbia Gorge and Save Our Scenic Area.

development should apply similar criteria or include an explanation as to why different criteria were applied.

1.8.1 Projects Considered

The cumulative impact section should discuss the intermittent nature of wind energy generation and the need for easily dispatchable hydro-electric or fossil fuel generating plants to meet demand when the wind is not blowing.

2.0 Proposed Action and Alternatives

2.1 PROPOSED ACTION

2.1.2 Project Overview

Table 2-1 – Permanent disturbance areas should include the permanent parking areas adjacent to each turbine that will be necessary to conduct turbine repairs and maintenance. Also there appears to be some inconsistency in the road width used to determine the impact area outside the project.

2.1.3.7 Access Roads

Neither the Application nor the DEIS include a description of parking areas that will have to be maintained adjacent to each turbine for construction and maintenance purposes. The space consumed by these parking areas should also be included in the calculations for permanently disturbed environment.

2.1.4.1 Construction

The size and location of proposed laydown areas should be disclosed and evaluated in the FEIS.

The size and location of permanent parking lots next to each turbine should be included and evaluated in the FEIS.

This section should include a discussion regarding how concrete will be transported to the construction site. If a concrete batch plant is going to be used, its size and location should be disclosed in the FEIS. If concrete is going to be transported to the site, information regarding the trucking route and potential environmental impacts (air pollution, traffic, etc.) should be disclosed and evaluated in the FEIS.

2.1.6 Forest Harvest During Project Construction and Operation

Mitigation measures for construction of the project should include off-site mitigation for permanently disturbed or cleared areas that would constitute "forest conversions." This would include turbine parking areas and any permanent laydown area at the site.

2.1.7 Project Decommissioning

The Applicant has indicated that the life of the project is expected to be 30 years, at which time the project will either be upgraded ("re-powered") or decommissioned. If the current project receives EFSEC approval, any proposal to "re-power" the project or extend operation of the project beyond its anticipated life span should be reviewed by EFSEC as an amendment to the Site Certification Agreement. Such review should require an updated evaluation and assessment of the environmental impacts posed by the upgrade or extended life of the project.

2.3. NO ACTION ALTERNATIVE

See comments in response to Section 1.4.3 Summary of No Action Alternative.

2.3.6 Alternative Access Roads

See comments in response to Section 1.4.3.6 Alternative Access Roads.

2.4 BENEFITS AND DISADVANTAGES OF DELAYING PROJECT IMPLEMENTATION

This section summarizes the benefits and disadvantages that will result from delaying the project. It is drafted, however, in a way that minimizes the benefits and over-exaggerates the disadvantages of delay. For example, statements to the effect that a delay will prevent the creation of new construction jobs are simply not accurate. A delay in constructing the project will result in a delay in the creation of new construction jobs, just as a delay in constructing the project will delay visual impacts from the project.

2.5 COMPARISON OF ALTERNATIVES

Government action or inaction is not the only possible reason that the project will not be built. For the reasons discussed earlier, assertions that the No Action Alternative will only arise if EFSEC or BPA deny approval of the project should be redacted.

As discussed above, the DEIS should be expanded to include off site and on site alternatives. Without these additional alternatives, the comparison of the limited alternatives set forth in Table 2-5 is of questionable value for purposes of conducting meaningful environmental impact analysis under NEPA and SEPA.

3.0 Affected Environment, Impacts and Mitigation

Generally, discussions in this section should be expanded to include off site and on site alternatives.

3.1 EARTH

3.1.1.4 Geologic Hazards

This section should be expanded to address geologic hazard issues related to the proposed access road (West Pit Road). That this road traverses lands identified as Class II Landslide Hazards is of particular concern. *See* Table 3.1-4.[8]

The DEIS should also be revised to include a discussion regarding the extent to which Skamania County has assessed whether the project site or the area traversed by the proposed access road contains Class I landslide hazards (Severe).[9] If such an assessment has not been done, the discussion regarding landslide hazards should be expanded to determine whether there are affected areas that would otherwise meet the criteria for a Class I landslide hazards, even though they have not been formally designated as such by the County.

3.1.2.1 Proposed Actions

Access Road. This section should be expanded to include a discussion of geologic hazards and their impact on the access road during both the construction and operation of the proposed project, including the environmental impacts that may arise from locating the access road in a Class II landslide area.

Soil Contamination. The discussion regarding soils does not address possible presence of contaminants along the access road right of way or at the project site. The FEIS should include the results of a Phase I Environmental Site Assessment to determine if and where contaminated soils may exist.

Volcanic Activity. This section should discuss how ash from a volcanic eruption may impact the operation of wind turbines, transmission lines, and other elements of the project.

3.1.2.2 Mitigation Measures

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[8] Table 3.1-4 should be revised so that the locations of the proposed access road, as well as other access road alternatives, are easily discernable.

[9] To qualify as a Class I landslide hazard, the location must be designated as such by the local legislative body, in this case Skamania County. *See* DEIS at § 3.1.1.4 *Landslides.*

This section should describe containment and remediation measures that will be taken in the event contaminated soils are found during construction.

The scope of the mitigation measures should be expanded to address geologic hazards associated with the access road and address how the project will be accessed if the proposed access road is damaged or destroyed by a catastrophic geologic event.

The project is located in the vicinity of several volcanoes and the access road traverses land designated as a Class II landslide hazard. This section should describe and discuss mitigation measures designed to protect the environment and human health and safety in the event of a catastrophic geologic event.

3.4 BIOLOGICAL RESOURCES

3.4.1.2 Habitats

Conifer Forests – p.3-37. The second to the last sentence in this section states that "[t]he majority of coniferous forests within the project site is managed for commercial timber production, and is replanted following harvest." "Majority" could mean anywhere from 51 percent to 100 percent. A more quantitative disclosure is needed here.

Conclusion - p. 3-39. The final sentence in this section states that "[t]he project site is not located within any known wildlife corridor, flyway, foraging area, or migratory route." This statement is problematic as the site lies within the landscape-scale Pacific Flyway, which is adjacent to the Columbia River gorge (which, in turn, is a significant migratory flyway, particularly for water birds), and all north-south cordilleras in the state support at least a weak raptor migration. Elsewhere in the document (*e.g.*, p. 46), raptor activity at the site is ascribed to migratory behavior. Also, some of the bat behavior observed at the site is assumed to be foraging behavior, and birds and other wildlife are known to forage in the project area. Use of the term "known" is also problematic and suggests the need for additional study. For example, no data was collected to assess bird or bat migration activity at the site.

3.4.1.5 Special Status Wildlife Species

General Comments, Strike Risk Modeling: The avian surveys for the project use a very crude index to rank relative strike risk among the various species of birds recorded at the site. One of the three variables in the strike risk model relies on where in the vertical air column (in or out of the rotor swept zone) birds were initially detected when they were first seen.[10] No observations of bird behavior were made over any extended period of time. The behavior was apparently not even recorded for all observations, as in some years the metric is absent. Furthermore, as highly mobile species, almost any bird will at some point cross the rotor-swept area.

Some very sophisticated strike risk models have been developed around wind energy towers. The validity of at least some of these models is still in question. Nonetheless, they attempt to quantify the amount of time a species spends in the rotor strike zone, and assign risk based in part on the size, speed, and flight paths of birds crossing the rotor swept area. While implementation of such complex models may not be necessary (at this point) for this project, reliance on the simplistic model used for this project is misleading and the results should be removed from the DEIS, or at the very least the model's limitations (which are discussed in some detail in avian survey reports) should be fully disclosed in the body of the DEIS to ensure that the reader is not misled.

The avian survey report (Appendix C-4) indicates that the index is formulated to help rank the relative risk each species might face in the presence of wind towers. At best, the index may give some insight among the species at this site, but comparison to other sites, particularly in different habitat types from the proposed project, is highly suspect and appears to be untested. Appendix C-4 also states "...no relationships have been observed between overall use by bird types other than raptors, and fatality rates of those bird types at wind-energy facility. Such a lack of predictive ability also speaks for a need for long-term follow up monitoring to assess the true impacts of the project on birds.

General Comment, Species Abundance: Discussion regarding the abundance of species at the site lack context. For example, the DEIS reports that fifteen (15) swifts were seen in fall 2004, four (4) in summer 2006, and eleven (11) in summer 2009. The DEIS, however, fails to place these types of figures into a context. Do these observations constitute "a lot"? "Very few"? Compared to the next watershed west, or the core of the species range? In the case of the swifts, and indeed most species recorded in the project area, subjectively it seems that few of any given species are represented. However, in the case of migrating birds (such as the 15 swifts observed in fall 2004), this could represent a rate. In other words, there could be 15 swifts per day, or per hour trying to migrate across the project site. There is simply no contextual information to put

[10] Glancing at a bird and assigning it to "in" or "out" of the rotor swept area is an exceptionally poor predictor of mortality risk. For example, the avian survey report indicates that Horned Larks are often the most commonly found birds killed at wind tower sites. Horned Larks spend a significant amount of time on the ground. Accordingly, it is likely that an index of this species' strike risk formulated based on this project's model would forecast a low mortality risk and be a very poor predictor.

these numbers into a wider perspective. Similar information subject to this same criticism is provided for other species of concern.

Introduction, p. 3-45: The introductory paragraph states that "[t]wo additional special status species, Keen's myotis (Myotis keenii) and Townsend's big-eared bat (Corynorhinus townsendii), may occur but have not been identified in prior surveys." A more accurate statement would be that these two species could occur at the site, but surveys conducted at the site were incapable of identifying these or any other bats, except the hoary bat, to the species level.[11]

Northern Spotted Owl, *Historical Activity Centers,* p. 3-52: This section should be revised to discuss and analyze a May 2010 record of a Spotted Owl in one of the owl circles north of the site. The remaining section addressing Spotted Owl issues should be updated to reflect this finding.

Northern Spotted Owl, *Conservation Support Area,* p. 3.54: Although managed forest is not optimal for spotted owls, it is likely better than wind towers which pose greater mortality risk than young even-aged stands of trees. To that end, the project can only be contrary to the purpose of the CSA. It may be just 0.27% of the area, but it is still a loss that should be disclosed in the discussion (including cumulative impacts).

Northern Spotted Owl, *Spotted Owl Special Emphasis Centers*, p. 3-56: The discussion on this point is obtuse and would benefit from illustration on a map.

The footnote to this discussion indicates that DNR reports that the Mill Creek site has 48 percent of the recommended 40 percent minimum suitable habitat for a spotted owl special emphasis center. The discussion in this section should be expanded to identify what fraction of that suitable habitat occurs where the 1.4 mile circle overlaps with the northwest corner of the project site.

Olive-sided flycatcher, p. 3-56: This section should be expanded to address the following issues. According to Breeding Bird Survey data, this species declined at the rate of 3.3 percent per year between 1966 and 2001. Loss of winter habitat is thought to be one causal mechanism. Another is that managed forests, which superficially replicate the fire-altered forests the birds depend on, may not offer all that the birds need to meet life history requirements.

The last sentence in this paragraph states "none were recorded during the fall of 2004 or the winter of 2008–2009." The Olive-sided Flycatcher is a late spring arrival and departs in late

[11] On page 3-59 states: "Bat surveys conducted during 2007, 2008, and 2009 (Appendices C-8, C-9, and C-10) did not have the ability to detect individual species of bats. Instead, bats were grouped into species with either "high frequency" calls or "low frequency" calls."

summer. Recording the species at the site in fall or winter would be most unusual.

Vaux's Swift, p. 3-57. *See* **General Comment**, Species Abundance above.

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Keen's Myotis and Townsend's Big-eared Bat, pp. 59-60: The bat survey, and consequently the distilled discussion in the DEIS, are lacking in detail. The Keen's Myotis discussion discloses "[b]at surveys conducted during 2007, 2008, and 2009 . . . did not have the ability to detect individual species of bats." That species composition at the site could not be determined serves to emphasize that too little is known about the bat fauna. At a minimum, this lack of knowledge demands that there be post-construction studies to evaluate bat mortality and species composition of fatalities. Also, as (potentially) the first wind energy site to be built in a forest setting in the Pacific Northwest, this project should be used to study the impacts of such development on bats and birds. The U.S. Fish and Wildlife Service Wind Turbine Guidelines Advisory Committee draft report of March, 2010 states, "[o]ur current state of knowledge about bat-wind turbine interactions . . . does not allow a quantitative link between pre-construction acoustic assessments of bat activity and operations fatalities."[12] The report goes on to say:

> There is growing interest in determining whether "low" position samples (~1.5-2 meters) can provide equal or greater correlation with bat fatalities than "high" position samples because this would substantially lower cost of this work. Developers could then install a greater number of detectors at lower cost resulting in improved estimates of bat activity and, potentially, improved qualitative estimates of risk to bats.

Because the applicant sampled at a variety of sites and elevations within the project area, follow-up monitoring could contribute to the body of knowledge regarding the ability of various approaches to pre-implementation sampling to predict post-project mortality.

The Townsend's discussion states "[t]here are no known roosting structures or maternity colonies occurring in the vicinity of the project area. Consequently, the likelihood of occurrence on the site is considered to be low." The absence of evidence should not be assumed to be evidence of absence, especially in light of the caveat disclosed about inability to distinguish species during the bat surveys. This species (and many other bats) will roost singly in tree cavities or behind loose bark, so it is impossible to completely dismiss their presence at the site.

3.4.1.6 Other Wildlife Species

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[12] Wind Turbine Guidelines Advisory Committee. 2010. Wind Turbine Guidelines Advisory Committee Recommendations. US Fish and Wildlife Service Wind Turbine Guidelines Advisory Committee. Draft report to the Secretary of the Interior. March 4.

Birds, p.3-63: The DEIS states that "[m]ean overall bird use in the study area was low compared to these other wind resource areas studied; ranking 19th compared to 24 other wind resource areas . . ." This section should explain that comparisons to other wind resource areas in Washington and Oregon may be of little value as these other areas occupy different habitat types—primarily shrub-steppe and agricultural lands. Comparisons to sites located in Eastern deciduous forests are also questionable because of the different suite of bird species, different structural components to the surrounding forests, and dissimilar migration behavior.

Fall Migration Surveys (2004), p.3-64:

> Eight species of raptors were observed during the survey. Those with the highest use of the site were sharp-shinned hawk, Cooper's hawk, and red-tailed hawk. The highest raptor use observed at the site during 2004 surveys occurred between September 11 and October 12, 2004.

This observation is consistent with annual observations made at the Chelan Ridge Raptor Observation Project site in northern Washington, also on the east side of the Cascades. Raptors throughout the West migrate along ridge lines. Some ranges are located at geographic restrictions or at the confluence of ranges that funnel concentrations of raptors. Data do not indicate this is such a site, but do support the idea of a weak raptor migration through the area. Based on the number of raptors encountered during fall surveys, a rough estimate of the number of birds migrating through the site each fall should be made and included as part of the FEIS.

3.4.2.1 Proposed Action

Western Gray Squirrel, p. 3-75: This section suggests that the lack of oak trees in the project area indicates that the area has poor habitat quality for this species. In the northern part of the species' range, however, oaks are completely lacking. Accordingly, the absence of oak trees should not be used to conlcude that the squirrels are absent from a site.

Special Status Wildlife Species, p.3-77: This section introduces the collision risk model (or "bird exposure index" as it is called in the avian reports) from the avian survey reports. As discussed above, this model is highly suspect. The avian survey reports present numerous caveats when using this model or index: "This index is only based on initial flight height observations and relative abundance (defined as the use estimate) and does not account for other possible collision risk factors such as foraging or courtship behavior."

Reliance upon the Index is subject to criticism on several grounds. Intuitively, the model makes little sense.[13] The model also fails to account for the disproportionate impact of mortality on rare

[13] In the model, A = mean use for species is averaged across all surveys. Many species, especially raptors, demonstrate distinct seasonal use of the site. For example, a large influx of bald eagles into the Columbia River

populations.[14] The model also fails to account for many of the other variables that influence strike risk. These include size of the bird, speed of flight, and direction of flight, or weather conditions which could obscure blades or towers.

Ultimately, there is no indication that this model has any predictive value. Neither the DEIS nor the avian surveys indicate that this model has ever been tested in the field or been utilized prior to the construction of a wind energy facility, followed by post-construction surveys to verify its usefulness.

Given these limitations, any use of numbers from the index should be reported judiciously, sparingly, and with all the caveats identified in Appendix C and the DEIS, otherwise unqualified validity and strength are implied for these indices.

Other Wildlife Species, *Birds,* p. 3-79. The final paragraph in the bird impacts lists a host of caveats, which are cause for concern.[15] Although there is no geographic feature suggesting this

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Gorge occurs in the winter, and the DEIS does report that the bald eagle was more likely to occur on the project site during winter. However, the species' weight in the model would be greatly reduced by the number of data collection efforts made at other times of year. During most times of the year, the risk of collision for a species with strong seasonal occurrences would be zero—it just isn't at the site. On the other hand, at the peak of its occurrence at the site the risk could be far greater. Distributing the exposure risk across multiple seasons thereby presents a deceptive index of exposure risk.

The model contains two additional parameters: Pf = proportion of all observations of species **i** where activity was recorded as flying (an index to the approximate percentage of time species **i** spends flying during the daylight period), and **Pt** = proportion of all flight height observations of species **i** within the rotor-swept height. Both of these parameters are based on information captured at the moment of observation during field data collection. Data derived from the literature regarding each species' natural history and behavior could provide a more accurate picture of long-term behavior. As discussed earlier, almost all birds fly at some point during the day (one of the caveats in the DEIS for the model states "[i]f a species was recorded on the site, but never flying at all, then the exposure index would not be applicable") and at some point flight heights are likely to enter elevations swept by rotors. Both of these parameters likely suffer from small sample sizes of the total number of observations, meaning that statistically there would be little ability to accurately describe behavior based on the small sample size.

[14] Models such as this suggest that strike risk is reduced specifically because a species is rare at the site. To illustrate the point, the loss of one bird from a local population of two hundred (200) has little biological meaning. The loss of one bird from a local population of two (2) means 50 percent of the population is gone. Yet in each example, only one bird was killed.

[15] These caveats include:

> . . . the level of night migration for species associated with the project site is also not known.
>
> . . . risk analyses . . . provide some insight into which species are most vulnerable to turbine collision; however, estimates are based on abundance, proportion of daily activity budget spent flying, and flight height of each species. Observations were made during daylight hours, and do not take into consideration flight behavior or abundance of nocturnal migrants.
>
> . . . the analysis does not account for varying ability among species to detect and avoid turbines, habitat selection, or other factors that may influence exposure to turbine collision.

site constitutes a migratory bottleneck or should host a concentration of migrants, no effort was made to assess passerine migration, particularly at night (when most of these species migrate). In the absence of such an effort and in light of the long list of caveats associated with the collision index, post-construction monitoring and appropriate mitigation (should significant mortality occur) is warranted. Long term impacts should be assessed over a 5 – 10 year period because of our lack of experience with siting wind projects in Western forested ecosystems, and because of the inter-annual variability in migrating bird numbers.

Other Wildlife Species, *Bats,* p. 3-79: Bats are difficult to study. Nonetheless, the fact that of all the bats detected and all the species that could be present at the site, only the hoary bat was identified to species, leaves much information for the site lacking. The DEIS concludes (based on Appendix C reports) that relatively little bat activity was recorded at elevated heights, and two seasons of monitoring did not detect significant migrations. While these are good signs, the DEIS concludes "variable levels of recorded use by bats across years, habitats and recording height above ground indicate that the extent of impacts is difficult to predict at this time." This conclusion demands years of follow-up monitoring to assess actual impacts. As one of the first sites placed in a forested setting, such monitoring is particularly critical to understanding the environmental impacts of wind energy sites in forests.

3.4.3 Mitigation Measures

Post-Construction Avian [and Bat] Mortality Study: Given the large number of unknowns discussed above regarding both bats and birds, the avian mortality monitoring mitigation measure should be expanded to include bats and its duration should be expanded from 2 years to a 5-10 year horizon.

Research-oriented Studies: As one of the first wind power projects proposed for construction within a forested habitat in the Pacific Northwest, this project offers a unique opportunity to conduct research-oriented studies regarding the wind energy/wildlife interactions like the research studies identified in the WDFW Wind Power Guidelines (2009) and the USFWS Wind Turbine Guidelines (2010).

Adoption of USFWS BMPs: The proponent should adopt the Best Management Practices set forth by the USFWS Wind Turbine Guidelines Advisory Committee. Most of the BMPs suggested by the committee are already in the DEIS, but a good faith effort should be made to meet all of these guidelines to minimize project impacts. One BMP not presented in the DEIS includes appropriate lighting of on-site facilities (in addition to the towers themselves) to control light pollution and maintain the dark skies needed by bats and migrating birds.

As a result, actual risk may be lower or higher than indicated by these estimates[.]

The Technical Advisory Committee (TAC): As mentioned earlier, membership in the Technical Advisory Committee should include representatives from Audubon Washington or one of its member chapters, as well as representatives from local, federal and tribal federal and local environmental groups. The TAC should be convened for the life of the project, unless EFSEC determines otherwise.

Procedures for Responding to Avian and Bat Mortality Events: The mitigation measures should include the adoption of procedures specifying how the project will respond to large scale avian or bat mortality events or a take of a Bald Eagle or other species subject to protection under Federal or State law. These procedures should include timeframes for notifying relevant authorities (EFSEC, the TAC, and appropriate local, state and federal authorities) and measures to be taken to ensure no additional environmental harm occurs pending investigation of such an event, including curtailment of operations. Consistent with WDFW Wind Power Guidelines, the Applicant should contact the USFWS to determine appropriate measures to resolve un-authorized take of Endangered Species Act listed species or other species covered by other federal regulations.

Construction Monitoring: Mitigation measures during construction should include retaining an independent environmental monitor to ensure that all Best Management Practices and other mitigation measures are fully observed during the course of construction.

Mitigation for Lost Habitat: Arrangement should be made to mitigate for the permanent and temporary habitat losses caused by the project. Mitigation for permanent loss of habitat should be made on a one to one basis as provided for under the WDFW Wind Power Guidelines and should be developed in conjunction with WDFW and EFSEC.

3.4.4 Unavoidable Adverse Impacts

This section concludes with the statement "[t]he potential for ongoing occurrence of either golden or bald eagles is considered extremely rare." This statement is misleading. While both of these species appear to be rare at the site, surveys have documented their presence at the site. Moreover, both of these species are known to range widely in search of food, and bald eagles have been appearing in increasing numbers during the winter in a location that is only two miles away. Under these circumstances, the DEIS should state that periodic occurrences (in low numbers) of these species at the project site are predictable and are to be expected.

3.6 PUBLIC HEALTH AND SAFETY

3.6.2.1 Proposed Action

Construction, Fire and Explosion, p. 3-97: The wind turbine nacelles will be at a height of 262 feet. This section should discuss the technical challenges that are posed by responding to a fire, explosion or medical emergency at such a height, the types of emergency equipment necessary to respond to emergency events, and who (local fire departments, DNR or the Applicant) will be responsible for supplying and operating this equipment.

Operation, Fire and Explosion, p. 3-99: This section acknowledges that turbine malfunctions resulting in fires have been known to occur. Given that the turbines nacelle are located hundreds of feet in the air in a windy area surrounded by land being managed for timber production, it would appear that a fire could pose a serious threat to the project site and surrounding property. This section should be expanded to discuss the potential environmental impacts that may arise from a turbine fire and the actions that would be taken to minimize those impacts. This section should discuss whether equipping the turbines with fire suppression equipment is advisable.

3.6.3 Mitigation

Equipping the turbines with fire suppression equipment should be considered as a possible mitigation measure.

3.7 NOISE

3.7.1.3 Affected Environment

The Applicant intends to harvest trees in the vicinity of the project site prior to construction. This section should discuss whether the harvest of trees will affect the validity of the pre-construction sound study with a specific focus on the residential sites identified in the first paragraph of Section 3.7.1.3.

3.7.2 Impacts

This section should discuss on-site alternatives regarding the placement of wind turbine towers and potential noise impacts.

3.7.3 Mitigation

If warranted, mitigation measures should include removal or reconfiguration of turbines to minimize impacts on residential receptors.

If warranted, mitigation measures should include maintenance of vegetative buffers between the project and residential receptors to minimize sound impacts.

3.8 LAND USE AND RECREATION

3.8.1.2 Recreation

The Mark O. Hatfield Wilderness Area is within a 25 mile radius of the proposed project. Environmental impacts to this wilderness area should be identified and discussed in this section.

3.8.3.1 Proposed Action

Changes to Existing Land Use Patterns and Recreation, *Project Operation,* p. 3-151: In this section, the authors suggest that the project will not impact local agricultural tourism because wineries located in southeastern Washington are "thriving" despite the fact that there are four wind power facilities located between Walla Walla and Kennewick. This paragraph should be redacted. Correlation does not establish causation. Without more detailed analysis, the fact that wineries and wind power operations co-exist in Walla Walla County should not be used to predict the environmental impact of this project in Skamania County.

Consistency with Applicable Land Use Regulations, Columbia River Gorge National Scenic Area Management Plan, p. 3-154: Under the bullet point entitled "Scenic Appreciation and Scenic Travel Corridors," strike "only" from the discussion so that the sentence reads: "The project would have minor to moderate impacts on visual quality as viewed from travel corridors inside the Scenic Area."

Trails and Pathways. The discussion in this section needs to be clarified. The project will have low to moderate visual impacts on viewpoints from some trails and pathways in the CRGNSA. The statement that "[t]he project would not affect any trails or pathways in the Scenic Area" is incorrect.

3.8.3.2 No Action Alternative

If a No Action Alternative is pursued, there will be no impact on visual resources.

3.8.4 Mitigation Measures

This section should discuss reconfiguration or removal of turbines to minimize visual impact on scenic area as a mitigation measure.

3.8.5 Unavoidable Adverse Impacts

If the applicant is unwilling or unable to reconfigure turbines to minimize visual impacts, then this section should identify minor to moderate impacts on visual resources within the CRGNSA as an unavoidable adverse impact.

3.9 VISUAL RESOURCES

3.9.1 Methodology

The methodology applied should be expanded to include the Visual Resource Management system employed by the Bureau of Land Management. The CRGNSA has established visual resource objectives for a large and specific area within the Columbia River Gorge. Although the project is located just outside the scenic area boundaries, it will be clearly visible from within the scenic area and will impact the area's scenic values. That the project is located just outside the scenic area boundary should not exclude it from an analysis that fully identifies and discusses the project's visual impact on this nationally-recognized, high value regional view shed.

3.9.1.3 Preparation of Visual Simulations

The photographs underlying the visual simulations are problematic. Visual simulation photographs should be taken with a 50 mm lens, as this focal length most closely captures human visual perception. *See Environmental Impacts of Wind-Energy Projects,* National Research Council (2007) at 247. The use of other focal lengths distorts the image and makes it difficult to compare impacts between different photographs. *Id.* If a digital camera is used, it should be set at the highest resolution possible. *Id.* The visual simulations should also be re-sized to a 10 x 12 inch format, at a minimum, for comfortable arm's length viewing. *Id.* at 250.

Most of the simulations produced in the DEIS appear to be taken from viewpoints along roads and highways. Additional simulation should be provided with views from the Columbia River, hiking trails, and wilderness areas. *See Id.* at 251-52.

The DEIS states that simulations were not prepared for night time conditions. An inventory of current night time lighting conditions would be helpful in assessing the extent to which FAA mandated turbine lighting will impact the night sky.

3.9.2.3 Viewpoints

See comments under sections 3.91 and 3.9.1.3.

Columbia River Gorge National Scenic Area – p.3-194

Visual impacts are among the issues to be addressed in NEPA and SEPA analysis. Although Congress has expressed reluctance to apply Scenic Area restrictions to lands lying outside the scenic area boundary, land uses outside the scenic area will impact the visual quality within the scenic area and should be subject to visual analysis consistent with the values encompassed by the CRGNSA.

3.9.3.2 No Action Alternative

There is no evidence in the record that construction of project will result in an appreciable decrease in this region's development or reliance on fossil fuels or prevent the construction of such plants in the future. The assertion that failure to build the project will result in continued impairment of air quality and visual resources is not well-founded and should be removed from the discussion.

3.9.4 Mitigation Measures

In addition to painting the turbines an unobtrusive, non-reflective color and following FAA lighting guidelines, the following additional mitigation should be included:

- Either reducing or reconfiguring the turbine locations to minimize visual impacts.
- Explore whether vegetative buffers can be grown or maintained to minimize visual impacts.
- To the extent visual impacts are unavoidable, mitigation should include the preservation of off-site visual resources.

3.10 HISTORICAL AND CULTURAL RESOURCES

3.10 .2.2 Cultural Resources Overview

The FEIS should incorporate the results of archaeological field inventory conducted by Yakama Nation's Cultural Resources Department.

3.11 TRANSPORTATION

3.11.2 Impacts

This section should identify likely haul routes for concrete that will be used for the wind turbine foundations and discuss any associated environmental impacts.

3.14.3 CUMULATIVE IMPACT ANALYSIS

3.14.3.5 Habitat and Wildlife

Bird and Bat Species, p. 3-274: This section provides: "Erickson et. al. (2005) concluded that these sources of mortality [i.e., other anthropogenic sources] are likely much larger than the

potential impacts of wind power development." This statement of relativism is misleading and is not consistent with the intent of a cumulative impacts analysis. While on its face the statement is likely true, the question is whether wind energy, by adding incrementally to mortality, would be enough to negatively impact bird or bat species.

Discussion of West Cumulative Impact Study, pp. 3-275-76: The cumulative impact study prepared by West, Inc. for the Klickitat County Planning Department has contextual issues that need to be addressed. As the DEIS points out, habitat assessed by West for Klickitat County is significantly different from that at the project site. The DEIS states that "none of the estimated fatalities were anticipated to cause a significant loss in population, and no cumulative impacts were anticipated." Since the completion of the West report, however, the number of occupied Ferruginous Hawk nests in Washington has dropped precipitously.[16] The West report does disclose that this species could be at risk from wind energy facilities, and suggests that exclusion zones around core habitats might be warranted. In light of the current plight of this species, the "no impact" conclusion needs to be re-evaluated.

Another problem with the West report is that it focuses solely on impacts from the full build out of all anticipated wind development projects in the Columbia Plateau Ecoregion. While informative, this analysis misses the point of a cumulative impacts analysis, which is to evaluate the impact of the current project (in the West report, all anticipated wind energy development) in conjunction with all other reasonably foreseeable stresses on the resource – the analysis should have been wider ranging and not restricted to wind energy development.

Cumulative effects result from spatial (geographic) and temporal (time) crowding of environmental perturbations. The effects of human activities will accumulate when a second perturbation occurs at a site before the ecosystem can fully rebound from the effect of the first perturbation.[17] Fragmentation and habitat degradation are two of the major problems in the shrub-steppe. Development, land conversion, fire, incompatible grazing practices, and weed invasion are all driving mechanisms. The question of whether wind energy development in the Columbia Plateau Ecoregion could add synergistically to these sources of stress is not addressed in the West report.

The DEIS mentions that climate change is not evaluated as a source of stress. Climate change projections for Washington and the Pacific Northwest suggest dramatic changes in East-slope forests (as well as shrub-steppe), and these changes should be discussed in the context of cumulative impacts.

The cumulative impacts discussion in the DEIS concludes with the following sentence:

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[16] McCullen, K. 2010. Eastern Washington sees fewer ferruginous hawks. Tri-city Herald. May 9.

[17] Council on Environmental Quality. 1997. Considering Cumulative Effects Under the National Environmental Policy Act. Council on Environmental Quality.

> For example, one study from 2009 estimated that, based on performance in the United States and Europe, wind farms and nuclear power stations are responsible each for between 0.3 and 0.4 bird fatalities per gigawatt-hour (GWh) of electricity while fossil-fueled power stations are responsible for about 5.2 fatalities per GWh (Sovacool 2009).

The Sovacool (2009) paper appears to be fundamentally flawed in its assumptions. Willis et al. (2010)[18] published a rebuttal to this paper that would suggest that its premises are unsound. This line of reasoning should either be removed from the FEIS, or better supporting literature provided to support the point.

Thank you for this opportunity to submit comments on the Whistling Ridge DEIS. Please feel free to contact me if you have any questions or need clarification regarding my comments.

Sincerely,

H. BRUCE MARVIN
Assistant Attorney General
Counsel for the Environment

HBM:cv

cc: By email:
BPA (and by mail)
EFSEC (and by mail)
Al Wright
C. Robert Wallis
Jason Spadaro
Kyle Crews
Tim McMahan
Darrel Peeples
Tony Usibelli
Gary Kahn
Dorothy H. Jaffe
Nathan Baker
J. Richard Aramburu

[18] Willis, C. R., R. M. R. Barclay, J. G. Boyles, R. M. Brigham, V. Brack, Jr., D. L. Waldien, and J. Reichard. 2010. Bats are not birds and other problems with Sovacool's (2009) analysis of animal fatalities due to electricity generation. Energy Policy 38:2067–2069.

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Klickitat and Cascades Tribes of the Yakama
Johnson Meminick

Michelle, Kayce (UTC)

From: Vervair, Candace (ATG)
Sent: Friday, August 27, 2010 2:17 PM
To: [redacted]
Cc: [redacted]
Subject: Whistling Ridge Energy Project

Please see attached letter from AAG H. Bruce Marvin, Counsel for Environment:

Letter 20100827 Comments on DE..

[redacted]

Rob McKenna
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Via Email and First Class Mail

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Re: Whistling Ridge Energy Project Draft Environmental Impact Statement: Comments

To Whom It May Concern:

Counsel for the Environment (CFE) appreciates this opportunity to comment on the Whistling Ridge Energy Project (Whistling Ridge) Draft Environmental Impact Statement (DEIS). The following comments seek to ensure that the Final Environmental Impact Statement (FEIS) fully captures and analyzes the proposed project's environmental impacts, potential mitigation measures, and reasonable off-site and on-site alternatives so that permitting authorities can make a fully informed decision. CFE takes no position regarding the merits of the project at this time.

1.0 Summary and Purpose of and Need for Action

1.4 ALTERNATIVES ANALYSIS

The Alternatives Analysis is limited to a No Action alternative. While the DEIS states that other locations, project sizes and project configurations were considered, it fails to identify these alternative locations or configurations, or adequately explain why they were not worthy of additional analysis. As described in more detail below, the off-site and on-site alternative analyses should be expanded to include in-depth descriptions of the criteria used to select the proposed site and the proposed project configuration, as well as a focused discussion about why other sites and project configurations were excluded from further review.

1.4.1 Proposed Action

The second bulleted factor in this section indicates that the site must be large enough to accommodate enough wind turbines to produce a minimum of 70 MW of electricity. Because the wind does not blow at a constant rate, wind turbines rarely operate at 100% percent capacity. Accordingly, references to wind generating capacity should be expressed in nameplate generation capacity.

The fourth bulleted factor in this section states: "The site has a long history of commercial logging and associated absence of *native* habitat, reducing or eliminating the need to clear additional forest land." This and similar statements regarding the "absence of native habitat" are made in several places in the document (*e.g.*, 3.4.1.1), and the statement is misleading. With the exception of the weeds identified at the site and disclosed elsewhere in the document, grass, forb, shrub, and tree species at the site are predominantly native. A more accurate statement would be that the site is heavily managed and manipulated and is not in a *natural* state, being maintained in a state of disclimax and with monotypic forest stands. The affected environment description provided in Chapter 3 (3.4.1.1 and 3.4.1.2) is far more accurate.

The final paragraph in this section states that the project would have a total nameplate capacity of "up to 75 MW." The second bulleted factor in this section states that project's minimum nameplate capacity is 70 MW. It is unclear how these two figures relate to one another. The project's maximum and minimum nameplate generating capacity levels should be clearly identified and described in a single location.

1.4.1.1 Wind Turbines

The generating capacity should be referenced as nameplate capacity. This section should also clarify whether the size of the turbines will be consistent throughout the project or whether the size will vary from tower to tower.

1.4.2 No Action Alternative

This section states that the only circumstance the project will not be built is if the responsible agencies (BPA or EFSEC) withhold their authorization. There are a multitude of reasons why a proposed project may not be built. This statement is not accurate and should be removed from the FEIS.

1.4.3 Alternatives Considered But Eliminated From Detailed Study

This section explains why the no action alternative was the only alternative analyzed. In doing so, it references a set of technical and economic requirements that purportedly eliminated all other potential project sites from consideration. None of the eliminated off-site locations,

however, are identified, and the DEIS does not contain the underlying technical and economic data the Applicant used to eliminate the undisclosed sites from further consideration. At a minimum, the FEIS should include detailed information regarding the economic and technical data underlying the site selection criteria, as well as the locations of all potential alternative sites considered so that the decision to limit review to the No Action alternative can be independently verified.

1.4.3.1 Alternative Project Locations

The DEIS states that the Applicant applied the following criteria to determine whether alternative project locations were available for EIS review: adequate wind supply, applicant ownership of land, ability to operate wind turbines without impacting commercial timber operations, and proximity to high voltage transmission lines. The DEIS analysis and discussion of the alternative location selection process is set forth in a single sentence:

> No other sites were identified that are under the ownership of the Applicant or as close to transmission infrastructure facilities.

DEIS at p. 1-14. This summary analysis should be expanded to include a detailed description of the criteria used to select the project site, the location of the alternative sites that were considered, and discussion regarding why these alternative sites were ultimately eliminated from further consideration.[1] The FEIS should also be expanded to consider the Middle Mountain Project, which is only 12 miles from the proposed project site, as an alternative wind generation site.

1.4.3.2 Larger or Smaller Generation Facility Size

The FEIS should be expanded to address on-site alternatives that reduce the number of turbines and/or reconfigure the turbine strings. The purpose of the alternatives analysis is to explore whether the needs of the project can be accomplished through less environmentally impactful means. During the scoping hearings, the public and National Parks Service raised concerns regarding the project's visual impacts, particularly regarding the location of Turbine String A.[2]

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[1] Ideally, this discussion would include information sufficient to independently verify the decision to eliminate these alternative sites from further consideration. This would include the location of SDS holdings in Southern Washington and Northern Oregon, wind resources available in those areas, the location of transmission lines, economic parameters for the project, as well as economic information regarding the project's interrelationship with timber harvesting activities.

[2] Turbine String A is also unique in that it contains the turbines in closest proximity to residential dwellings and is located on a parcel of land that is zoned FOR/AG 20, which would require issuance of a conditional use permit under Skamania County's land use laws. *See* DEIS at p. 3-153.

This section asserts that the project must be reviewed as an "integrated whole" from which no piece may be eliminated and that if turbines are removed from the project design, "other locations must be found to replace those turbines to maintain the minimum necessary capacity." These assertions are unsupported by analysis and appear to be inconsistent with the project description in both the Site Certification Application (SCA) and the DEIS. Both the SCA and the DEIS state that the project will have a total nameplate generating capacity of approximately 75 MW and will be comprised of up to 50 towers equipped with turbines with nameplate generating capacities ranging from 1.2 to 2.5 MW .[3] Assuming that a 2 MW turbine is selected, the maximum generating capacity of 75 MW could be satisfied with the installation of 38 turbines (resulting in a reduction of 12 turbines).[4] If a 2.5 MW turbine is selected, the number of towers could be reduced to 30.

Reducing the number of turbines without sacrificing nameplate generating capacity is not merely hypothetical. The Kittitas Valley Wind Power Project recently reduced its total number of turbines from a maximum of 65 to a maximum of 52 turbines without any change in nameplate generating capacity. The FEIS should include a discussion regarding how the project may be reconfigured through the use of turbines with larger generating capacities.

The FEIS should include information regarding the strength and viability of wind resources found throughout the site. This would include information gathered from the on-site meteorological tower regarding the strength, quality, direction and location of on-site wind resources.

1.4.3.4 Alternative Project Configurations

See comments under § 1.4.3.2, Larger or Smaller Generation Facility Size.

1.4.3.6 Alternative Access Roads

Private logging road CG 2930 should be subject to detailed review as an alternative access road. The original Site Certification Application proposed accessing the site using this route. On October 12, 2009, the Applicant submitted an amended application that abandoned the CG 2930

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[3] The SCA at Section 2.3.3.1, for example, states that "[t]he project would consist of <u>up to 50 wind turbines</u>" and that each turbine would have a nameplate generating power of somewhere between 1.2- to 2.5 MW. (Emphasis added). The DEIS contains an identical description.[3] *See* DEIS at §1.4.1.1. Both the SCA and DEIS also state that the project must have a generating capacity of "up to 75 MW." *See* SCA at §2.3.2 (Project Overview – "up to 75 MW"); DEIS at §1.4.1 ("minimum of 70 MW;" "up to 75 MW").

[4] Recently permitted projects appear to be installing turbines with nameplate generation capacities of 2.0 MW or larger. The Desert Claim Wind Power Project, for example, will be installing 2 MW turbines. *See* Desert Claim Wind Power Project Final Supplemental EIS at 2-13. The recent expansion to the Wild Horse Wind Power Project also used 2.0 MW turbines.

route in favor of the West Pit Road with the stated purpose of removing the entire project outside the CRGNSA boundary. *See* October 12, 2009 Letter from Whistling Ridge Energy Project to EFSEC re: Submittal of Amended Application 2009-01. Although removing this route from the project plan may dispose of certain regulatory hurdles, the West Pit Road is a longer route that traverses steeper terrain and will likely have a higher environmental impact than the CG 2930.[5] Accordingly, this CG 2930 should be evaluated as an alternative.

1.6 SUMMARY OF POTENTIAL PROJECT IMPACTS AND MITIGATION MEASURES

Earth – p. 1-22 – Impact of Proposed Project: Much of the West Pit Road is located in a Class II Landslide Hazard Area. This section should summarize and address anticipated impacts, if any, related to Class II Landslide Hazard Areas.

Air Quality – p. 1-22 – Impact of No Action Alternative: This section identifies impacts from construction of fossil fuel power plants as a potential impact under the no action alternative. There is nothing in the record establishing that proposed project is being built in lieu of fossil fuel powered plant or that its construction will reduce the number of fossil fuel powered generation facilities in the future. Indeed, intermittent nature of wind generated power may require the construction of fossil fuel facilities to provide a back up power source.[6]

Biological Resources – p. 1-23 – Impact of No Action Alternative: *See* comments regarding Air Quality – p. 1-22 – Impact of No Action Alternative *infra*.

Biological Resources – p. 1-24 – Impact of Proposed Project: This section states that there "would likely be some mortality to birds and bats due to turbine collision and displacement." This should be revised to state that operation of project "will result in mortality to some birds and bats . . ."

Biological Resources – p. 1-24 – Design and Mitigation Measures: Remove qualifier "extensive" from pre-project assessment of wildlife habitat conducted under WDFW Wind Power Guidelines.

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[5] Long sections of West Pit Road crosses land designated as a Class II landslide hazard area. *See* DEIS Figures 3.1-1, 3.1-4 and 3.11-2

[6] The No Action Alternative analysis appearing on p. 3-92 and in other section of the DEIS contains a more accurate description of the possible impacts if no action is taken:

> It is likely that the region's power needs would be met through energy efficiency and conservation measures, existing power generation, or the development of new power generation. Base load demands would likely be filled through expansion of existing, or development of new thermal generation such as gas-fired combustion turbine technology. The impacts would depend on the type, location, and size of the facility proposed.

Biological Resources - p. 1-24 – Design and Mitigation Measures: A Technical Advisory Committee (TAC) is described, including a description of the stakeholders comprising this group. Because the overarching concern for biological resources is bird and bat mortality, a representative of the Audubon Society should be specified and included in the TAC.[7]

Biological Resources - p. 1-25 – Design and Mitigation Measures: The post construction avian mortality monitoring should include bat mortality monitoring as so little is known about bat species' composition and mortality risk at the site. The monitoring program should also analyze the accuracy of the pre-construction risk and mortality predictions. Because the project is being proposed in a new habitat type (forested) for Washington wind energy projects, and because so little is known about bat use of the site, bird and bat monitoring should be conducted for five (5) years, rather than the proposed two (2) years.

Visual Resources – p. 1-28 – Impact of Proposed Project: This section should clearly state that as proposed the project **will** have low to moderate visual impacts from key viewpoints, including key viewpoints within the CRGNSA.

1.7 SUMMARY OF UNAVOIDABLE ADVERSE IMPACTS

This section should plainly identify and summarize unavoidable **adverse** impacts. References to beneficial impacts should be removed. The description of unavoidable visual impacts (Table 1-2, p. 1-35) should be re-drafted to read as follows:

> This project will have unavoidable adverse visual impacts on the surrounding area. Visual impact analysis establishes that the project will have low to moderate visual impacts from key viewpoints, including viewpoints within the CRGNSA.

1.8 CUMULATIVE IMPACTS

The discussions of existing development in section 1.8.1.1 and reasonably foreseeable future development in section 1.8.1.2 appear to be inconsistent. In section 1.8.1.1, the authors considered wind projects located 35 to 70 miles from the proposed project in their cumulative analysis. In section 1.8.1.2, however, the authors chose to disregard two proposed wind power projects (Juniper Canyon and Summit Ridge) because they are "too far away (generally more than 20 miles) from the Whistling Ridge Energy Project site to result in cumulative impacts." Given that the cumulative analysis of existing impacts considered projects that were located 70 miles away, the analysis of cumulative impacts relating to reasonably foreseeable future

[7] The TAC should also be expanded to include representatives from local public interest groups, including interveners Friends of the Columbia Gorge and Save Our Scenic Area.

development should apply similar criteria or include an explanation as to why different criteria were applied.

1.8.1 Projects Considered

The cumulative impact section should discuss the intermittent nature of wind energy generation and the need for easily dispatchable hydro-electric or fossil fuel generating plants to meet demand when the wind is not blowing.

2.0 Proposed Action and Alternatives

2.1 PROPOSED ACTION

2.1.2 Project Overview

Table 2-1 – Permanent disturbance areas should include the permanent parking areas adjacent to each turbine that will be necessary to conduct turbine repairs and maintenance. Also there appears to be some inconsistency in the road width used to determine the impact area outside the project.

2.1.3.7 Access Roads

Neither the Application nor the DEIS include a description of parking areas that will have to be maintained adjacent to each turbine for construction and maintenance purposes. The space consumed by these parking areas should also be included in the calculations for permanently disturbed environment.

2.1.4.1 Construction

The size and location of proposed laydown areas should be disclosed and evaluated in the FEIS.

The size and location of permanent parking lots next to each turbine should be included and evaluated in the FEIS.

This section should include a discussion regarding how concrete will be transported to the construction site. If a concrete batch plant is going to be used, its size and location should be disclosed in the FEIS. If concrete is going to be transported to the site, information regarding the trucking route and potential environmental impacts (air pollution, traffic, etc.) should be disclosed and evaluated in the FEIS.

2.1.6 Forest Harvest During Project Construction and Operation

Mitigation measures for construction of the project should include off-site mitigation for permanently disturbed or cleared areas that would constitute "forest conversions." This would include turbine parking areas and any permanent laydown area at the site.

2.1.7 Project Decommissioning

The Applicant has indicated that the life of the project is expected to be 30 years, at which time the project will either be upgraded ("re-powered") or decommissioned. If the current project receives EFSEC approval, any proposal to "re-power" the project or extend operation of the project beyond its anticipated life span should be reviewed by EFSEC as an amendment to the Site Certification Agreement. Such review should require an updated evaluation and assessment of the environmental impacts posed by the upgrade or extended life of the project.

2.3. NO ACTION ALTERNATIVE

See comments in response to Section 1.4.3 Summary of No Action Alternative.

2.3.6 Alternative Access Roads

See comments in response to Section 1.4.3.6 Alternative Access Roads.

2.4 BENEFITS AND DISADVANTAGES OF DELAYING PROJECT IMPLEMENTATION

This section summarizes the benefits and disadvantages that will result from delaying the project. It is drafted, however, in a way that minimizes the benefits and over-exaggerates the disadvantages of delay. For example, statements to the effect that a delay will prevent the creation of new construction jobs are simply not accurate. A delay in constructing the project will result in a delay in the creation of new construction jobs, just as a delay in constructing the project will delay visual impacts from the project.

2.5 COMPARISON OF ALTERNATIVES

Government action or inaction is not the only possible reason that the project will not be built. For the reasons discussed earlier, assertions that the No Action Alternative will only arise if EFSEC or BPA deny approval of the project should be redacted.

As discussed above, the DEIS should be expanded to include off site and on site alternatives. Without these additional alternatives, the comparison of the limited alternatives set forth in Table 2-5 is of questionable value for purposes of conducting meaningful environmental impact analysis under NEPA and SEPA.

3.0 Affected Environment, Impacts and Mitigation

Generally, discussions in this section should be expanded to include off site and on site alternatives.

3.1 EARTH

3.1.1.4 Geologic Hazards

This section should be expanded to address geologic hazard issues related to the proposed access road (West Pit Road). That this road traverses lands identified as Class II Landslide Hazards is of particular concern. *See* Table 3.1-4.[8]

The DEIS should also be revised to include a discussion regarding the extent to which Skamania County has assessed whether the project site or the area traversed by the proposed access road contains Class I landslide hazards (Severe).[9] If such an assessment has not been done, the discussion regarding landslide hazards should be expanded to determine whether there are affected areas that would otherwise meet the criteria for a Class I landslide hazards, even though they have not been formally designated as such by the County.

3.1.2.1 Proposed Actions

Access Road. This section should be expanded to include a discussion of geologic hazards and their impact on the access road during both the construction and operation of the proposed project, including the environmental impacts that may arise from locating the access road in a Class II landslide area.

Soil Contamination. The discussion regarding soils does not address possible presence of contaminants along the access road right of way or at the project site. The FEIS should include the results of a Phase I Environmental Site Assessment to determine if and where contaminated soils may exist.

Volcanic Activity. This section should discuss how ash from a volcanic eruption may impact the operation of wind turbines, transmission lines, and other elements of the project.

3.1.2.2 Mitigation Measures

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[8] Table 3.1-4 should be revised so that the locations of the proposed access road, as well as other access road alternatives, are easily discernable.

[9] To qualify as a Class I landslide hazard, the location must be designated as such by the local legislative body, in this case Skamania County. *See* DEIS at § 3.1.1.4 *Landslides.*

This section should describe containment and remediation measures that will be taken in the event contaminated soils are found during construction.

The scope of the mitigation measures should be expanded to address geologic hazards associated with the access road and address how the project will be accessed if the proposed access road is damaged or destroyed by a catastrophic geologic event.

The project is located in the vicinity of several volcanoes and the access road traverses land designated as a Class II landslide hazard. This section should describe and discuss mitigation measures designed to protect the environment and human health and safety in the event of a catastrophic geologic event.

3.4 BIOLOGICAL RESOURCES

3.4.1.2 Habitats

Conifer Forests – p.3-37. The second to the last sentence in this section states that "[t]he majority of coniferous forests within the project site is managed for commercial timber production, and is replanted following harvest." "Majority" could mean anywhere from 51 percent to 100 percent. A more quantitative disclosure is needed here.

Conclusion - p. 3-39. The final sentence in this section states that "[t]he project site is not located within any known wildlife corridor, flyway, foraging area, or migratory route." This statement is problematic as the site lies within the landscape-scale Pacific Flyway, which is adjacent to the Columbia River gorge (which, in turn, is a significant migratory flyway, particularly for water birds), and all north-south cordilleras in the state support at least a weak raptor migration. Elsewhere in the document (*e.g.*, p. 46), raptor activity at the site is ascribed to migratory behavior. Also, some of the bat behavior observed at the site is assumed to be foraging behavior, and birds and other wildlife are known to forage in the project area. Use of the term "known" is also problematic and suggests the need for additional study. For example, no data was collected to assess bird or bat migration activity at the site.

3.4.1.5 Special Status Wildlife Species

General Comments, Strike Risk Modeling: The avian surveys for the project use a very crude index to rank relative strike risk among the various species of birds recorded at the site. One of the three variables in the strike risk model relies on where in the vertical air column (in or out of the rotor swept zone) birds were initially detected when they were first seen.[10] No observations of bird behavior were made over any extended period of time. The behavior was apparently not even recorded for all observations, as in some years the metric is absent. Furthermore, as highly mobile species, almost any bird will at some point cross the rotor-swept area.

Some very sophisticated strike risk models have been developed around wind energy towers. The validity of at least some of these models is still in question. Nonetheless, they attempt to quantify the amount of time a species spends in the rotor strike zone, and assign risk based in part on the size, speed, and flight paths of birds crossing the rotor swept area. While implementation of such complex models may not be necessary (at this point) for this project, reliance on the simplistic model used for this project is misleading and the results should be removed from the DEIS, or at the very least the model's limitations (which are discussed in some detail in avian survey reports) should be fully disclosed in the body of the DEIS to ensure that the reader is not misled.

The avian survey report (Appendix C-4) indicates that the index is formulated to help rank the relative risk each species might face in the presence of wind towers. At best, the index may give some insight among the species at this site, but comparison to other sites, particularly in different habitat types from the proposed project, is highly suspect and appears to be untested. Appendix C-4 also states "...no relationships have been observed between overall use by bird types other than raptors, and fatality rates of those bird types at wind-energy facility. Such a lack of predictive ability also speaks for a need for long-term follow up monitoring to assess the true impacts of the project on birds.

General Comment, Species Abundance: Discussion regarding the abundance of species at the site lack context. For example, the DEIS reports that fifteen (15) swifts were seen in fall 2004, four (4) in summer 2006, and eleven (11) in summer 2009. The DEIS, however, fails to place these types of figures into a context. Do these observations constitute "a lot"? "Very few"? Compared to the next watershed west, or the core of the species range? In the case of the swifts, and indeed most species recorded in the project area, subjectively it seems that few of any given species are represented. However, in the case of migrating birds (such as the 15 swifts observed in fall 2004), this could represent a rate. In other words, there could be 15 swifts per day, or per hour trying to migrate across the project site. There is simply no contextual information to put

[10] Glancing at a bird and assigning it to "in" or "out" of the rotor swept area is an exceptionally poor predictor of mortality risk. For example, the avian survey report indicates that Horned Larks are often the most commonly found birds killed at wind tower sites. Horned Larks spend a significant amount of time on the ground. Accordingly, it is likely that an index of this species' strike risk formulated based on this project's model would forecast a low mortality risk and be a very poor predictor.

these numbers into a wider perspective. Similar information subject to this same criticism is provided for other species of concern.

Introduction, p. 3-45: The introductory paragraph states that "[t]wo additional special status species, Keen's myotis (Myotis keenii) and Townsend's big-eared bat (Corynorhinus townsendii), may occur but have not been identified in prior surveys." A more accurate statement would be that these two species could occur at the site, but surveys conducted at the site were incapable of identifying these or any other bats, except the hoary bat, to the species level.[11]

Northern Spotted Owl, *Historical Activity Centers*, p. 3-52: This section should be revised to discuss and analyze a May 2010 record of a Spotted Owl in one of the owl circles north of the site. The remaining section addressing Spotted Owl issues should be updated to reflect this finding.

Northern Spotted Owl, *Conservation Support Area*, p. 3.54: Although managed forest is not optimal for spotted owls, it is likely better than wind towers which pose greater mortality risk than young even-aged stands of trees. To that end, the project can only be contrary to the purpose of the CSA. It may be just 0.27% of the area, but it is still a loss that should be disclosed in the discussion (including cumulative impacts).

Northern Spotted Owl, *Spotted Owl Special Emphasis Centers*, p. 3-56: The discussion on this point is obtuse and would benefit from illustration on a map.

The footnote to this discussion indicates that DNR reports that the Mill Creek site has 48 percent of the recommended 40 percent minimum suitable habitat for a spotted owl special emphasis center. The discussion in this section should be expanded to identify what fraction of that suitable habitat occurs where the 1.4 mile circle overlaps with the northwest corner of the project site.

Olive-sided flycatcher, p. 3-56: This section should be expanded to address the following issues. According to Breeding Bird Survey data, this species declined at the rate of 3.3 percent per year between 1966 and 2001. Loss of winter habitat is thought to be one causal mechanism. Another is that managed forests, which superficially replicate the fire-altered forests the birds depend on, may not offer all that the birds need to meet life history requirements.

The last sentence in this paragraph states "none were recorded during the fall of 2004 or the winter of 2008–2009." The Olive-sided Flycatcher is a late spring arrival and departs in late

[11] On page 3-59 states: "Bat surveys conducted during 2007, 2008, and 2009 (Appendices C-8, C-9, and C-10) did not have the ability to detect individual species of bats. Instead, bats were grouped into species with either "high frequency" calls or "low frequency" calls."

summer. Recording the species at the site in fall or winter would be most unusual.

Vaux's Swift, p. 3-57. *See* **General Comment**, Species Abundance above.

Keen's Myotis and Townsend's Big-eared Bat, pp. 59-60: The bat survey, and consequently the distilled discussion in the DEIS, are lacking in detail. The Keen's Myotis discussion discloses "[b]at surveys conducted during 2007, 2008, and 2009 . . . did not have the ability to detect individual species of bats." That species composition at the site could not be determined serves to emphasize that too little is known about the bat fauna. At a minimum, this lack of knowledge demands that there be post-construction studies to evaluate bat mortality and species composition of fatalities. Also, as (potentially) the first wind energy site to be built in a forest setting in the Pacific Northwest, this project should be used to study the impacts of such development on bats and birds. The U.S. Fish and Wildlife Service Wind Turbine Guidelines Advisory Committee draft report of March, 2010 states, "[o]ur current state of knowledge about bat-wind turbine interactions . . . does not allow a quantitative link between pre-construction acoustic assessments of bat activity and operations fatalities."[12] The report goes on to say:

> There is growing interest in determining whether "low" position samples (~1.5-2 meters) can provide equal or greater correlation with bat fatalities than "high" position samples because this would substantially lower cost of this work. Developers could then install a greater number of detectors at lower cost resulting in improved estimates of bat activity and, potentially, improved qualitative estimates of risk to bats.

Because the applicant sampled at a variety of sites and elevations within the project area, follow-up monitoring could contribute to the body of knowledge regarding the ability of various approaches to pre-implementation sampling to predict post-project mortality.

The Townsend's discussion states "[t]here are no known roosting structures or maternity colonies occurring in the vicinity of the project area. Consequently, the likelihood of occurrence on the site is considered to be low." The absence of evidence should not be assumed to be evidence of absence, especially in light of the caveat disclosed about inability to distinguish species during the bat surveys. This species (and many other bats) will roost singly in tree cavities or behind loose bark, so it is impossible to completely dismiss their presence at the site.

3.4.1.6 Other Wildlife Species

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[12] Wind Turbine Guidelines Advisory Committee. 2010. Wind Turbine Guidelines Advisory Committee Recommendations. US Fish and Wildlife Service Wind Turbine Guidelines Advisory Committee. Draft report to the Secretary of the Interior. March 4.

Birds, p.3-63: The DEIS states that "[m]ean overall bird use in the study area was low compared to these other wind resource areas studied; ranking 19th compared to 24 other wind resource areas . . ." This section should explain that comparisons to other wind resource areas in Washington and Oregon may be of little value as these other areas occupy different habitat types—primarily shrub-steppe and agricultural lands. Comparisons to sites located in Eastern deciduous forests are also questionable because of the different suite of bird species, different structural components to the surrounding forests, and dissimilar migration behavior.

Fall Migration Surveys (2004), p.3-64:

> Eight species of raptors were observed during the survey. Those with the highest use of the site were sharp-shinned hawk, Cooper's hawk, and red-tailed hawk. The highest raptor use observed at the site during 2004 surveys occurred between September 11 and October 12, 2004.

This observation is consistent with annual observations made at the Chelan Ridge Raptor Observation Project site in northern Washington, also on the east side of the Cascades. Raptors throughout the West migrate along ridge lines. Some ranges are located at geographic restrictions or at the confluence of ranges that funnel concentrations of raptors. Data do not indicate this is such a site, but do support the idea of a weak raptor migration through the area. Based on the number of raptors encountered during fall surveys, a rough estimate of the number of birds migrating through the site each fall should be made and included as part of the FEIS.

3.4.2.1 Proposed Action

Western Gray Squirrel, p. 3-75: This section suggests that the lack of oak trees in the project area indicates that the area has poor habitat quality for this species. In the northern part of the species' range, however, oaks are completely lacking. Accordingly, the absence of oak trees should not be used to conlcude that the squirrels are absent from a site.

Special Status Wildlife Species, p.3-77: This section introduces the collision risk model (or "bird exposure index" as it is called in the avian reports) from the avian survey reports. As discussed above, this model is highly suspect. The avian survey reports present numerous caveats when using this model or index: "This index is only based on initial flight height observations and relative abundance (defined as the use estimate) and does not account for other possible collision risk factors such as foraging or courtship behavior."

Reliance upon the Index is subject to criticism on several grounds. Intuitively, the model makes little sense.[13] The model also fails to account for the disproportionate impact of mortality on rare

[13] In the model, A = mean use for species is averaged across all surveys. Many species, especially raptors, demonstrate distinct seasonal use of the site. For example, a large influx of bald eagles into the Columbia River

populations.[14] The model also fails to account for many of the other variables that influence strike risk. These include size of the bird, speed of flight, and direction of flight, or weather conditions which could obscure blades or towers.

Ultimately, there is no indication that this model has any predictive value. Neither the DEIS nor the avian surveys indicate that this model has ever been tested in the field or been utilized prior to the construction of a wind energy facility, followed by post-construction surveys to verify its usefulness.

Given these limitations, any use of numbers from the index should be reported judiciously, sparingly, and with all the caveats identified in Appendix C and the DEIS, otherwise unqualified validity and strength are implied for these indices.

Other Wildlife Species, *Birds,* p. 3-79. The final paragraph in the bird impacts lists a host of caveats, which are cause for concern.[15] Although there is no geographic feature suggesting this

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Gorge occurs in the winter, and the DEIS does report that the bald eagle was more likely to occur on the project site during winter. However, the species' weight in the model would be greatly reduced by the number of data collection efforts made at other times of year. During most times of the year, the risk of collision for a species with strong seasonal occurrences would be zero—it just isn't at the site. On the other hand, at the peak of its occurrence at the site the risk could be far greater. Distributing the exposure risk across multiple seasons thereby presents a deceptive index of exposure risk.

The model contains two additional parameters: Pf = proportion of all observations of species i where activity was recorded as flying (an index to the approximate percentage of time species i spends flying during the daylight period), and **Pt** = proportion of all flight height observations of species i within the rotor-swept height. Both of these parameters are based on information captured at the moment of observation during field data collection. Data derived from the literature regarding each species' natural history and behavior could provide a more accurate picture of long-term behavior. As discussed earlier, almost all birds fly at some point during the day (one of the caveats in the DEIS for the model states "[i]f a species was recorded on the site, but never flying at all, then the exposure index would not be applicable") and at some point flight heights are likely to enter elevations swept by rotors. Both of these parameters likely suffer from small sample sizes of the total number of observations, meaning that statistically there would be little ability to accurately describe behavior based on the small sample size.

[14] Models such as this suggest that strike risk is reduced specifically because a species is rare at the site. To illustrate the point, the loss of one bird from a local population of two hundred (200) has little biological meaning. The loss of one bird from a local population of two (2) means 50 percent of the population is gone. Yet in each example, only one bird was killed.

[15] These caveats include:

> . . . the level of night migration for species associated with the project site is also not known.
>
> . . . risk analyses . . . provide some insight into which species are most vulnerable to turbine collision; however, estimates are based on abundance, proportion of daily activity budget spent flying, and flight height of each species. Observations were made during daylight hours, and do not take into consideration flight behavior or abundance of nocturnal migrants.
>
> . . . the analysis does not account for varying ability among species to detect and avoid turbines, habitat selection, or other factors that may influence exposure to turbine collision.

site constitutes a migratory bottleneck or should host a concentration of migrants, no effort was made to assess passerine migration, particularly at night (when most of these species migrate). In the absence of such an effort and in light of the long list of caveats associated with the collision index, post-construction monitoring and appropriate mitigation (should significant mortality occur) is warranted. Long term impacts should be assessed over a 5 – 10 year period because of our lack of experience with siting wind projects in Western forested ecosystems, and because of the inter-annual variability in migrating bird numbers.

Other Wildlife Species, *Bats*, p. 3-79: Bats are difficult to study. Nonetheless, the fact that of all the bats detected and all the species that could be present at the site, only the hoary bat was identified to species, leaves much information for the site lacking. The DEIS concludes (based on Appendix C reports) that relatively little bat activity was recorded at elevated heights, and two seasons of monitoring did not detect significant migrations. While these are good signs, the DEIS concludes "variable levels of recorded use by bats across years, habitats and recording height above ground indicate that the extent of impacts is difficult to predict at this time." This conclusion demands years of follow-up monitoring to assess actual impacts. As one of the first sites placed in a forested setting, such monitoring is particularly critical to understanding the environmental impacts of wind energy sites in forests.

3.4.3 Mitigation Measures

Post-Construction Avian [and Bat] Mortality Study: Given the large number of unknowns discussed above regarding both bats and birds, the avian mortality monitoring mitigation measure should be expanded to include bats and its duration should be expanded from 2 years to a 5-10 year horizon.

Research-oriented Studies: As one of the first wind power projects proposed for construction within a forested habitat in the Pacific Northwest, this project offers a unique opportunity to conduct research-oriented studies regarding the wind energy/wildlife interactions like the research studies identified in the WDFW Wind Power Guidelines (2009) and the USFWS Wind Turbine Guidelines (2010).

Adoption of USFWS BMPs: The proponent should adopt the Best Management Practices set forth by the USFWS Wind Turbine Guidelines Advisory Committee. Most of the BMPs suggested by the committee are already in the DEIS, but a good faith effort should be made to meet all of these guidelines to minimize project impacts. One BMP not presented in the DEIS includes appropriate lighting of on-site facilities (in addition to the towers themselves) to control light pollution and maintain the dark skies needed by bats and migrating birds.

As a result, actual risk may be lower or higher than indicated by these estimates[.]

The Technical Advisory Committee (TAC): As mentioned earlier, membership in the Technical Advisory Committee should include representatives from Audubon Washington or one of its member chapters, as well as representatives from local, federal and tribal federal and local environmental groups. The TAC should be convened for the life of the project, unless EFSEC determines otherwise.

Procedures for Responding to Avian and Bat Mortality Events: The mitigation measures should include the adoption of procedures specifying how the project will respond to large scale avian or bat mortality events or a take of a Bald Eagle or other species subject to protection under Federal or State law. These procedures should include timeframes for notifying relevant authorities (EFSEC, the TAC, and appropriate local, state and federal authorities) and measures to be taken to ensure no additional environmental harm occurs pending investigation of such an event, including curtailment of operations. Consistent with WDFW Wind Power Guidelines, the Applicant should contact the USFWS to determine appropriate measures to resolve un-authorized take of Endangered Species Act listed species or other species covered by other federal regulations.

Construction Monitoring: Mitigation measures during construction should include retaining an independent environmental monitor to ensure that all Best Management Practices and other mitigation measures are fully observed during the course of construction.

Mitigation for Lost Habitat: Arrangement should be made to mitigate for the permanent and temporary habitat losses caused by the project. Mitigation for permanent loss of habitat should be made on a one to one basis as provided for under the WDFW Wind Power Guidelines and should be developed in conjunction with WDFW and EFSEC.

3.4.4 Unavoidable Adverse Impacts

This section concludes with the statement "[t]he potential for ongoing occurrence of either golden or bald eagles is considered extremely rare." This statement is misleading. While both of these species appear to be rare at the site, surveys have documented their presence at the site. Moreover, both of these species are known to range widely in search of food, and bald eagles have been appearing in increasing numbers during the winter in a location that is only two miles away. Under these circumstances, the DEIS should state that periodic occurrences (in low numbers) of these species at the project site are predictable and are to be expected.

3.6 PUBLIC HEALTH AND SAFETY

3.6.2.1 Proposed Action

Construction, Fire and Explosion, p. 3-97: The wind turbine nacelles will be at a height of 262 feet. This section should discuss the technical challenges that are posed by responding to a fire, explosion or medical emergency at such a height, the types of emergency equipment necessary to respond to emergency events, and who (local fire departments, DNR or the Applicant) will be responsible for supplying and operating this equipment.

Operation, Fire and Explosion, p. 3-99: This section acknowledges that turbine malfunctions resulting in fires have been known to occur. Given that the turbines nacelle are located hundreds of feet in the air in a windy area surrounded by land being managed for timber production, it would appear that a fire could pose a serious threat to the project site and surrounding property. This section should be expanded to discuss the potential environmental impacts that may arise from a turbine fire and the actions that would be taken to minimize those impacts. This section should discuss whether equipping the turbines with fire suppression equipment is advisable.

3.6.3 Mitigation

Equipping the turbines with fire suppression equipment should be considered as a possible mitigation measure.

3.7 NOISE

3.7.1.3 Affected Environment

The Applicant intends to harvest trees in the vicinity of the project site prior to construction. This section should discuss whether the harvest of trees will affect the validity of the pre-construction sound study with a specific focus on the residential sites identified in the first paragraph of Section 3.7.1.3.

3.7.2 Impacts

This section should discuss on-site alternatives regarding the placement of wind turbine towers and potential noise impacts.

3.7.3 Mitigation

If warranted, mitigation measures should include removal or reconfiguration of turbines to minimize impacts on residential receptors.

If warranted, mitigation measures should include maintenance of vegetative buffers between the project and residential receptors to minimize sound impacts.

3.8 LAND USE AND RECREATION

3.8.1.2 Recreation

The Mark O. Hatfield Wilderness Area is within a 25 mile radius of the proposed project. Environmental impacts to this wilderness area should be identified and discussed in this section.

3.8.3.1 Proposed Action

Changes to Existing Land Use Patterns and Recreation, *Project Operation,* p. 3-151: In this section, the authors suggest that the project will not impact local agricultural tourism because wineries located in southeastern Washington are "thriving" despite the fact that there are four wind power facilities located between Walla Walla and Kennewick. This paragraph should be redacted. Correlation does not establish causation. Without more detailed analysis, the fact that wineries and wind power operations co-exist in Walla Walla County should not be used to predict the environmental impact of this project in Skamania County.

Consistency with Applicable Land Use Regulations, Columbia River Gorge National Scenic Area Management Plan, p. 3-154: Under the bullet point entitled "Scenic Appreciation and Scenic Travel Corridors," strike "only" from the discussion so that the sentence reads: "The project would have minor to moderate impacts on visual quality as viewed from travel corridors inside the Scenic Area."

Trails and Pathways. The discussion in this section needs to be clarified. The project will have low to moderate visual impacts on viewpoints from some trails and pathways in the CRGNSA. The statement that "[t]he project would not affect any trails or pathways in the Scenic Area" is incorrect.

3.8.3.2 No Action Alternative

If a No Action Alternative is pursued, there will be no impact on visual resources.

3.8.4 Mitigation Measures

This section should discuss reconfiguration or removal of turbines to minimize visual impact on scenic area as a mitigation measure.

3.8.5 Unavoidable Adverse Impacts

If the applicant is unwilling or unable to reconfigure turbines to minimize visual impacts, then this section should identify minor to moderate impacts on visual resources within the CRGNSA as an unavoidable adverse impact.

3.9 VISUAL RESOURCES

3.9.1 Methodology

The methodology applied should be expanded to include the Visual Resource Management system employed by the Bureau of Land Management. The CRGNSA has established visual resource objectives for a large and specific area within the Columbia River Gorge. Although the project is located just outside the scenic area boundaries, it will be clearly visible from within the scenic area and will impact the area's scenic values. That the project is located just outside the scenic area boundary should not exclude it from an analysis that fully identifies and discusses the project's visual impact on this nationally-recognized, high value regional view shed.

3.9.1.3 Preparation of Visual Simulations

The photographs underlying the visual simulations are problematic. Visual simulation photographs should be taken with a 50 mm lens, as this focal length most closely captures human visual perception. *See Environmental Impacts of Wind-Energy Projects,* National Research Council (2007) at 247. The use of other focal lengths distorts the image and makes it difficult to compare impacts between different photographs. *Id.* If a digital camera is used, it should be set at the highest resolution possible. *Id.* The visual simulations should also be re-sized to a 10 x 12 inch format, at a minimum, for comfortable arm's length viewing. *Id.* at 250.

Most of the simulations produced in the DEIS appear to be taken from viewpoints along roads and highways. Additional simulation should be provided with views from the Columbia River, hiking trails, and wilderness areas. *See Id.* at 251-52.

The DEIS states that simulations were not prepared for night time conditions. An inventory of current night time lighting conditions would be helpful in assessing the extent to which FAA mandated turbine lighting will impact the night sky.

3.9.2.3 Viewpoints

See comments under sections 3.91 and 3.9.1.3.

Columbia River Gorge National Scenic Area – p.3-194

Visual impacts are among the issues to be addressed in NEPA and SEPA analysis. Although Congress has expressed reluctance to apply Scenic Area restrictions to lands lying outside the scenic area boundary, land uses outside the scenic area will impact the visual quality within the scenic area and should be subject to visual analysis consistent with the values encompassed by the CRGNSA.

3.9.3.2 No Action Alternative

There is no evidence in the record that construction of project will result in an appreciable decrease in this region's development or reliance on fossil fuels or prevent the construction of such plants in the future. The assertion that failure to build the project will result in continued impairment of air quality and visual resources is not well-founded and should be removed from the discussion.

3.9.4 Mitigation Measures

In addition to painting the turbines an unobtrusive, non-reflective color and following FAA lighting guidelines, the following additional mitigation should be included:

- Either reducing or reconfiguring the turbine locations to minimize visual impacts.
- Explore whether vegetative buffers can be grown or maintained to minimize visual impacts.
- To the extent visual impacts are unavoidable, mitigation should include the preservation of off-site visual resources.

3.10 HISTORICAL AND CULTURAL RESOURCES

3.10 .2.2 Cultural Resources Overview

The FEIS should incorporate the results of archaeological field inventory conducted by Yakama Nation's Cultural Resources Department.

3.11 TRANSPORTATION

3.11.2 Impacts

This section should identify likely haul routes for concrete that will be used for the wind turbine foundations and discuss any associated environmental impacts.

3.14.3 CUMULATIVE IMPACT ANALYSIS

3.14.3.5 Habitat and Wildlife

Bird and Bat Species, p. 3-274: This section provides: "Erickson et. al. (2005) concluded that these sources of mortality [i.e., other anthropogenic sources] are likely much larger than the

potential impacts of wind power development." This statement of relativism is misleading and is not consistent with the intent of a cumulative impacts analysis. While on its face the statement is likely true, the question is whether wind energy, by adding incrementally to mortality, would be enough to negatively impact bird or bat species.

Discussion of West Cumulative Impact Study, pp. 3-275-76: The cumulative impact study prepared by West, Inc. for the Klickitat County Planning Department has contextual issues that need to be addressed. As the DEIS points out, habitat assessed by West for Klickitat County is significantly different from that at the project site. The DEIS states that "none of the estimated fatalities were anticipated to cause a significant loss in population, and no cumulative impacts were anticipated." Since the completion of the West report, however, the number of occupied Ferruginous Hawk nests in Washington has dropped precipitously.[16] The West report does disclose that this species could be at risk from wind energy facilities, and suggests that exclusion zones around core habitats might be warranted. In light of the current plight of this species, the "no impact" conclusion needs to be re-evaluated.

Another problem with the West report is that it focuses solely on impacts from the full build out of all anticipated wind development projects in the Columbia Plateau Ecoregion. While informative, this analysis misses the point of a cumulative impacts analysis, which is to evaluate the impact of the current project (in the West report, all anticipated wind energy development) in conjunction with all other reasonably foreseeable stresses on the resource – the analysis should have been wider ranging and not restricted to wind energy development.

Cumulative effects result from spatial (geographic) and temporal (time) crowding of environmental perturbations. The effects of human activities will accumulate when a second perturbation occurs at a site before the ecosystem can fully rebound from the effect of the first perturbation.[17] Fragmentation and habitat degradation are two of the major problems in the shrub-steppe. Development, land conversion, fire, incompatible grazing practices, and weed invasion are all driving mechanisms. The question of whether wind energy development in the Columbia Plateau Ecoregion could add synergistically to these sources of stress is not addressed in the West report.

The DEIS mentions that climate change is not evaluated as a source of stress. Climate change projections for Washington and the Pacific Northwest suggest dramatic changes in East-slope forests (as well as shrub-steppe), and these changes should be discussed in the context of cumulative impacts.

The cumulative impacts discussion in the DEIS concludes with the following sentence:

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[16] McCullen, K. 2010. Eastern Washington sees fewer ferruginous hawks. Tri-city Herald. May 9.

[17] Council on Environmental Quality. 1997. Considering Cumulative Effects Under the National Environmental Policy Act. Council on Environmental Quality.

> For example, one study from 2009 estimated that, based on performance in the United States and Europe, wind farms and nuclear power stations are responsible each for between 0.3 and 0.4 bird fatalities per gigawatt-hour (GWh) of electricity while fossil-fueled power stations are responsible for about 5.2 fatalities per GWh (Sovacool 2009).

The Sovacool (2009) paper appears to be fundamentally flawed in its assumptions. Willis et al. (2010)[18] published a rebuttal to this paper that would suggest that its premises are unsound. This line of reasoning should either be removed from the FEIS, or better supporting literature provided to support the point.

Thank you for this opportunity to submit comments on the Whistling Ridge DEIS. Please feel free to contact me if you have any questions or need clarification regarding my comments.

Sincerely,

H. BRUCE MARVIN
Assistant Attorney General
Counsel for the Environment

HBM:cv

cc: By email:
BPA (and by mail)
EFSEC (and by mail)
Al Wright
C. Robert Wallis
Jason Spadaro
Kyle Crews
Tim McMahan
Darrel Peeples
Tony Usibelli
Gary Kahn
Dorothy H. Jaffe
Nathan Baker
J. Richard Aramburu

[18] Willis, C. R., R. M. R. Barclay, J. G. Boyles, R. M. Brigham, V. Brack, Jr., D. L. Waldien, and J. Reichard. 2010. Bats are not birds and other problems with Sovacool's (2009) analysis of animal fatalities due to electricity generation. Energy Policy 38:2067–2069.

Robert Wittenberg, Jr.
Peggy Bryan
Skamania County Agri-Tourism Assoc.
Chris McCabe
Shawn Cantrell
Isa Anne Taylor
Jill Arens
John McSherry
David Poucher
Michael Canon
Don McIvor
By mail:
Save our Scenic Area
Klickitat and Cascades Tribes of the Yakama
Johnson Meminick

Save Our Scenic Area (SOSA)

[redacted]

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Comment on Whistling Ridge Energy Project

Draft Environmental Impact Statement (DEIS)

Comments on Bat Studies

August 27, 2010

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Dear Messrs. Posner and Montaño:

Save Our Scenic Area (SOSA) is involved with the Whistling Ridge Energy (WRE) project application as an Intervener. SOSA is a non-profit corporation formed by concerned local Gorge citizens. Its primary mission is to help preserve the Columbia River Gorge National Scenic Area view-shed; to further maintain the existing rural and scenic character of Underwood, Washington, and surrounding communities in Washington and Oregon; and work to preserve the intent of the Columbia River Gorge National Scenic Area Act. I am writing today to provide comments on the recently issued draft environmental impact statement (DEIS) for the WRE proposal.

SOSA is submitting several different comment letters, covering a variety of subject matter within the DEIS. We have also reviewed the comments submitted by the Friends of Columbia Gorge, agree with them and incorporate them by reference. There are multiple environmental issues involved in the consideration of this project and it is important that each be given through consideration in the EIS process. We find that, in many areas, the present DEIS is completely insufficient and we urge that the NEPA/SEPA responsible officials prepare a supplemental DEIS.

Save Our Scenic Area (SOSA)

[redacted]

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The following pages of written and charted comments, plus Exhibits, are intended to address some, but not all, of the deficiencies noted in the particular sections within the WRE DEIS that address Bats. In all cases, the deficiencies are explained. In most cases, particular remedies are suggested. Because no remedy is proposed by SOSA does not mean there should not be one implemented by the NEPA/SEPA responsible officials.

Prepared for Save Our Scenic Area
by Loreley Drach, M.S.

I am commenting on the methods, results and conclusions resulting within the Acoustic Bat Surveys and the text of the Whistling Ridge DEIS.

METHODS

Whistling Ridge Energy (WRE) hired the consultant WEST, Inc to perform bat surveys in 2007, 2008, and 2009. The bat survey consisted only of Anabat recordings at selected locations. This method has the ability to detect and record the ultrasonic calls allowing bat species to be identified and enumerated within the spatial range of the Anabat equipment. Use of the Anabat recorder however has limitations. Anabat recorders are used to determine activity. What specific activity is occurring, such as migration or feeding cannot be determined from the calls themselves. The limitations of the survey methods must be addressed and conclusions need to remain within the methodology limitations and not go beyond. WRE makes assertions that do not have any empirical basis in an attempt to lead reviewers to believe it has fulfilled the requirements of the DEIS.

To begin with, WEST, Inc. did not consistently achieve their own stated goals: "(1) characterize the local bat populations in a variety of habitats, (2) identify areas of high usage by bats, and (3) characterize the frequency of bat usage areas representative of where turbine strings would be located" if they were achieved at all.

(1) Local bat populations were not characterized in a variety of habitats. Implied in characterizing the bat populations is the identification of species and providing their composition of the calls in each habitat. Only one bat, the hoary bat, was identified. This bat in general only made up approximately 5-6% of the calls. Out of the 15 species of bats that may be present in the WRE area, six have status, and two are candidates for listing. Over 90% of the bat calls remains unidentified. WEST, Inc. states that they did not have the ability to detect individual species of bats. Perhaps WEST, Inc. does not have the ability to do so in house, but they could have sent out the recordings for analysis

by a qualified expert. WEST, Inc. provided text in a report for another wind development company Acciona demonstrating they have sent tapes out for expert analysis (Exhibit 1).

(2) During 2008, four locations closely representing the diversity of habitats and the turbine corridors in the WRE project area were monitored with the Anabat II recorders. These general habitat types included a wetland between two strings, a road corridor, and two clear cut locations.

(3) The 2007 survey did not state habitat type monitored and 2009 did not monitor a similar variety of habitats in the WRE area as in 2008. In 2009, WEST, Inc. only monitored areas similar to the one identified in 2008 as having the lowest activity. WEST, Inc. did not indicate whether they surveyed locations that would represent tree stands of 10, 20, and 30 years of growth. These tree ages would be present as the project area becomes reforested. WEST, Inc. surveyed highly disturbed locations only, worst case scenario from a species use standpoint. The results in 2009 therefore only represents the lowest probably use by surveying what appears to be the least desirable bat habitats, and in conditions only present for the first few years following completion of construction. Yet, only the 2009 activity data was used as the basis of comparison to other wind facilities with bat mortality data.

Bat activity numbers should be normalized by a fixed time period, like day, week, or month. In the case of WRE, they normalized by study period, when each year's study duration was different, as well as start and stop dates. The longer study period, lasting past normal activity periods for bats will indicate lower average values for the whole year's study.

The bat survey did not cover any of the bat activity during spring. The longest survey period covered June thru October. Bats have been seen adjacent to the WRE area as early as March. Wind in the PNW is most frequent during the winter and spring as frontal systems move in from the Pacific Ocean. Bats, with high springtime metabolic requirement would be vulnerable as they forage to recover lost fat from hibernation or migrate through the WRE site.

The WRE surveys discarded single calls. These single calls could belong to species that range on the quiet or non vocal side of the bat world. A table needs to be created showing which NW bats vocalize with two or more calls and which ones often use single calls.

Very significantly, the WRE bat survey failed to assess the prevalence of migrating bats through the project area. The DEIS makes statements that appear intended to demonstrate WRE does not believe they pose a significant risk to migrating bats, but these statements are not supported by any study or facts. Anabat recordings do not differentiate between bats feeding, migrating, or engaged in other activities. Simply noting what time of year activity was higher or lower does

not even suggest migration. Migration can only be elucidated from carefully designed and executed surveys.

Kunz et al. (2007) outlines some of the different technology and methods available for assessing nocturnal bats. Equipment such as tracking radar and thermal infrared imaging cameras can be used in conjunction with ultrasound microphones for bats and audio microphones for birds to obtain a greater picture of bat and bird migration and behavior in and through the WRE area. Because, bird migration was also not assessed, a bird and a bat could be hit with the nearly same proverbial stone should a migration survey be required.

Bat experts with specialized knowledge were not consulted for information on location of hibernacula and maternity colonies, the only person consulted was a generalist WDFW habitat biologist, Bill Weiler (pg 3-80).

These deficiencies in the methods makes it difficult to truly assess what bat species may be at greatest risk both from a numbers issue a population perspective.

RESULTS and CONCLUSIONS

The acoustic bat surveys during 2008 better covered the diverse habitats currently available on or near the WRE site than either 2007 or 2009. The WRE project site contains wetlands, streams, ridges, low lying areas, clear cuts, varying ages of forest, and forest fringe areas. Not all these areas were monitored, but in 2008 several of them were. In 2008 three upland sampling locations, two clear cuts and a road corridor (July 3 to Oct 7) were monitored over 97 nights recording 39,326 bat passes and one additional sampling station next to a wetland (located between two rows of turbine strings) was monitored over 97 nights and recorded a whopping 17,269 bat passes (mean of **178.0** bat passes per detector night). The three upland locations had means of **14.3**, **73.8**, and **397.3** bat passes per detector night. ***These results appear to be some of the highest bat pass detections reported (and in three locations, the highest detections) of any wind turbine site in the U.S*** Compare to the numbers in the Activity column in Table 4 in appendix C-10, page 18. The highest activity on the table is 38.3 bat detections/detector night.

WRE suggests that bat use of the site is not high and states that the "extent of impacts is difficult to predict at this time (pg. 3-81)." The absolute extent cannot be precisely predicted, but a general ballpark statement can be made upon closer examination of the numbers. WRE agrees: "a) bat mortality shows a rough correlation with bat activity as measured by Anabat units (Table 4.)." The WRE Anabat monitors more than suggest high bat activity, it has been clearly demonstrated. It is reasonable to expect that bat mortality could be very high at the WRE location if turbines are installed.

It is common knowledge that bats have been killed in far greater numbers than birds, particularly along the mountain ridges of the Eastern US. No information exists in the Pacific Northwest on bat mortality associated on the forested ridges of the Pacific Northwest, simply because no industrial wind projects have been built in this location to date. Whether resident or local populations are more at risk is completely unknown. In absence of information, a conservative approach would be best, especially in light of six status species of which two are candidates for listing, possibly inhabiting or migrating through the WRE area.

Bats do not have to be struck by wind turbines, but simply being in the proximity to a rotating blade may cause fatalities from barotrama (Baerwald et. al 2008). Whether bats are killed as a result of a random event or by some selective mechanism is not fully known. However, it appears that bats may be attracted to wind turbines (Horn et al. 2008).

Bats are long-lived and have low reproductive rates, making populations susceptible to localized extinction (Barclay and Harder 2003). Bat populations may not be able to withstand the existing rate of wind turbine fatalities (Kunz et al. 2007; Arnett et al. 2008). As the number of wind turbine facilities increase across the continent, even greater numbers of fatalities will occur. One serious bat problem looming on the horizon is the possibility that White Nose Syndrome may infect western bats. The cumulative effect of wind turbines and this devastating infection on bats has not been addressed in cumulative impacts. This information needs to be added, especially in light of the high bat activity at the WRE location.

Society needs to take great care protecting these small flying mammals. Bats are significant consumers of human and agricultural pests. Without them life could be different.

CITATIONS:

ARNETT, E. B., ET AL. 2008. Patterns of bat fatalities at wind energy facilities in North America. Journal of Wildlife Management 71:61–78.

BAERWALD, E. F., G. H. D'AMOURS, B. J. KLUG, AND R. M. R. BARCLAY. 2008. Barotrauma is a significant cause of bat fatalities at wind turbines. Current Biology 18:R695–696.

Barclay, R.M.R., Harder, L.D., 2003. Life histories of bats: life in the slow lane. In: Kunz, T.H., Fenton, M.B. (Eds.), Bat Ecology. University of Chicago Press, Chicago, pp. 209–253.

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[redacted]

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HORN, J. W., E. B. ARNETT, AND T. H. KUNZ. 2008. Behavioral responses of bats to working wind turbines. Journal of Wildlife Management 72:123–132

KUNZ, T. H., ET AL. 2007. Assessing impacts of wind-energy development on nocturnally active birds and bats: a guidance document. Journal of Wildlife Management 71:2449–2486.

Please also reference the charted comments on the pages below.

Thank you for this opportunity to comment on the DEIS. SOSA trusts that the DFEIS and FEIS will provide facts and analysis on the issues raised herein.

Regards,

Thomas Drach, PE
Board Member

DEIS Comments on BATS from Save Our Scenic Area (SOSA)

August 27, 2010 [redacted] www.saveourscenicarea.org

Comment #	Section Number	Page Number	Heading Number	Paragraph Number	DEIS Text	Declared Deficiency	References	Remedy
comment #'s continued from previous Specific Comments submitted earlier								
108					nonexistent	Science based studies require a statement of all assumptions made to design a study and collect, analyze, and interpret data. This is completely nonexistent in the DEIS and Appendices.		
109	3	65	3.4.1.6	4	Bat acoustic studies conducted from 2007 through 2009 were implemented at various locations on the project site. The goal of the studies were to: (1) characterize the local bat populations in a variety of habitats, (2) identify areas of high usage by bats, and (3) characterize the frequency of bat usage areas representative of where turbine strings would be located. Studies were done across several seasons to estimate annual variation during breeding and periods of migration.	Goal (1) was not met. One cannot characterize the local bat populations (note plural) if one does not know what different populations of bats exist at the site. The Anabat recordings were only used to differentiate between high and low frequency calls, and only the call of the hoary bat (approximately 6% of the calls) was identified to species. Goal (3) only addressed one of a number of "representative" habitats, and this one habitat selected had the lowest activity of all monitored habitats. Only goal (2) was accompished. Periods of migration were not identified by the study, only an assumption that migrating bats would migrate during the same period as bats on the East Coast of the US. Because migration by bats from or through the area were not studied, WRE cannot make any conclusions about migration. Not all bats migrate, some are residents, so unless one knows what migratory species are in or moving through the area nothing other that counts of presence can be made.		Identify all common and unique bat calls by Genus and Genus species and report along with location, date, time, wind speeds, and other meterological information. Provide all information in a supplemental DEIS. Characterize the local bat populations in a variety of habitats. Design study to specifically adress MIGRATION according to established best practices.
110	3	65	3.4.1.6	5	For all studies, passive Anabat II echolocation detectors coupled with Zero Crossing Analysis Interface Modules (ZCAIM; Titly Electronics Pty Ltd., NSW, Australia) were used in all survey years. Bat species are generally grouped into those that emit low frequency (<35 kHz) or high frequency (≥35 kHz) calls.	Bats need to be identifed to species, particularly in light of a number of species with an elevated status. The Applicant's consultant, WEST INC, has demonstrated capability to provide this service and needs to perform this analysis. Bats should be grouped by Genus, and Genus Species in addition to low and high frequency calls.	Condensed exerpts from WEST, Inc. bat study for Acciona: Analysis of bat calls was conducted using Analook software (DOS version). Species identification was aided by the Preliminary Key to the Qualitative Identification of Calls within the AnaBat System (Amelon 2005, unpublished data) All Myotis-like calls were identified to genus only and submitted to biologist, Eric Britzke, for identification to species.	Identify all common and unique bat calls by Genus and Genus species and report along with location, date, time, wind speeds, and other meterological information.

DEIS Comments on BATS from Save Our Scenic Area (SOSA)

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Comment #	Section Number	Page Number	Heading Number	Paragraph Number	DEIS Text	Declared Deficiency	References	Remedy
112	3	67	3.4.1.6		In 2009, the bat survey efforts were further refined to focus specifically on the types of locations where turbines would be sited.	This statement is patently false and misleading. The study design in 2008 represented the tubine locations by including areas near water sources. There are two water sources bats can use. One is the wetland just outside of 150 feet from some of southern the C string of turbines. The second, although mentioned a number of times during scoping, is from a creek below the southern A-array. This creek flows into an old reservoir located on the east side under the southern A string. It too provides a water source for bats. The 2009 survey selected locations far from water sources and as far from any size of trees that could be attained and is not representative of the diverse environment typical of a mountainous coniferous environment.		
113					General	No comparison to environmental conditions during the time Anabat equipment was operating,		
114					General	No mention of how bat use will increase in clearcuts as trees regrow.		
116					General	Bats data cannot be compared to other PNW use and mortality surveys. A those surveys occurred in the open, dry, unforested farmlands and grasslands and not in the damp coniferous forests and ridgelines of the Cascade Mountians. Patterns in use and activity are highly likely given differences in species and therefore behavior patterns of each individual species. Timing of reproduction and migration or hibernation is very likely to be different in the hot and dry environments than than in the forests of the Cascade Mountains for those species that inhabit both areas.		An expanded, in depth independent study needs to be performed over multiple years prior to any conclusions about seasonal and temporal use patterns and predicted mortality.
117	3	66	3.4.1.6	table 3.4-6	Table	Need to identify also what species are high and low frequency. A count shows that two high frequency and four low frequency bats have status. Of the low frequency bats one has been identifed but only makes up 5.9% of the total calls. This means that over 94% of the bat calls are unidentifed. Of particular interest, in the low frequency group, one species had been identifed as being in the area, leaving six not identified. Out of those six, four have status. In the high frequency group, two of the 8 have status. Overall, there is a very good chance that a number, if not all of these status species use this area, given the number of unidentifed calls.		Have expert biologists identify calls and present results along with detailed life history and overall abundance.

DEIS Comments on BATS from Save Our Scenic Area (SOSA)

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Comment #	Section Number	Page Number	Heading Number	Paragraph Number	DEIS Text	Declared Deficiency	References	Remedy
118	3	79	3.4.1.7	6	It is likely that some bat mortality would occur during operation; however, mortality estimates are difficult due to our lack of understanding of why bats collide with wind turbines….	It is common knowledge that it is not necessary to know why things happen to be able to assign an number to how often it may happen. It may be necessary to know why things happen to develop an effective solution. For example: Survival studies (mortality) in salmon are able to calculate the estimated number in a species population surviving through each dam, and the number surviving to the ocean based on the survival passage at each dam. Those numbers can be used to develop models of survival based on flow, temperature, size of fish, species, and timing of migration. It is not necessary to determine what exact or behavorial factor is involved. Same with bats. Scientists may not know what behavior exposes bats to be killed by wind turbines, but it IS known that bats are killed based on exposure (activity) to turbines. Significantly more than some are likely to be killed, especially if WRE is along a migration pathway. Population effect could result for a number of the bat species and particularly for Townsend's big eared bat.		
119	3	80	3.4.1.7	3	The timing of peak bat activity on the proposed project site (portions of July and August) does not coincide with when the highest levels of bat mortality have been documented at other wind projects in the US. Fatality studies have shown a peak in mortality in August and September and generally lower mortality earlier in the summer (citations)..... Rest of paragraph.	This section tries to suggest that because more bat calls were recorded in the summer months that mortality in migrating bats will be low. This does not correlate with other projects in the PNW. These other projects are in the eastern part of the state not having all the same species, a warmer drier environment with moderate fall weather where bat activity will remain higher longer into the fall. Second, bat mortality IS correlated with bat call recordings that indicate activity. Bat activity occurs until late September and early November with a peak in September. Because bat migration was not studied, no conclusions about bat migration can be made.		
120	3	80	3.4.1.7	4	After August 31, activity for all bats was very low relative to earlier dates, indicating that most bats had left the area for winter hibernacula or warmer climates.	This statement is not supported by an analysis of the numbers. Because species of bat calls are not identified and each species of bat has behavioral/physiological differences with response to oncomming winter, it cannot even be suggested that the bats left the area for hibernacula or warmer climates. For example: The Townsend's big eared bat's annual cycle includes an approximate 7 to 8 month period of peak activity in spring and summer when insects are most available and reproduction occurs. The life history and behavior of each bat species that may use the area needs to be incorporated into the timing of bat bat survey results and discussion. And the results need to include the identification of bat calls by the bat experts that specialize in studying each species of bats, especially the uncommon ones.	http://www.yoloconservationplan.org/yolo_pdfs/speciesaccounts/mammals/townsends-big-eared-bat.pdf	Identify bat call to species. Conduct a full bat migration study. Use accepted statistical analysis to compare bat abundance and movement in and through the WRE project area.
121	3	80	3.4.1.7	5	The project site does not contain topographic features, such as canyons, that may funnel migrating bats toward corridors where turbines would be placed.	Unfounded statements. There is no Pacific NW study on topographic effects on migrating bats to substantiate this. If so, cite the supporting document and do so for bat species that may migrate from or through the Pacific NW.		

DEIS Comments on BATS from Save Our Scenic Area (SOSA)

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Comment #	Section Number	Page Number	Heading Number	Paragraph Number	DEIS Text	Declared Deficiency	References	Remedy
122	3	80	3.4.1.7	5	No turbines would be constructed near wetlands or ponds, and cleared areas surrounding turbine strings would closely mimic clearcuts or young reforested areas, where to date, recorded bat activity levels on the project site were the lowest.	Absolutely incorrect assertion. Cedar swamp, a wetland discussed in the DEIS, is only a little over 150 feet from the C string of turbines to the east and a little further to the E string. The SB2 Anabat placed near the wetland recorded 178.0 bat passes per detector-night. The A string sits above an old reservoir that holds water the entire year. The Anabat placed in the A-string corridor recorded 73.8 bats per detector-night even though it was sitting out in the middle of a clearcut as were the detectors in 2009. By no stretch of the imagination is this a low number, only relatively lower than the extremely high numbers at two other locations in 2008. The numbers are so high, the developer did not want to compare them in the Table 4, page 18 appendix C-10. If 2008 numbers had been placed in the table, it would have reset the bar for all time high numbers of bats recorded per detector-night at wind turbine facilities.	DEIS Text.	Repair the defeciencies in the map and show the OLD RESERVOIR at the base of the southern A-Array. Provide acutual measures in FEET or METERS for each turbine within 2000 ft of a body of water.
123	3	59	3.4.1.5		Bat surveys conducted during ..... did not have the ability to detect individual species of bats. Based on the lack of detailed information of this species life history and habitat requirements and nature of the bat surveys conducted it is difficult to conclude with certainty with the likelihood of Keen's bats occurring on the project site. However, Due to the lack of old growth or mature forest types within the project area and the predominant commercial forestry use of the property, the likelihood of occurrence on the site is considered to be low.	Anabat II technology exists to identify, by call, individual bat species. This technology has existed for over 10 years. West has authored a paper where the Anabat technology was used to identify to species the majority of calls. Papers, abstacts, and exerpts are attached. The tapes need to be further analysed by a highly qualifed INDEPENDENT expert to identify bat calls with special emphasis to identify rare species. If WEST failed to set up the Anabat II correctly so that calls can be identified, then additional bat data collection needs to occur. Additionally, cumulative impacts should assess the possible future infection of bats by white nose syndrome. Increased mortality of ANY type, may directly affect these species future viability.		
124	3	75	3.4.2	4	Keen's Myotis and Townsend's Big Eared Bat. Surveys for bats were not able to identify ***all*** bats to species level.	Bats currently identified by the surveys, to Genus and Genus species, must be listed in a table form at the minimum. It is uncontionable to withhold such information, especially in light of this statement verifying the existence of bat species data.		Provide supplemental DEIS identifying how many Keen's Myotis and Townsend's Big Eared bat calls were detected by the Anabat II and locations, time of year, wind speeds, and other meterological information.
125	3	66	3.4.1.6	1	Two additional special status species, Keen's bat (Myotis keenii) and Townsend's big-eared bat (Corynorhinus townsendii), may occur but have not been identified in ***prior*** surveys.	The reason for doing the WRE survey is to perform a survey and determine what species are identified to use the area.		State whether either of these two species have been identified in the current DEIS study. This can only be achieved by reporting species calls identified on the Anabat II recording. What PRIOR surveys are being referred to here? Explain why it matters whether something was identified prior? What is the purpose of a current survey that can identify species if it only matters what is identified PRIOR?

DEIS Comments on BATS from Save Our Scenic Area (SOSA)

August 27, 2010 [redacted] www.saveourscenicarea.org

Comment #	Section Number	Page Number	Heading Number	Paragraph Number	DEIS Text	Declared Deficiency	References	Remedy
126		78	3.4.1.7	3	Special Status Species	Not discused under 'special status species": Fringed myotis, Long-legged bat, pallid bat, and Western pipistrelle. These four other bats each have some status as detailed on Table 3.4-6.		Discuss undre special status species or state why their status on the table not qualify them for special status
127	3	80	3.4.1.7	5	The nearest know hibernaculum is located near the town of Trount Lake, nearly 20 miles north of the proposed project (B.Wieler, personal communication).	Townsend's big eared bat hibernaculum near Trout Lake is known and is one of the largest in Washington. However, other as of yet identifed hibernaculum, may exist nearby. A vast lava flow begin just a few miles west of the project site and it could contain hibernaculum. The project site is an area of old volcanic activity. Given that the Townsends big eared bat is difficult to identify through recordings, it is hard to find maternity colonies, and later in the season they may travel as much as 50 km, extra effort needs to be expended to determine if this at risk species is near to or using areas of the WRE project.		
128	3	60	3.4.1.5		There are no known roosting structures or maternity colonies occurring in the vicinity of the project area.	See comments on Keen's Myotis. Townsend's Big Eared Bat, a species of concern and a candidate for listing, is present in the region. One of the largest colonies at is located in lava cave nearer to Trout Lake to the north (400 bats?). Colonies are small compared to many other bat species and not many colonies are known to exist. The southern end of the old lava flow (can be seen from Google Earth) that may contain additional colonies is approximately three miles from the project .		
129	3	59	3.4.1.5		Bat surveys conducted during 2007, 2008, and 2009 (Appendices C-8, C-9, and C-10) did not have the ability to detect individual species of bats.	Completely inaccurate statement at the best. Hoary Bats were identified. It IS ACCEPTED THOUGHOUT THE BAT WORLD THAT THE ANABAT IS A PRODUCT TO COLLECT BAT CALLS AND TO IDENTIFY BAT CALLS TO SPECIES. TITLEY INC, AUSTRIALIA (the company that makes this product) PROMOTES THE ANABAT AS A GREAT PRODUCT BECAUSE OF THIS CAPABILITY! The DEIS text make this assertion a number of times and and is just a false the first time stated as every other time statecd in the DEIS!		
130	C-8	3			Hoary bats comprised 5.7% of the total passes detected within the SWRA (20 of 348 bat passes: Table 1).	So, it is possible to identify bat species, so why not the remaining 94.3% of the calls? It is clear these tapes need to be reviewed by qualified experts.		

DEIS Comments on BATS from Save Our Scenic Area (SOSA)

August 27, 2010 [redacted] www.saveourscenicarea.org

Comment #	Section Number	Page Number	Heading Number	Paragraph Number	DEIS Text	Declared Deficiency	References	Remedy
131	C-9	8			Acoustic bat surveys were unable to determine bat species present in the study area (except for hoary bats)…..	So, it is possible to identify bat species, so why not the remaining 94.3% of the calls? It is clear hese tapes need to be reviewed by qualified experts.		
132	C-10	4		5	Hoary bats comprised 5.9% of the total passes detected within the WRWRA.	So, it is possible to identify bat species, so why not the remaining 94.3% of the calls? It is clear these tapes need to be reviewed by qualified experts.		
133	C-10	18	Table 4		Whistling Ridge, WA 8.09 This study	The number 8.09 (activity/detector night) is a lower number from a study that appears to have been manipulated in 2009 in an attempt to achieve a low number. The numbers from the 2008 study should also be placed on this table. The numbers from 2008 are 14.3, 73.8, 178.0, and 397.3 activity/detector night. An average of the three should be generated and put in the table. That average is likely to be well over 100.0 (bat calls)activity/detector night, and will be exceeding high relative to every other number in that column. Is this why it is left off the table?		

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Exhibit 1

West, Inc. Bat Identification White Paper

source: www.acciona-na.com/getattachment/6990b88d-6ff0-48e-990d-d208d4cb9776/

3.4 Nocturnal AnaBat Surveys

The objective of the nocturnal AnaBat surveys was to record the relative abundance of echo-locating bats flying through the sampling area during summer breeding season and the spring and fall migration seasons.

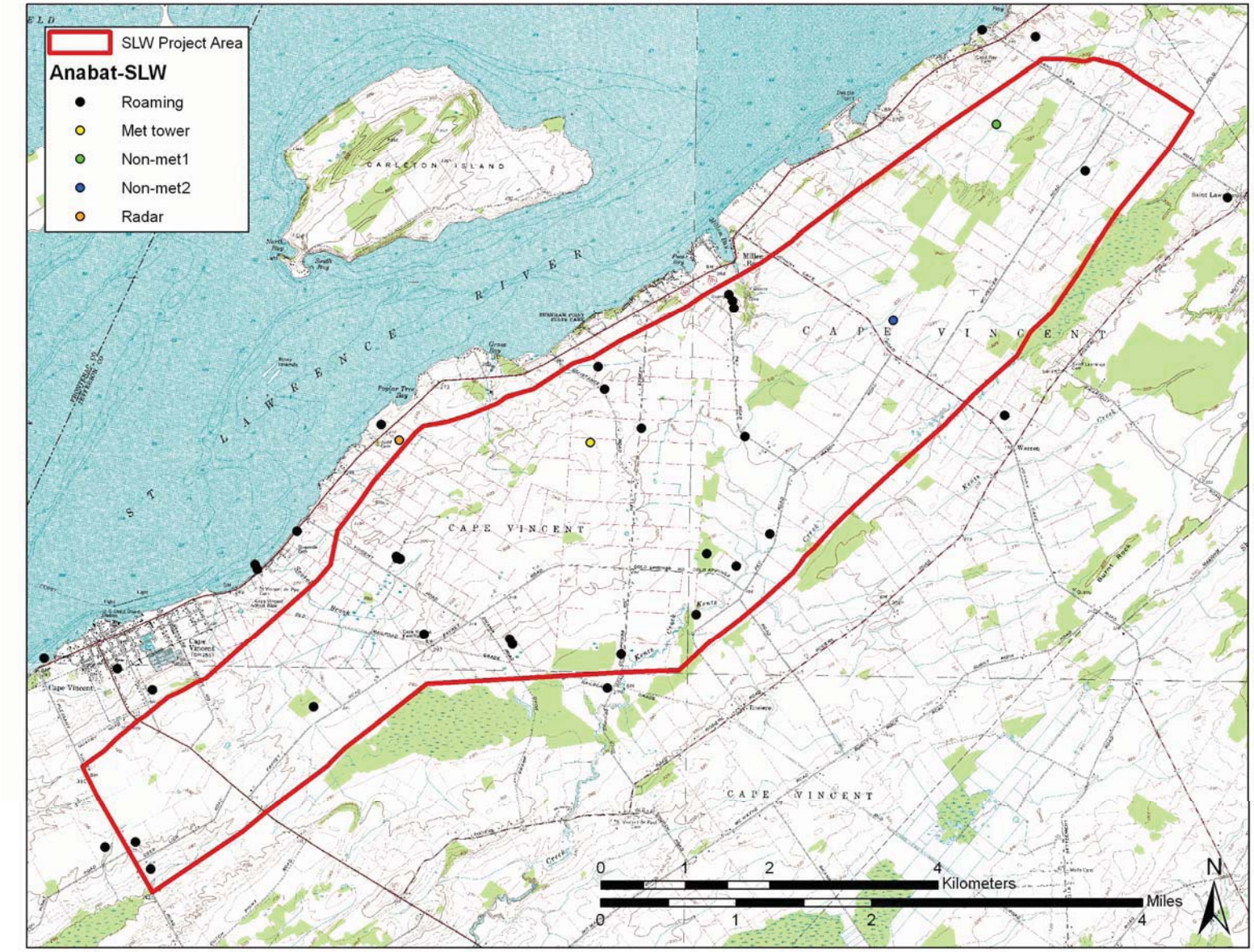
3.4.1 Methods

Bat activity at the project area was recorded using an AnaBat II ultrasonic bat detector attached to a zero-crossing analysis interface module (ZCAIM) which houses a compact flash memory card for temporary download of ultrasonic activity files. To sample continuously on remote mode (automatic data collection), the detector and ZCAIM were powered by an external 12V battery. Each AnaBat unit (detector, ZCAIM, and 12V battery) was enclosed inside a plastic box or dry bag with the detector microphone positioned against a PVC tube protruding from the box/bag. This design prevented water from damaging the AnaBat units without compromising the ability of the unit to detect ultrasonic noise in the environment. To limit variation among AnaBats, sensitivity settings were calibrated for each unit prior to data collection. Most AnaBat units were set at or near setting 7 on the sensitivity dial. Each passive AnaBat unit was positioned so that the microphone faced the same cardinal direction for each sampling period. Calls were recorded for passive sampling from approximately sunset to sunrise (1900 – 0700). AnaBat units were removed from the field approximately once per week to download files, recharge batteries, and troubleshoot technical problems. Data gathered from the passive AnaBat units at the met tower were used to calculate bat activity (designated as number of calls/night) present at the site during the sampling periods. Nights that experienced any number of technical difficulties were not included in the final analyses.

During the spring sampling season (April 13 – May 29), two AnaBat sampling locations were established. One unit was placed at ground level in the open grassy field at the base of the project met tower and another unit was deployed near a wooded edge (Non-met 1) to increase likelihood of detecting additional species (Figure 15). Access issues and technical difficulties with the AnaBat unit at the Non-met 1 location caused the unit to be relocated to a small farm pond near a wooded edge (Non-met 2) within the project boundary after a week of sampling. Acoustic sampling at these two locations (Met tower and Non-met 2) continued through spring and these locations were maintained through the summer sampling season (June 28 – August 8). During the fall season (August 13 – October 9), AnaBat sampling continued at ground level at the met tower. A second AnaBat unit was deployed from August 15 – October 16 in a tree approximately 10 m above ground near the radar survey station (Radar; Figure 15).

In addition to the stationary passive units, a "roaming" or mobile AnaBat unit was deployed during the summer to assess resident/breeding bat species present within the project area. Roaming sampling was conducted using a handheld AnaBat unit for 9 nights (3 sampling periods of 3 consecutive nights each) at habitats likely to have high numbers of resident bats. To select locations for active sampling, reconnaissance visits were made to the project area during the day time to select sampling locations based on the presence of travel corridors (trails and roads), linear landscape features (forest edges), and access to water; habitat features known to be important for bats. Active sampling was conducted from sunset until approximately 4-5 hours after sunset (2100 – 0100).

Figure 15. AnaBat survey locations for the project area.



Analysis of bat calls was conducted using Analook software (DOS version). Analook displays ultrasonic activity in a format similar to a sonogram used for analysis of bird vocalizations (e.g., frequency versus time). Species identification was aided by the Preliminary Key to the Qualitative Identification of Calls within the AnaBat System (Amelon 2005, unpublished data) where characteristics such as slope, frequency, minimum frequency, consistency of minimum frequency, and shape of pulse assist in the identification of bat vocalizations. Due to similarity of call characteristics, two species (big brown and silver-haired bat) were lumped into one species category. All *Myotis*-like calls were identified to genus only and submitted to NYSDEC-recommended biologist, Eric Britzke, for identification to species. To obtain species identifications, an ID filter (Britzke and Murray 2001) was loaded into Analook to determine calls sequences of sufficient quality and length for species identification to be attempted. Once separated, echolocation calls of sufficient quality and length were also identified using quantitative techniques (Britzke 2003). Quantitative analyses are conducted by a cross-validated classification model based on 10 extracted call parameters [duration (Dur), maximum frequency (Fmax), minimum frequency (Fmin), mean frequency (Fmean), duration to the knee (Tk), frequency of the knee (Fk), duration of the body (Tc), frequency of the body (Fc), initial slope (S1), and slope of the body (Sc)] collected from 1,846 sequences (35,979 calls) of 12 eastern U.S. bat species (Britzke 2003). Average accuracy rates for species identification using this statistical method ranges from 56.9% (*L. borealis*) to 98.5 % (*M. grisescens*), with accuracy rates for *Myotis sodalis* ranging from 81.4% to 88.6%.

3.4.2 Results

Passage Rates

The total number of calls and number of calls per night, recorded by each AnaBat unit varied by location and season (Table 4). The met tower AnaBat unit detected 769 bat calls total (19.72 calls/night) during the 39 days of spring sampling. Sampling at the two non-met locations during spring resulted in higher bat activity (29-33 calls/night) than at the met tower, despite changing in sampling location for the non-met unit. Summer sampling occurred at the met tower on 9 nights and recorded a total of 198 calls (22.0 calls/night). Approximately 2.5 times as many calls (55.56 calls/night) were recorded at the non-met 2 location during summer, likely indicating a nearby roosting colony of species and/or better habitat for foraging bats. During fall, the AnaBat unit positioned at ground level at the met tower recorded the lowest number of bat vocalizations per night (9.26 calls/night). Despite a similar number of sampling days, the AnaBat unit located at the radar sampling station recorded more bat calls/night (32.58). Approximately 93% of calls (n=1519) at the radar location were recorded between August 15 and August 21. Only 25% of the calls recorded at the met tower (n=117) were recorded during the same sampling period.

Table 4. Number of sampling days, total number of calls recorded, and calls/night recorded by each AnaBat unit for spring, summer, and fall sampling periods.

Season	Location	# of sampling days used in analysis	Total # of calls	# calls/night
Spring	Met tower low	39	769	**19.72**
	Non-met 1	11	320	**29.09**
	Non-met 2	24	782	**32.58**
Summer	Met tower low	9	198	**22.0**
	Non-met 2	9	500	**55.56**
Fall	Met tower low	50	463	**9.26**
	Radar	50	1629	**32.58**

Species Identification

Using qualitative analysis of search calls, 5 species groups of bats were positively identified at the met tower location (Table 5). As is typical with AnaBat sampling, the majority of vocalizations were unable to be identified due to the few number of pulses per call (<5 pulses/call sequence). Relative call frequency was calculated by dividing the number of calls recorded for each species by the total number of calls recorded at the met tower for each season. Of those calls that were able to be identified to species, *Lasiurus borealis* calls accounted for the majority of the vocalizations during all seasons at the met tower.

Summer sampling with the mobile AnaBat unit occurred on nine nights and recorded 464 bat calls (Table 6). The objective of the mobile sampling was to identify to the extent possible the species of bats using the St. Lawrence Windpower project area during the summer breeding season. As with the fixed station sampling, many calls could not be identified to species. One individual of an additional species, eastern pipistrelle (*Pipistrellus subflavus*), was recorded during the roaming surveys and not recorded during sampling at the passive monitoring stations. The highest number of recorded calls was of hoary bat (Table 6); however, 95% of those calls occurred on one night at one location and may have been from only one or a few individuals echolocating repeatedly near the AnaBat microphone.

Following the qualitative screening, 208 call files with characteristics resembling *Myotis* species were submitted to Eric Britzke for further analysis. Of those files, 76 calls (36.5%) did not contain sufficient enough information to be processed quantitatively. The remaining calls were analyzed quantitatively on a nightly basis by site (Britzke 2003). Calls meeting the quantitative criteria for the following species were identified: eastern red bat (22 calls), little brown bat (50 calls), northern myotis (44 calls), and Indiana bat (16 calls).

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Exhibit 2

Anabat Product Description and Specifications from Anabat website

ANABAT

Anabat Contents

- **Overview**
- **Storage ZCAIM**
- **AnaPocket - Anabat on a PDA**
- **AnalookW - Software for Windows**
- **Technical Notes**
- **Notes on bats**

Software/Firmware

- **Latest AnalookW Software**
- **Latest AnaPocket Software**
- **Latest Software for SD1 and Storage ZCAIM**
- **Other Utility Software**

Back to: Home

Overview

Anabat is a system designed to help users identify and survey bats by detecting and analysing their echolocation calls. It carries a strong emphasis on passive detection, in which the detector is used as a logging device to monitor bat activity in the absence of human intervention. But it is also very well suited to active monitoring, where the user watches bats in much the same ways as a birder watches birds. In that case, a bat detector is substituted for binoculars as the main enabling technology.

For passive monitoring, there are three main components to the system, a Bat Detector, a ZCAIM and software. In the newer SD1 model, the detector and ZCAIM are combined into one housing. The detector and ZCAIM can be placed in the field and protected from the weather, so they can monitor bats all night long, every night for months or even years at a time, while saving their data to a Compact Flash memory card (like those used in cameras). The card is typically swapped out in the field with an empty card, and then downloaded to extract the stored data, which can be viewed and managed in the AnalookW software.

For active monitoring, the ideal setup is an SD1 with an attached PDA, which allows in-the-hand monitoring of bat calls in real time. This arrangement gives the user maximum freedom of movement to follow bats on foot. Surveys can easily be conducted on foot or from a moving vehicle. The ability to see bat calls in real time has many benefits, making it much easier to associate different bat call types with the bats and their behaviour. See here for more details.

The Bat Detector is used to produce audible output from the ultrasonic (and therefore generally inaudible) sounds which bats generate in order to echolocate. While there are many types of bat detectors available commercially, those used in the Anabat system are the ANABAT II and SD1 detectors. The SD1 is a more recent model which combines a detector and ZCAIM (see below). These are frequency dividing (FD) detectors which provide a broadband frequency down-conversion, which generates audio signals with frequencies directly related to those the bat is producing. Many authors have treated Frequency Division detectors as poor cousins of the more complex detector types, because they provide less complete detail of the recorded bat calls. However, there are many tradeoffs in bat detector design, and the Anabat detectors provide a number of very important facilities which are not possible with other detectors. Anabat detectors make it very fast and easy to see the output which is of most value for species identification (the frequency-

time characteristics of bat calls), and they provide this in a manner which is extremely efficient in terms of data storage requirements and power consumption. Furthermore, the nature of the data generated by Anabat detectors is ideally suited to analysis using Zero-Crossings Analysis (ZCA), which provides very clear depictions of the important call details without the blurriness inherent in displays made using FFT (which is necessary for other forms of call analysis, and is also much slower and requires relatively huge amounts of data). FD and ZCA are used in combination to allow Anabat detectors to provide realtime displays of bat calls, and to facilitate long term passive monitoring. Other techniques, such as time-expansion, may give more complete depictions of call detail, but these extra details have little if any value for species identification and they impose other costs (such as not being able to record all the time, not being able to provide realtime displays and demanding vastly greater storage space) which limit their use in other ways.

The ZCAIM (Zero-Crossings Analysis Interface Module) is a piece of hardware which interfaces the audio-frequency signal from the Bat Detector to a computer, such as a PC, laptop or PDA. At this stage, only computers running the Windows operating system are supported. The ZCAIM is necessary to efficiently provide the fine temporal resolution required for ZCA. It is NOT true that normal computer sound cards can be used effectively for this purpose. The ZCAIM is included inside the SD1 detector, which provides the functionality of both the detector and ZCAIM in the one box. The older CF Storage ZCAIM is a separate piece of hardware intended for use with an Anabat II bat detector.

The software consists of two main programs:

CFCread which allows management of the ZCAIM for passive recording and downloading of data from CF cards.
AnalookW which allows viewing and manipulation (such as call parameter extraction) from saved Anabat data and has many facilities for data management.

two utility programs:

PicLoad which allows upgrading of the firmware in CF Storage ZCAIMs and SD1 detectors
AnaSun which provides computations of sun and moon rises and sets and twilight times.

and PIC firmware for the SD1 and CF Storage ZCAIM.

The Anabat hardware is avaliable from:

Titley Electronics
PO Box 19
Ballina
NSW 2478
Australia

Phone: +61 (02) 66 811017
Fax: +61 (02) 66 866617
Email: info@titley.com.au

Back to: Anabat Contents, Home

Latest AnaLookW software

AnaLookW version 3.3q dated 3 Oct 2006

Download ANALOOKW.ZIP (409 KB)

Latest AnaPocket software

AnaPocket version 2.5b dated 24 July 2007

Download ANAPOCKET.ZIP (163k)

Latest Storage ZCAIM and SD1 Software / Firmware

CFCread

Software required to read a CF card used in a storage ZCAIM, and also to set the time in the ZCAIM.

The version of CFCread which you use must be appropriate to the version of PIC firmware in use. The current version is Version 4.2a dated 31 Oct 2006. It should be paired with the latest PIC firmware for all the functionality to operate correctly. Always update CFCread and the PIC firmware together, if both are new. The most common problem with using incompatible firmware and software is that a new firmware version might store new codes onto the CF card which cannot be read by an earlier version of CFCread.

Version 4.2a, dated 31 Oct 2006

(to check version number, click on system menu at left of CFCread dalog title and open the ABOUT box)

Download CFCREAD.ZIP (196k)

PIC Loader

Software required to upload storage ZCAIM internal firmware via serial port.

PICLOAD version 3.7b dated 18 July 2007

(to check version number, click on system menu at left of PICload dialog title and open the ABOUT box)

Download PICLOAD.ZIP (164k)

PIC firmware

Storage ZCAIM and SD1 internal firmware, which can be upgraded via the serial port using PICLOAD. You MUST use the latest version of PICLOAD when updating the firmware.

Always make sure you upgrade to the latest CFCread version when you update the PIC firmware.

(to check version loaded into the storage ZCAIM, connect ZCAIM to laptop via serial cable and run CFCread, open port and read Version.)

Download SZ2.ZIP (13k - version 237g3) for earlier model Storage ZCAIMs using the PIC16F877 chip and with version numbers V2xxg3

Download SZ3.ZIP (14k - version 3019g) for later model Storage ZCAIMs using the PIC18F452 chip and with version numbers V3xxxg

Download SD1.ZIP (14k - version 4019g) for SD1 Storage Detectors with version numbers V4xxxg

Other Utility Software

ANASUN Version 1.0a

A utility which generates tables of Moonrise, Moonset, Sunrise, Sunset and Twilight times for either a whole year or a single month. Enter your position in degrees and decimals for latitude and longitude, and your time zone in hours relative to GMT (west of Greenwich is negative). Output is a text file, tab delimited for easy access by spreadsheet programs. Requires Windows 9x, NT or 2000.

Download ASUN10a.ZIP (114k)

Back to: Anabat Contents, Home

Technical Notes

- **Anabat File Formats**
- **Harmonics**
- **Glossary**
- **Fpz and the Flatness display**
- **Weather Protection**
- **AnalookW call parameters**

Back to: Anabat Contents, Home

Contact Information

I am always anxious for feedback, and welcome criticism just as much as positive feedback. If you have any suggestions for improvement, or any corrections to make, please contact me by Email. I am also very interested to hear from anyone who thinks I have misrepresented anything, as I want this to be a web page which is useful and informative, and I don't mind including alternative viewpoints.

Email: corben@hoarybat.com

Last revised: September 02, 2007.

Save Our Scenic Area (SOSA)

[redacted]

www.saveourscenicarea.org

Comment on Whistling Ridge Energy Project

Draft Environmental Impact Statement (DEIS)

Specific and General Comments of Sections 1 thru 3

August 27, 2010

Stephen Posner
Energy Facility Site Manager
Washington EFSEC
905 Plum Street SE, 3rd Floor
PO Box 43712
Olympia, WA 98504-3712

Andrew M. Montaño
Environmental Protection Specialist
Bonneville Power Administration
PO Box 3621 KEC-4
905 NE 11th Avenue
Portland, OR 97208-3621

Dear Messrs. Posner and Montaño:

Save Our Scenic Area (SOSA) is involved with the Whistling Ridge Energy (WRE) project application as an Intervener. SOSA is a non-profit corporation formed by concerned local Gorge citizens. Its primary mission is to help preserve the Columbia River Gorge National Scenic Area view-shed; to further maintain the existing rural and scenic character of Underwood, Washington, and surrounding communities in Washington and Oregon; and work to preserve the intent of the Columbia River Gorge National Scenic Area Act. I am writing today to provide comments on the recently issued draft environmental impact statement (DEIS) for the WRE proposal.

SOSA is submitting several different comment letters, covering a variety of subject matter within the DEIS. We have also reviewed the comments submitted by the Friends of Columbia Gorge, agree with them and incorporate them by reference. There are multiple environmental issues involved in the consideration of this project and it is important that each be given through consideration in the EIS process. We find that, in many areas, the present DEIS is completely insufficient and we urge that the NEPA/SEPA responsible officials prepare a supplemental DEIS.

Save Our Scenic Area (SOSA)

[redacted]

www.saveourscenicarea.org

The following 24 pages of charted comments, plus Exhibits, are intended to address some, but not all, of the deficiencies noted in the WRE DEIS. In all cases, the deficiencies are explained. In most cases, particular remedies are suggested. Because no remedy is proposed by SOSA does not mean there should not be one implemented by the NEPA/SEPA responsible officials.
Two of the larger sized Exhibits will be included as separate PDF files: exhibit 2E and exhibit 2F.
All other exhibits appear at the end of this charted comment letter/file.

Thank you for this opportunity to comment on the DEIS. SOSA trusts that the DFEIS and FEIS will provide facts and analysis on the issues raised herein.

Regards,

Thomas Drach, PE
Board Member

Specific DEIS Comments from Save Our Scenic Area (SOSA)

August 27, 2010 [redacted] www.saveourscenicarea.org

Comment #	Section Number	Page Number	Heading Number	Paragraph Number	DEIS Text	Declared Deficiency	References	Remedy
1	1	1	1.1	1	...and there is a proven wind resource at the site.	The use of the word "proven" should require substantiation. A review of government websites, like the National Renewable Energy Labs (NREL), found at windpowermaps.org, shows a wind rating for the WRE site as Marginal to Fair. They should provide met tower data, and the location of such. The only currently observed tower, from a public vantage point, is located on the highest predicted wind power location within the site, so additional met tower data should be provided at the lowest predicted locations as well. Given the Federal Investment Tax Credit, it is imperative that the public grants are used up on the best potential wind resources first, which this site is NOT. (according to goverment predicted models) The Applicant should justify with supportably detail data to demonstrate otherwise. see also comment at 1-9 (1.4.1)	Exhibit 2B Exhibit 2C	Wind Resource must be quantified by met tower data in multiple locations, and with wind direction in all THREE axes. Then these data must be compared to the alternative of wind resources in the Eastern portion of WA State. Wind power versus wind speeds must be discussed and compared.
2	1	7	1.3.1	2	BPA must consider the environmental consequences of its proposed actions—in this case, the proposed interconnection of the project to the FCRTS—under NEPA…	BPA must consider under NEPA, not only the environmental impacts of the substation, but also the environment impacts of the WRE project as a whole, when issuing it's Record of Decision		BPA must consider under NEPA, not only the environmental impacts of the substation, but also the environment impacts of the WRE project as a whole, when issuing it's Record of Decision
3	1	8	1.3.2	4	Those agencies may use this EIS in order to fulfill their NEPA or SEPA responsibilities.	Providing that the final EIS is a fair, accurate, clear, and truthful document of the issues.		Issue a complete and accurate final EIS as the document used by Decision-makers in the Adjudicative process.
4	1	9	1.4	1	Two alternatives are evaluated in this EIS: the Proposed Action (authorizing construction and operation of the proposed Whistling Ridge Energy Project and associated components) and the No Action alternative …	Proposed Action and No Action alone does not satisfy SEPA or NEPA requirements. The extent of available lands in the analysis should be determined by partnerships or contracts between Applicant and other parties/investors.		Reference SOSA comment letter addressing the topic specifically, in detail
5	1	9	1.4.1	2	• The site has a proven, robust wind resource	- No legal data exists for A1-7, South of South BPA line, due to no conditional use permits issued by Skamania County, confirmed by Public Information Request, Drach to Skamania County Planning Dept. July 2010 - Any Met tower Data in the Appendicies? - NREL wind power maps show the WRE site ranging from Marginal to Fair, as compared to typical Eastern WA projects listed as Fair to Good (www.windpowermaps.org) see also comment at 1-7 (1.3.1)	Exhibit 2G	Wind Resource must be quantified by met tower data in multiple locations, and with wind direction in all THREE axes. Then these data must be compared to the alternative of wind resources in the Eastern portion of WA State. Wind power versus wind speeds must be discussed and compared.
6	1	11	1.4.1.3	3	. The Underwood Tap to Bonneville Powerhouse 1-North Camas 115-kV line adjacent to North Bonneville-Midway 230-kV transmission line would require a new steel lattice structure to raise the conductors such that the 230-kV line can cross underneath for this interconnection.	The explanation of this requirement is unclear.		Provide a graphic of the substation site and locations of extra towers required. Identify if this is related to both potential substation locations.

Specific DEIS Comments from Save Our Scenic Area (SOSA)

August 27, 2010 [redacted] www.saveourscenicarea.org

Comment #	Section Number	Page Number	Heading Number	Paragraph Number	DEIS Text	Declared Deficiency	References	Remedy
7	1	12	1.4.1.5	4	Less than 5,000 gallons per day is anticipated for kitchen and bathroom use.	No mention of quantity of water used to wash/clean Wind Turbine Blades and Towers. No mention of detergents involved in cleaning operation, nor potential release of chemicals into ground water from Turbine cleaning operations.		All uses of water at the site must be discussed, and the impacts of ALL water releases into the environment must be identified and addressed. i.e. washing the exterior of the Industrial Equipment.
8	1	12	1.4.2	1	This [No Action]alternative would not help the state of Washington in achieving the renewable energy goals mandated by the state's RPS.	This is true for the ALL ALternatives, Action or No Action. There is no control over which state gets credit for the Renewable Energy from WRE, the power is sold to the highest bidder. EFSEC would need to condition WRE's permit to sell its power only to Washington State entities, resulting in possible legal complications.		The EIS can not claim that WA RPS are benefitted as a result of this Project as proposed. This must be removed as a discussed Benefit of the Project, unless an approved permit conditions the sale of WRE power ONLY to Washington State CONSUMERS, via utility contracts.
9	1	13	1.4.3.1	2	• Applicant-owned land that contained high ridges on which to place wind turbines with little impact to the continued underlying use of the land for commercial forestry	Applicant states in DEIS that commercial forestry would cease for the life of the Project. Plus, why are high ridges mutually exclusive for wind, this is not true for most all Projects in Eastern WA and OR. Note: this citation is one of 3 KEY criteria for establishing a site. It is flawed in logic, and will bias the conclusion that only the proposed site is feasible.		The Alternatives analysis must be redone with the criteria removing the requirement of placement on a high ridge, as this artificially excludes viable lands. Remove the limitation of placement only in areas used for commercial forestry.
10	1	13	1.4.3.1	2	• Land in proximity to existing high voltage transmission lines	Proximity simply translates to a financial impact, which would be covered as a potential negative in a proposed alternative. Simply not including an alternative due to cost is not complying with SEPA and NEPA. It is up to the decision-makers to determine if those potential extra costs outweigh any potential benefits of the alternate location.		The DEIS should identify viable Alternatives by including projects in lower impact areas. In the case of a location distant from the GRID, presumably a larger MW capacity would be contemplated to justify the extra cost, and these analyses should be made available to all to understand.
11	1	14	1.4.3.2	3	These objectives include providing a minimum level of generation to be attractive to utilities seeking to fulfill their RPS requirements, ...	Documentation should support these claims as to the minimum level power genereation, as well as the Entities (presumed Buyers) which have conditioned future potential agreements upon said minimum level of power generation, and the service area of said Entities. (ie. WA, CA, AZ, etc.)		The EIS should include written statements from prospective Utilties which might purchase power from WRE, stating whatever conditions should exist for a Purchase Agreement to be negotiated at some future date.
12	1	14	1.4.3.2	3	In order to provide this return, the Applicant has determined that the project must be capable of producing a minimum of 70 MW.	Unsubstantiated claim, this is a private project operated for the public good, therefore financial analysis and justification is NOT exempt from review. (ie for WA RPS mandates)		The EIS should include written statements from prospective Utilties which might purchase power from WRE, stating whatever conditions should exist for a Purchase Agreement to be negotiated at some future date.

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13	1	15	1.4.3.5	1	**Alternative Project Configurations** As discussed above, the proposed project site contains a series of ridge lines that are conducive to locating wind turbines but at the same time are limiting as to where those turbines can be placed. This means that there are limited options for locating wind turbines within the site.	With the restricted area cited in the DEIS for Turbine micro-siting, the minimum 70MW economic viability number, and the marginal wind conditions cited by NREL, any ersatz assumptions about Project perfomance could lead to economic failure. With such a tight margin for error, as claimed by the Applicant, the overall Project risks appear to surpass the proposed benefits. This must be considered by the Council in contrast to the same circumstances of Kittitas, Big Horse, etc. Economic viability, with the Federal PTC, and without the Federal ITC of 30%, should be validated by the SEPA Responsible Official.		WRE, touted as a project to help WA society to meet its RPS goals, is a project for the Public welfare, and must include financial viability. The project's decision-makers must have the financial date, so potential Environmental COSTS to the public can be weighed relative to potential private PROFITS.
14	1	16	1.4.3.6	2	Alternative Access Roads • **Route 1:** Ausplund Road to a private logging road vacated by Skamania County in 1987, which crosses private property (not owned by the Applicant) that is currently used for residential, agricultural orchards, and commercial timber production and harvest	There is at least a 500' portion of the old Ausplund Road that does not exist, it is overgrown with trees. (Picture attached) The portions of Ausplund Road Private are not available to the Applicant. Road building and improvements within the CRGNSA have been acknowledged by the Applicant as not allowed. This is simply NOT a viable Alternative, and therefore does not satisfy the SEPA requirments. Applicant failed to include viable alternatives, like **Little Buck Creek Road**, which publicly connects with their land, and would **reduce** traffic congestion on Cook-Underwood Road, since it turns off early in the proposed route.	Exhibit 2A	The EIS must remove Ausplund Road from consideration, and replace it with a known viable alternative - namely Little Buck Creek Road, or other real, existing route.
15	2	22	2.3.6	2				
16								
17	1	16	1.4.3.6	2	Alternative Access Roads • **Route 2:** Kollock-Knapp Road to Scoggins Road to a private logging road called the CG2930 road on County Assessor's maps, which crosses property owned by the Applicant that is currently used for commercial timber production and harvest	Kollack-Knapp Road was officially retracted by the Applicant in its Amended Application submitted around October 2009. By the Applicants own statements, it is NOT a viable Alternative, and therefore does not satisfy the SEPA requirments. Applicant failed to include viable alternatives, like **Lacock-Kelchner Road**, via Little Buck Creek Road, which publicly connects with their land, and would **also reduce** traffic congestion on Cook-Underwood Road, since it turns off early in the proposed route.	Exhibit 2A	The EIS must remove Kollack-Knapp Road from consideration, and replace it with a known viable alternative - namely Lacock-Kelchner Road, or other real, existing route.
18	2	22	2.3.6	2				
19								
20	1	22	1.6	Table 1-1	Table 1.1 Row 1: Earth - Construction: A detailed geotechnical invesetigation **would be** performed to identify any sub-surface conditions	This is yet another example of a deficiency in the DEIS - no-one can assess the environmental impact of massive recontouring, excavating and roadbuilding on steep slopes, until the geotechnical asssessment is completed and included in the DEIS. This Study must be done, and included in the FEIS. Moderate to Severe changes to topography are likely, given the steep terrain and soil types. Prevailing winds would place the Turbines on the steepest Western slopes of the Ridge, and/or risk loss of critical performance if set too far to the leeward side of the Ridge. Economic viability could be at risk if geotechnical report finds problems. Please note that the economics appear marginal, so the risk level could be high.	Exhibit 2D	The steep ridges of the proposed WRE project present significant geotechnical challenges that do not exist for projects placed in farming area. The EIS must include real and likely ground-displacing activities, the volumes of material to be moved, the locations of displaced material, the depths needed to secure foundations, etc. if for no other reason than to ensure the Applicant that realistic construction costs do not render the project economically unviable.

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21	1	23	1.6	Table 1-1	Table 1.1 Row 2: Biological Resources, Column 4: Impact of No Action Alternative: Potential Impacts from construction of fossil fuel power plants.	Please clarify the language, as SOSA's interpretation is that the Applicant would thus potentially pursue a fossil fuel (natural gas) plant at this site, if No Action on the Wind Plant was followed. One may already be being planned even if the Wind plant is permitted.		Clarify the statement by indicating if this is a general statement, or specific to the vicinity of the proposed WRE project. (i.e. within 10 mile radius)
22	1	23	1.6	Table 1-1	Table 1.1 Row 2: Construction, Column 5: Micrositing of turbines and associated facilities would allow sensitive resources discovered during construction to be avoided.	Applicant states in DEIS that the micrositing corridor is very narrow along the ridge line due to steep slopes on both sides. Any discovery of sensitive resources, or even geologic hazards, could disrupt or preclude a major portion of the entire Project, thus placing it in financial jeopardy. Compared to Facilities cited in farm lands and grass/shrub/steppe topography, this site has almost no flexibility to adjust to problems discovered during construction.		No concrete remedy to suggest, and no pun intended.
23	1	24	1.6	Table 1-1	Table 1.1 Row 1: Operation, Column 2: There would likely be some mortality to birds and bats….., though not in sufficient quantities to affect population viability.	This is a sweeping and dangerous generalization. PLUS, what constitutes a given species' viability has NOT been defined anywhere in this DEIS. Such a subjective assertion does injustice to the scientific principles and integrity required in any EIS. The data is sufficient to clearly show greatly elevated bird and bat numbers compared to recent wind projects in Klickitat County, WA. And the actual mortalities **far exceeded** predicted mortalities at those sites. One should assume a similar trend for these Projects in close proximity. It is a great leap to go from prediciting mortality to predicting a species viability. In this Project site, how many Goshawks can society loose? How many Townsend Big Eared Bats can society loose before they are non-viable? It really depends on who you ask. Rather than forcing the issue, society should first choose and deplete the sites for Wind Turbines where man has **already developed** - meaning - use up the nation's farmland for wind energy before clear cutting the forest to do so.		The EIS should remand the Bat studies for completion again, using the mature technology of the Anabat 2 hardware, and Analook software, which is capable of identifying species of Bats, not just a threshold 35KHz between big and small bats. A significant discrepancy between the WEST 2008 and 2009 studies is the duplicative sensors and the filtered noise percentages, confirming the underlying assumptions between the two studies changed dramatically, but were not discussed.
24	1	24	1.6	Table 1-1	Table 1.1 Column 5: Convene a Technical Advisory Committee to evaluate the mitigation and monitoring program….	If created, this Committee should be much more than just Advisory. If just advisory, then it must answer to some entity other than the Applicant, that can rule and enforce mitigation actions. The composition of such a Committee and Authority should be composed of the Applicant, government agencies, and identified stake-holders in the interest of the environment. As such, organizations like the state and regional Audobon societies, The Friends of the Columbia Gorge, and others should be ongoing participants in the review and development of appropriate mitigation measures. Furthermore, a Committee or Authority without juristictional authority to limit operating hours is useless, and does not further the dynamic balance between human and environmental needs which will occur over the life of this Project (and beyond..).		The EIS should include fine details, outlining the structure and authority of a Committee that is not just advisory, but one that could implement any level of mitigation and operation restrictions if deemed appropriate. EFSEC Decision-makers should have a clear idea of the likely protections which could be applied during Project Operations, in the event actual impacts and deaths exceed estimated impacts and deaths.

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25	1	26	1.6	Table 1-1	Table 1.1 Column 2: **Operation**: Turbine fires are possible, however …..are extremely rare.	This issue is **serious**, because even if the potential occurance is low, the risk to **ALL** residents of Underwood's lives and properties is extremely high. Any standardized risk assessment model uses the product of "occurance" and "severity of occurance" to assess risk. (for example - FMEA -Failure Modes Effects Analysis) It appears the Applicant wants to oversimplify this issue by not considering the issue in a proper manner. This Project is proposed in a Forest environment: an ingniteable fuel source in close proximity to the Turbines. There are areas in the Project site that cannot be clearcut to reduce the fire risk - namely the western slopes where identified slide hazards exist, and there are unlogged lands on the western slopes owned by Washington state DNR. (between North BPA line and South BPA line ~1 mile?) The statement about being extremely rare is based upon typical wind farm topography and elevation. The steep terrain, and unconfirmed meteorlogical data, combined with elevated fuel loads compared to the norm, may likely result in a catastrophic wildfire event. Without comparible scenarios, existing data should not be relied on. In the alternative, the Applicant could continue its current site condition by maintaining the massive clearcutting already undertaken thoughout most of the Project area. This, however, would result in the effective "permanent" removal of the "forest" ecosystem, and those environmental impacts would then need to be addressed, and presumably mitigated. Again, cost is a major part of the equation, and this Applicant has already said they are on the edge of viability. One can insure property, but not lives.		The DEIS should consider the Environmental Impacts of the project, as if the entire site were removed from Forestry alltogether, and the ground maintained with minimal fuel loads.
26	1	26	1.6	Table 1-1	Table 1.1 Column 2: **Operation**: At a distance beyond 2500 feet, shadow flicker is considered…… Even if shadow flicker were a proven impact, none of the planned turbines are within 2500 feet of existing residences.	The statement fails to identify a permited residential structure, applied well prior to WRE's Application, that is within 2000 feet of the proposed Facility.		Consider adding the following language to the end of the existing sentence: " , and the permitted residence at 2000 feet could be mitigated by appropriate vegetative screening placed by the Applicant on its land, adjacent to the affected residence." Since this 80 acres of land, in the Project Site, was just logged in June/July 2010, new vegetation will need to be planted if this measure is deemed appropriate.

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27	1	26	1.6	Table 1-1	Table 1.1 Column 2: **Operation**: EMF from the project will be lower than those of many common household appliances and would have no health or safety impacts.	Please provide/include data to support this assertion. Not only Electromagnetic Fields (EMF) should be included, but also stray electrical voltage produced during normal operations, during lightning storms, and especially power must be dumped into the ground during temporary grid overload conditions. One of SOSA's members, Tom Drach, and his family live at a residence roughly 2500 feet from proposed Turbines. There is strong evidence to suggest such stray electricity would pose a safety impact, due to potential failure of Electrical services and systems dependent upon such. For example, Ground-Fault Electrical Devices required by WA Code. The geology of this area is known to contain faults and fractures, which would tend to carry electrical energy much, much further than in an homogenous isotropic type soils, which is likely assumed in the Applicant's analysis.		Any proposed permit should include provisions for nearby residents to fully remedy issues related to stray voltage and stray electro-magnetic energy, with the entire cost burden placed on the Applicant.
28	1	28	1.6	Table 1-1	Table 1.1 Visual Resources, Column 2: Operation: The turbines would be visible from some viewpoints, including some within the CRGNSA. This project has the potential to create low to moderate levels of visual impact at key viewpoints.	The statements made here should be quantified, or terminology defined more precisely. The wording tends to minimize the issue, and "low to moderate" should have some reference scale for decision-makers to know how to gage severity on a commonly understood basis. Such subjectivity, especially in a summary, can lead to erroneous interpretations. (decision-makers with limited time to review may rely on the Summary to inform them as to the critical issues involved)		Quantify the visual impacts in table format for each Key Viewing Area within the CRGNSA, as well as other noteworthy points in view of the proposed project. Remove subjectivity by implementing an intuitive, commonly understood reference scheme.
29	1	31 AND 33	1.6	Table 1-1	Table 1.1 Public Services and Utilities, Column 2: Operation: The project's assessed value could be as much as $87.5 million, and this would generate approximately $800,000 per year in tax distributions..... AND Table 1.1 Socioeconomics, Column 2: Operation: The proposed project would have an estimated value of $87.5 million, which would represent an increase of 6.5% in assessed value in the County. At current tax rates, the increase in property tax revenue to the County would be $731,500 annually.	The statement in Table 1.1 must accurately reflect the **likely** financial benefit, rather than the **theoretical** maximum, so the decision makers can weigh the true benefit appropriately. WRE's number **grossly exaggerates** the tax benefit to municipal, County, and local juristictions. The SEPA responsible official should contact Mr. Gabe Spencer, Skamania County Assessor, to confirm these numbers are not accurate. A member of SOSA had a conversation with Mr. Spencer on June 24, 2010, and left with the following understanding: Scenario 1 - Project remains privately owned during operation - then Assessed Value will be a negotiated 10 year average value which will remain constant for the first 10 years - to offer more uniform cash flow for the County Budget versus Straight Line or MACRS depreciation methods. (ref Klickitat County model) Furthermore, by complex Budget laws, residents in the Underwood District would otherwise be potentially subject to the shortfall in revenue as depreciation mounted from the Project. (Surely this would be a strong negative for Underwood Community) So- under the 10 year average scenario - WRE's tax payments would be closer to $350,000 per year, NOT $800,000. Scenario 2 - The Project is acquired by a WA state recognized public utility, like PSE. The tax for this is not determined by local real tax law, but by a complex formula within the State Dept. of Revenue (WDOR). According to Ms. Chris Miller, Columbia County, WA Assessor, their Projects which have fallen under WDOR juristiction have only provided thier County with approximately one-third (33%) of the revenue claimed by the Applicant using the same assumptions as WRE has here. So this value would be ~$266,000, NOT $800,000 per year.	Mr. Gabe Spencer Skamania County, WA Assessor 509-427-3720 Ms. Chris Miller Columbia County, WA Assessor 509-382-2131 Mr. Van Vandenberg Klickitat County, WA Assessor 509-773-3715	The SEPA Responsible Official should consult with the Skamania County Assessor to determine the potential financial outcomes, and report as such in the EIS. The only data provided in the EIS is clearly based on the Applicants information to the SEPA responsible official, and does not reflect the two MOST likely scenarios. If the present DEIS scenario is maintained, it should reflect a declining tax payment based on equipment depreciation, and the real, long-term burden on the Underwood residents thru increased levy rates.

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30	1	31	1.6	Table 1-1	Table 1.1 Public Services and Utilities, Column 5: Operation: Fire Protection: [list of 9 bulleted items]	For the Operation phase of the project, nowhere is there listed an intent to construct and maintain a water reservoir or storage capacity for on-site fire suppresion of the Project site if a Turbine fire failed to be contained. Given the fuel loads present, and lack of water, any Fire Protection and Prevention Plan should be required to include a storage reservoir suitable for use by both land-based equipment and fire-suppresion helicopters. Due to steep terrain, the turbulent updrafts present along the ridgeline would limit the ability of fixed-wing aircraft to assist in fire suppression at key areas of the Project site. Simply complying with existing DNR regulations, as the Applicant suggests, does not suffice, for the DNR statues could not have contemplated the operation of Industrial-grade mechanical and electrical equipment of this magnitude operating in a forested environment, and 24 hours a day, a good portion of which without human observation.		Include the requirement for, and analyze the impacts of, establishing a fire suppression reservoir, or holding tanks to combat runaway fires.
31	1	33	1.6	Table 1-1	Table 1.1 Socioeconomics, Column 2: Operation: The project would employ eight to nine employees; most would be hired from the local area.	Please also include the number of Full-Time Equivalences (FTE's) that these eight to nine employees would provide. This is the best way to clarify for the decision-makers how much benefit is realized thru Project operation.		Include Full-Time Equivalents (FTE's) as part of the description of Operations Personnel.
32	1	33	1.6	Table 1-1	Table 1.1 Socioeconomics, Column 2: Operation: Based on a review of available studies, operation of the project is not expected to create adverse impact to property values.	Data on this subject is limited for a number of reasons. Significant differences in underlying assumptions hold for the WRE project. As such, "... a Property Value Guarantee (PVG) should be required of the developer. A State-controlled fund or developer bond should be required to guarantee no undue delay in PVG payment(s) to legitimately affected homeowners, and/or to buy out homeowners located within 2-miles of any turbines if they elect to relocate away from the turbine project(s) and cannot sell for the pre-project market value of their properties. Such a guarantee is nominal in cost, relative to total project costs, and are used to condition high impact land use approvals such as landfills and even limestone quarries, as well as other wind energy developments." *	Exhibit 2F, attached as separate PDF file due to size. * - Citation from McCann Apprasial LLC Property Value Report to Adams County Board, IL, June 8, 2010, copy included in Appedix This report includes several other recommendations, appropriate for conditioning the WRE Application, to protect residents if Developer claims are later determined to be incorrect.	The EIS should include, in the Appendix, a reference Template on a Property Value Guarantee, which generally outlines the structure and authority of such a Guaranted by the Applicant. Decision-makers should have a clear idea of the likely protections which would be result, in the event they choose to implement such, as part of any conditioning of a project permit.

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33	1	34	1.7	Table 1-2	Table 1-2 Row 4: Biological Resources, Column 2: This level is not expected to be high enough to impact species viability.	See our response for text on page 1-24, Table 1-1, Row 1, Column 2		The EIS should remand the Bat studies for completion again, using the mature technology of the Anabat 2 hardware, and Analook software, which is capable of identifying species of Bats, not just a threshold 35KHz between big and small bats. A significant discrepancy between the WEST 2008 and 2009 studies is the duplicative sensors and the filtered noise percentages, confirming the underlying assumptions between the two studies changed dramatically, but were not disclosed or discussed.
34	1	34	1.7	Table 1-2	Table 1-2 Row 6: **Public Health and Safety**, Column 2: Unavoidable adverse impacts to **environmental health** are anticipated to be minimal.	Please amend or clarify this statement, as it **OMITS** any reference to Public **Safety**. (The Element of the Environment heading is: Public Health and Safety) Plus, should one assume that the word "environmental" used in the DEIS is synonomous with "Public"? Also, please refer to our comments above about the serious issue of Fire Safety, Public life, and public property damage resulting from a failed Fire Management scenario. (Ref comment at Page 1-26: Table 1.1 Column 2: Operation: Turbine fires are possible, however …..are extremely rare.)		Please correct the wording to address Public Health and Safety, rather than environmental health.
35	1	35	1.7	Table 1-2	Table 1-2 Row 1 (on page 1-35) column 2: **Noise:** …and operation noise is predicted to be less than the nighttime threshold of 50 dbA Leq, per Washington State and Skamania County regulations.	Even though Oregon has much more progressive laws on noise and setbacks, the minimum legal standard in WA is the (woefully inadequate) Washington Administrative Code (WAC 173-60).WA noise standards. The public welfare is better served by, and EFSEC is encouraged to so condition, the Environmental Protection Agency Guidelines: In April 1973, the local EPA Region X office published a document titled, "Environmental Impact Statement Guidelines." This document discusses potential impacts from noise increases in terms of expected community response to the introduced noise source. This regional EPA guideline document suggests the following potential community responses to ranges of noise increases: • Up to 5 dBA increase – few complaints if gradual increase • 5 to 10 dBA increase – more complaints, especially if conflict with sleeping hours • Over 10-dBA increase – substantial number of complaints According to the EPA Region X document, generally no mitigation is required if the increase is less than 5 dBA. Some mitigation should be considered for increases of 5 to 10 dBA. Increases greater than 10 dBA would be considered serious and would warrant close attention.	Kittitas Desert Claim 2004 FEIS at 3-192 : Environmental Protection Agency Guidelines All Verbal and Written comments submitted by Keith Brown and/or Teresa Robbins for the WRE DEIS, are incorporated by reference here by SOSA.	Consider requiring the Applcant to follow the document titled, "Environmental Impact Statement Guidelines," which would limit noise to 10 dBA over typical background levels (25 dBA nightime, 35 dBA daytime, typ. for rural areas) Thus making the condition for noise not to exceed 35 dBA at night, and 45 dBA during the day. The WAC code did not comtemplate noise sources from Wind Turbines, and their proximity to residential use. Furthermore, SOSA incorporates the recommendations of Keith Brown and Teresa Robbins by reference, regarding all the aspects of the noise subject.
36	3	289	3.18	-	• Short-term noise impacts during construction is exempt so long as it occurs during daytime hours, and operation noise is predicted to be less than the nighttime threshold of 50 dBA Leq per Washington State and Skamania County regulations.			

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37	2	14	2.1.5	Table 2-4	Operations and Maintainance Staff: Table describing number of personnel.	This table should include the number of Full-Time Equivalences (FTE's) that these eight to nine employees would provide. This is the best way to clarify for the decision-makers the extent of "jobs" created by this Project. Median salary ranges for each type of position would also be informative.		Include Full-Time Equivalents (FTE's) as part of the description of Operations Personnel.
38	2	19	2.3	-	• **The project must be located in an area with a steady supply of robust wind power,** and on a site on which construction can reasonably occur (no significant geotechnical constraints)	Both terms "steady" and "robust" have not been substantiated with independent data, or data from the Applicant. (i.e. met tower data in velocity, durations, 3-Dimensional directions) The DEIS does not even demonstrate that the "preferred" alternative meets these criteria.		1) Quantify the terms "steady" and "robust." 2) Support the "preferred" alternative with data compared to item 1 above. 3) Evaluate other alternatives against the standards established in item 1 above.
39	2	19	2.3	-	• The project must be located in an area with a steady supply of robust wind power, **and on a site on which construction can reasonably occur (no significant geotechnical constraints)**	The "preferred" alternative has not had a final Geotechnical Assessment done. DEIS at Appendix B. This preliminary assessment does not include subsurface core sampling below ~10 feet. Foundation concrete depth expected to be 30 feet. In this report, URS already anticipates using rock anchors to resist the overturning moment of the Turbine, since soil conditions are not suitable for traditional mat-slab gravity-held foundations.		
40	2	19	2.3	-	• The project must be located in an area with a steady supply of robust wind power, **and on a site on which construction can reasonably occur (no significant geotechnical constraints)**	The micrositing coridor for proposed Turbines A1-7 averages ONLY 170 feet wide, before entering into Landslide Hazard Area (LHA) Class II. The URS report (DEIS at Appendix B) states no Turbines will be sited on LHA Class II (or I, implied) soils. With a Foundation diameter of 60 feet (typ.) there is very limited ability to site these machines. The Applicant's "preferred" alternative does not even qualify for consideration, according to their own standards.		Since no other alternatives have been offered, other than the No Action alternative, one or two other Alternatives must be added to compare the reasonableness of construction from a geotechnical perspective.
41	2	19	2.3	-	• To reduce startup costs, the project must be located on land the Applicant owns and controls, and land that can serve a dual purpose of commercial forestry and power production	Generally speaking, most Land Lease agreements are based more on output, than on fixed rates, and they may or may not include up front costs. These are an insignificantly low percentage of the construction costs (read "startup costs") that this argument can only speak to the marginal economic viability of this project. As for land that can serve a dual purpose of revenue generation over the life of the project, similar to wheat farming, this has NOTHING to do with STARTUP COSTS. These are self serving, self-imposed constraints, designed to artificially restrict consideration of any other alternative.		Disclose financial justification of how these particular startup costs materially effects project viability, or remove that as a "constraint" in evaluating Alternatives.
42	2	19	2.3	-	• To enable the power to reach urban markets and eliminate the cost and time required to construct new transmission lines, the project must be located in proximity to existing high-voltage transmission lines	Proximity to existing high-voltage transmission lines is PURELY a matter of economics, and has nothing to do with power reaching urban markets.		Restate the "constraint" to incorporate the additional costs, due to this factor, into the potential viability of other alternatives. Such that the economic viability of WRE has a certain savings over Alternative B, C, and D, for example.

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43	3	130	3.7.2.2	2	Low Frequency Sound	This is an phenomenon that is still being studied, and as such needs to be treated with caution and concern, relating to the impacts to nearby residents. There is ample material to garner sufficient doubt to the claims made in the DEIS. Time to comment is not sufficient, so SOSA must incorporate by reference the comments by Keith Brown and Teresa Robbins.	Exhibit 2E - Tuning and Sensitivity of the human vestibular system to low-frequency vibration," Todd, Rosengren, Colebatch: Nueroscience Letters 444 (2008) pgs 36-41	Impose a C-Scale (dBC) requirement for noise emmissions from EFSEC permitted projects, in addition to the proposed 35 max total dBA nighttime, and 45 max. total dBA daytime levels mentioned above.
44	3	160	3.9.1.3	3	Simulations were prepared assuming a conservative scenario of 50 turbines. This approach to creating simulations most likely overstates the visual impacts. This is because the Applicant has applied for EFSEC certification for a maximum of 75 MW. **If 2.5 MW turbines were to be used, only 30 turbines could be built, and overall visual impact would be less.** ...	Because the DEIS contemplates the use of 2.5MW turbines to reduce the visual impact of the proposed project, this needs to be one of the Alternatives to consider under Section 1.4 of this EIS.		Add to the Alternatives in Section 1.4, a proposed project configuration of 30 Turbines of 2.5MW capacity.
45	3	164 to 172	3.9.2.3	All	3.9.2.3 Viewpoints (entire section)	The assignment of Scenic Quality and Viewer Sensitivity to the Viewpoints are fundamentally bias towards the Applicant's interests. Even if the author wrote this from a desk in the middle of Yosemite or any world class visual destination, one would be challenged to rate most locations in and around the CRGNSA anything but a 5 or 6, based on Table 3.9-1 DEIS at 3-158. The assignment of Viewer Sensitivity are based on a focus of facts only to justify the lowest ratings.	Exhibit 2H	As opposed to inserting such important analyses in the body text of the DEIS, a truly quantitative analysis needs to be performed by a qualified independent landscape architect.
46	3	164 to 172	3.9.1	All	3.9.1 METHODOLOGY (basis for whole section)	The Visual Analysis is NOT complete or meaningful. As presented with only "Scenic Quality" and "Viewer Sensitivity" as separate factors, there has been no coupling of factors in a scientific or statistical basis for decision-makers to relate the visual impacts to a defined standard, or to a relative reference frame. No accurate conclusions could reasonably be made about Visual Impact of the project, given the format existing in this DEIS.		Professionals in this field would be able to offer guidance on how to identify and quantify the common variables, and to combine them in such a way as to numerically demonstrate a given Viewpoint's potential degradation relative to some tangible reference point. The work done on this subject must by a credential expert. The Visual resource Management System used by the BLM seems more relevant for this EFSEC Application, due to its visual objectives for lands with multiple managment objectives.
47	3	164 to 172	3.9.2.3	All	3.9.2.3 Viewpoints (entire section)	There are a number of important Viewpoints that were omitted, for example - Panorama Point in Hood River County, Oregon.		The majorly significant viewpoint of Panorama Point, OR must be included in this analysis. It is a KVA within the CRGNSA, one of the most visited.

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48	3	172	3.9.2.3	3	Viewpoint 23: Ausplund Road End Scenic Quality. This viewpoint represents the view from local area roadways at specific intersections where local area travelers might converge. These roads are old logging roads that have been upgraded to meet the local residential use. However, they are still used for logging and would be used in the construction portion of this project. This would include upgrading and in some instances widening the roads, which can affect visual quality. This view is from the end of the Ausplund Road, which would be used to access the area for construction and maintenance. Very few viewers beyond those associated with the project would see this viewshed. Without the vehicles in the foreground, the scenic quality rating assigned to this view is moderate. Viewer Sensitivity. When considering the distance of the project from this viewpoint (less then 1 mile), the portion of the project that is visible from the viewpoint, the viewer types (local area workers and residence), and the scenic quality rating, the level of sensitivity was rated as low to moderate.	1) This Viewpoint (23) is near the end of Ausplund Road, looking to the NNW direction. This intersection represents a viewpoint central to 4 separate legal parcels, 3 of which have homes on them with active residential use. This site is roughly 1/2 mile from the proposed project. Each of these agriculturally-zoned parcels have about one acre each established for residential use. Submitted for your review is a picture taken from the home at the "end" of Ausplund Road, which is a typical view from most all the homes on Ausplund Road, and many, many homes in Underwood as a whole. This is not a Scenic Quality of 3, but rather a very substantial 6. (ref AusRdEndSouthView.pdf)	SOSA Comment letter of Aug. 27, 2010 - titled Visual Analysis Section 3.9	This viewpoint, as with ALL the others in this DEIS, cannot be judged for Scenic Quality **SOLEY** on its view of the proposed project. The starkly contradictory photo introduced here should establish that most of the Viewpoint analyses are faulty and bias, and must be remanded for reevaluation, or utilize a more appropriate Methodology (3.9.1) and objective consultant.
49	3	10	3.1.2.1		The changes to topography would be minor to moderate depending on location	"Changes in topography" denotes significant earth moving. Need detailed maps and and grading/excavating plans to able to assess the extent of the topographical changes.		The extent of topographical changes should be idientified in the DEIS test, as well as the photmontages.
50	3	11	3.1.2.1		Landslide evaluation….without danger….to surrounding environment. No obvious recent mass wasting features were observed in the arial photos or during sight reconnaissance. Class III LHAs were delinieated adjacent to proposed wind turbines along the southern Tower Line A and along Tower Line C.	Fails to show detailed topography, detailed topographical changes, and how it affects landslide danger. Attempts to depict turbines outside of slide area, but common knowledge dictates the pad and activities will be in the unstable slopes.		
51	3	17	3.2.1		Like hydropower production of electricity from wind produces no direct emissions of greenhouse gases or other pollutants. The generation of wind also displaces generation from individual follil fuel fired power plants or units thereby reducing fuel consumption and the resulting air emissions that would have otherwise occurred.	Patently false, and rebutt by adding papers that actually state that greenhouse gas emmissions will increase that we are displacing clean hydropower because most dams used water from run-of-the-river and storage as a result is limited, both in capacity and for fish. Include articles that demonstrate as more wind is integrated into the system, the more difficult it is for BPA to balance without harming fish. Include paper that shows tha that BPA desire that wind energy operators aquires its own balancing reserves and that means NG generation and increasing emissions.		
52	3	20	3.2.2		…..there would be no emissions from the operation of the turbines	True, but backup would release emissions therefore the operation of the farm would result to increasenet emissions in the region.		Include impacts due to firm power backup, and idling gas plants during wind power operations.
53					Entire document	This DEIS divides and splits information in a way that makes it difficult for the reviewers to assess any aspect of concern without reading the entire document word for word and placing wording into a spreadsheet for organization as is done here.	Too many to put in here and not time effective	Redo the entire DEIS and organize into a coherent and comprehensible document.

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54	3	3	3.1.1.2		Above the basalts are a variety of younger volcanic rocks and sedimentary materials that range from…..	These are materials that contribute to instability on slopes. Need clear topo maps that show where turbines are to be placed so the interaction between loose layers and steep slope can be identified.		
55	3	11	3.1.2.1		entire section	No information is given as to how cite decommissioning will occur so impacts cannot be assessed.		
56	3	12	3.1.3		entire section	no mitigation measures can be identified because of the above deficiecy		
57	3	18	3.2.1		The Skamania Fish Hatchery……..	Average temps taken from fish hatchery that cannot be googled for address? Precipitation is higher and snowfall is significantly lower as elevation decreases and one proceeds west. Underwood recievess approx 40 inches of rainfall a year and snowfall is measured in feet. WRE location can expect 4-5 feet of snow on the ground during winter and over 10 feet annual snowfall.		
58	3	34	3.4.1.1		The project site contains a network of roads ranging in width from approximately 8 to 20 feet.	The 20 ft rd was built specifically for hauling WRE equipment. Roads to support logging activities are 8-10 ft.		
59	3	35	3.4.1.1		As a result, the project area includes no native habitat and is permanently committed to use by commercial forestry operations and utility infrastructure.	The area contains "no unaffected habitat" but under a normal logging regime that does not include an expedited process for turbines, habitat that can support many of the native species would exist.		
60	3	35	3.4.1.2		Five vegetation communities……	Two of the first five vegetation communities do not naturally occur in the area and are only present following logging and only for a few years. This is not an accurate representation.		
61	3	45-46	3.4.1.5		One bald eagle was recorded on the project site in 2009 during surveys for northern goshawk. In addition, three bald eagles were observed during the winter of 2008-2009 during baseline avian surveys. Two were observed flying within the rotor-swept area, and one below.	Bald eagles use the Columbia River, Little White Salmon and White Salmon Rivers as overwintering and nesting habitat. As the bald eagle population recovers further, more eagles will reside in the area. WRE spans a saddle between Underwood Mtn and Nestor Peak between the Little White and the White Salmon River. It is not unexpected that bald eagles would hunt the WRE area and use it as a shortcut betweent the two river basisns. WRE, if permitted, may likely be the first project to kill bald eagles in the Pacific Northwest.		There must be a discussion of the long-term risks and impacts to Bald Eagles. Nesting and over-wintering are not addressed.
62	3	46	3.4.1.5		In Washington State, goshawks occur year-round and in some areas only during the non-breeding seasons. The project site is located in an area where either may occur, and the eastern slope of the Cascades is considered the most common place to find this "uncommon" species (Bird Web 2009).	Should state that "The Northern Goshawk occur year round in breeding areas and and in some areas only during the non breeding season." "The project site lies in an area that either may occur."		
63	3	46	3.4.1.5		Northern goshawks were recorded during avian surveys during the fall of 2004 and the summer of 2006. A total of five individuals were sighted; two during the fall and three during the summer. They were observed flying both within and above the rotor-swept height during surveys.	Demonstrates that breeding populations exist and WRE if permitted may be the first project to kill this "uncommon" species and breeding population impacted.		

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64	3	47	3.4.1.5	4	Northern goshawk surveys were conducted during the spring and summer seasons in 2004, 2008, and 2009…… (No northern goshawk responses were recorded in 2004, 2008, 2008.)	No northern goshawk responses were recorded, but yet they were noted during avian surveys. A basic rule of all survey work is that presence affirms presence; absence does not affirm the subject not present, just that it was not detected by some established measure. In the case of the northern goshawk survey, none were detected but yet, goshawks were affirmed as being present during the avian survey. The only message to take home is that the goshawk survey was not successful at detecing northern goshawks. The surveyers need to re-evaluate survey methods and determine why they were not successful at stimulating northern goshawks to respond in a manner that could be recorded. This is a serious issue when one considers that the other other bird-of-prey surveys are dependent on a response as well. It throws into doubt all the bird-of-prey response-dependent surveys.		
65	3	46	3.4.1.5		Two golden eagles were recorded during the fall of 2004. One was observed flying at a height within the rotor-swept area, and one was observed flying above the rotor-swept area.	Golden eagles are documented to fly through the WRE project area and are, like the other raptors, at high risk of being killed.		
66	3	49	3.4.1.5		The Applicant conducted surveys and analysis to confirm the absence of northern spotted owls.	This statement demonstrates a bias by looking for a specific outcome. It is exremely difficult to definatively "confirm" absence, but reasonable to provide some probability of use at any given time. Spotted owls historically have, with high probability, been present in the area of the project. Vast clearcutting has reduced the modern small chance to a very small chance that spotted owls would be present in the WRE area at any given point in time for the near future. Surveys were conducted for northern goshawks and none were "detected" in a common place to find an uncommon species either.		
67	3	56	3.4.1.5		Forest practices within a SOSEA are therefore allowed to proceed so long as they do not affect the 40 percent suitable habitat threshold.	Forest practices will not continue in the area as outlined in…… because the forest may never be allowed to grow trees of a marketable size. This represents a forest conversion in a SOSEA. This permanently and effectively reduces the SOSEA size and creates more fringe area relative to the SOSEA area.		Don’t allow Turbines anywhere near, established SOSEA's, regardless of whether recent Spotted Owl activity has not been "observed."
68	3	45	3.4.1.5			Fails to state that the Little White Salmon is approximately 1 mile west of the project area. Ignores the potential flight corridor between the Little White Salmon River and the White Salmon rivers over the saddle formed by Nestor Peak and Underwood Mtn where WRE is located.		

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69	3	56	3.4.1.5		There were 21 birds observed during summer 2006 avian surveys, and six recorded during the spring of 2009. All 21 observed in 2006 were within the rotor-swept area; it is not reported in 2009 how many were in the rotor swept area. None were recorded during the fall of 2004 or the winter of 2008-2009.	The WRE area is highly used by this species. Reporting absence in the fall and winter is misleading as this bird leaves begins its migration to S. America in August. Because 100% of the birds recorded in 2006 were in the rotor swept area, it is reasonable to assume that 100% of those recorded in spring 2009 would be in the rotor-swept area. Even though fewer numbers were observed in the spring, this is a particularly bad time to lose any member of the species. For each female lost, future recruitment is reduced. If three of the six are females and each female produces 3-4 offspring, then a lost of three females could represent a recruitment of 9-12 additional birds. The bird counts represent a minimum. There is no extrapolation over area. No method for comparing counts to scientific studies of local population levels. There is no mention of how loss of forest habitat from extensive clearcuts affects reproduction. For a species on the decline, it is important to consider all actions of direct and indirect losses to the population. This has not been done for a migratory species.		
70	3	57	3.4.1.5		In Washington, pileated woodpeckers occur year round but are uncommon in the vicinity of the project site. … During avian surveys in the project area, six pileated woodpeckers were recorded in the fall, two during the winter, seven during the the spring, and none in the summer.	Doing the math, six plus two, plus seven equals 15 pileated woodpeckers observered. According to the Applicants own study numbers, pileated woodpeckers are anything but uncommon in the vicinity of the project site. Fifteen pileated woodpecker sightings is especially significant. These birds are fiercely territorial and the observation of such high numbers in periods seperated by many years in some instances, is telling of the perserverance and number of territories in the vicinity of the project. Lack of sighting in the summer months, does not indicate absence, only lack of detection. The DEIS must be changed to reflect the significant use of the project vicinity by pileated woodpeckers. It is important to note here that pileated woodpeckers prefer habitats with large trees. Contrary to the Applicants claim, extensive logging in the area has not completely removed use by species that prefer habitats with older tree areas. Pileated woodpeckers demonstrate the resilience of some species to changing habitats. Therefore it should not be assumed that just because extensive logging has occured in the project are that species will leave and therefore not be at risk. Pileated woodpeckers will fly at height that puts them into the rotor swept		
71	3	57	3.4.1.5		During fall 2004 avian surveys, 15 Vaux's swifts were recorded in three groups, 87 percnt of which occurred within the rotor-swept area. Four were recoreded in two groups during the summer of 2006, all of which occurered within the rotor-swept area.	Doing the math, a total of 17 out of 19 Vaux's swifts were observed in the rotor-swept area for a number of almost 90% in the rotor swept area. This percentage applied to the 11 birds observed in the 2009 period would place a total of 10 swifts in the rotor-swept area. In total, 28 of the 31 of the observed swifts (in that short period alone) were at risk of being killed. It is even more reasonable to assume that all the swifts have the potential to use the rotor-swept area and all members of the population are at risk. Again, this is a conservative number due to the very limited nature of the survey. Because original data was not supplied, the temporal seperation in years, and lack of overlap between fixed points it is reasonable to assume that most if not all swifts were not counted more than once.		

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72	3	59	3.4.1.5		Bat surveys conducted during ..... did not have the ability to detect individual species of bats. Based on the lack of detailed information of this species life history and habitat requirements and nature of the bat surveys conducted it is difficult to conclude with certainty with the likelihood of Keen's bats occurring on the project site. However, Due to the lack of old growth or mature forest types within the project area and the predominant commercial forestry use of the property, the likelihood of occurrence on the site is considered to be low.	Anabat II technology exists to identify, by call, individual bat species. This technology has existed for over 10 years. West has authored a paper where the Anabat technology was used to identify to species the majority of calls. Papers, abstacts, and exerpts are attached. The tapes need to be further analysed by a highly qualifed INDEPENDENT expert to identify bat calls with special emphasis to identify rare species. If WEST failed to set up the Anabat II correctly so that calls can be identified, then additional bat data collection needs to occur. Additionally, cumulative impacts should assess the possible future infection of bats by white nose syndrome. Increased mortality of ANY type, may directly affect these species future viability.		
73	3	60	3.4.1.5		There are no known roosting structures or maternity colonies occurring in the vicinity of the project area.	See comments on Keen's Myotis. Townsend's Big Eared Bat, a species of concern and a canidate for listing, is present in the region. One of the largest colonies at 400 bats is located in lava cave nearer to Trout Lake to the north. Colonies are small compared to many other bat species and not many colonies are known to exist. The southern end of the old lava flow (can be seen from Google Earth) that may contain additional colonies is approximately three miles from the project .		
74	3	62	3.4.1.6		Table 3.4-5	One year round bird, the northern pygmy owl was not observed during ANY study, yet is common in the area. This speaks again to to the basic rule, absence does not absence does not affirm the subject not present. Northern Pygmy owl and any other species that are likely to exist should be added to the list and represented as is the Northern saw-whet owl.		
75	3	63-64	3.4.1.6		This annual rate is low relative to raptor use at 36 other wind-energy facilities that implemented similar protocols and had three or four season surveys.	It is very important to note that a number of raptor species use the WRE area and rotor-swept area are sensitive, canidates for listing, or formerly listed recovering species. This number needs to be compared relative to other wind energy facilities as well. Appendix C4 page 9 states: American kestrels...,red tailed hawks...., and golden eagles...were killed more often than predicted based on abundance. ... It is likely that many factors, in addition to abundance, are important in predicting raptor mortality.		
76	3	65	3.4.1.6	2	The WDFW Priority Habitats and Species database was searched for known occurrences of raptor nests. The only recorded nest was for an osprey, more than one mile east of the project site.	This database is not complete nor comprehensive and cannot be used as an authority. Just as the goshawk survey was not able to generate a response, any attempts, if one had been attempted, would likely not have found nests. WDFW is not allowed to enter SDS property unless permission is obtained and escorted by an SDS representative. It is highly unlikely any nests would be known.		
77	3	64	3.4.1.6		Fall migration surveys (2004)	The DEIS fails to assess bird migration through the project area. This DEIS ONLY makes daytime observational counts of birds during four seasonal time periods, fall, winter, spring, and summer. Nothing in this section or study assesses fall migration, the regular seasonal journey of species from one one location to another. This is a serious defeciency because migrating birds are at significant risk when flying through the rotor-swept area. Birds migrate at varying heights by species and weather conditions. Conditions with poor visability such as clouds, mist, fog can lower the migration paths of higher flying species so they too are exposed to the rotor swept area. These weather conditions are common in the spring, winter, and fall along the ridges of the Cascade Mountians. Include studies that describe methods of detecting bird movement at night for migration studies.		

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78	3	64	3.4.1.6		Three species of reaptors were observed, including red-tailed hawk, northern goshawk, and sharp-shinned hawk.	Northern Goshawk observed in spite of surveys failing to detect any.		
79	C4	7	1		Ten species were always seen flying withing the ZOR (zone of risk); however, these were based on fewer than five observations.	These species need to be identified clearly in the text and a table. These species are the ones most likely to be wiped out of the sky, and since these species are likely in low numbers, population impacts could accrue.		A table needs to be created in the DEIS, not in the appendices only, but in the main text under operation impacts to birds, with species in one column, percent of time birds were seen in the rotor-swept area (zone of risk) the number of birds and the total number of 'groups". Sort by highest percent in rotor-swept area first. Supplemental DEIS (complete redo is better) with this information and others should be issued for comment and review.
80					All general bird surveys.	Although over 200 data sheets exist, more information should be given about the locations these birds were observed.		
81	3	64	3.4.1.6		For all bird species combined, use of the project site by avian species was slightly higher during the summer breeding season than during the fall migration period.	There was no fall migration assessment for birds or any other wildlife in this DEIS. All comments to bird migration need to be removed from the document		
82	3	69	3.4.1.6	1	Several large mammals occur within the project site.	No detailed review or study exists on the potential impact to mammal habitats or movement patterns.		Redo and expand this section and provide for public review through a completely redone DEIS or a supplemental DEIS

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83	3	72	3.4.1.7	1	From 150 feet to 500 feet from the base of the turbine towers, tree height would be limited to 50 feet above the turbine base within an area formed by a 90 degree arc centered on the ordinary downwind direction (figure 2-4 in Chapter 2).	DEIS fails to state exactly what locations and affected acres will be within an area formed by a 90 degree arc….. DEIS fails to reveal how many turbines are proposed in a topographical area that does not meet the 90 degree arc requirement. The DEIS fails to provide an analysis of acres will affected and to what degree in topographical areas that do not meet the area formed by a 90 degree arc requirement. This significant deficiency does not allow agencies or the public to assess what the impacts to forestry and forest habitat from siting wind turbines in forested areas will be. During scoping, a comment requesting this information was submitted.	Topographical maps show little, if any, areas meet the condition of "an area formed by a 90 degree arc centered on the ordinary downwind direction."	Rewrite section of DEIS with a complete analysis, in light of the expanded information. A map of the project area and the all area around it that could be impacted to create and maintain airflow needs to be included. Include a table of the affected habitat types and display the expected length of time for the forest to be fully renewed for viable timber harvest. If harvest will not be allowed to renewed to an age of 50-80 years for any reason, then show age it will atain. Any sections on forest, animals, and habitats that would be affected in light of this information needs to be updated and resubmitted for public comment through a completely updated DEIS or a supplemental DEIS.
84	3	74	3.4.1.7	1	No wetlands or wetland buffers are located within the project footprint.	Misleading statement. A wetland is included in the project footprint, as it is within the project area borders. This wetland has been and will continue to be impacted if the project is permitted. SDS obtained a permit to harvest timber in the WMZ from DNR. This disturbing activity may have, like most logging operations, damaged the WMZ that could remove silt in runoff from construction activities.	DNR Maps and FPA's	Update and correct this section with the most recent forestry actions that are planned or have occurred. Correct and place this information in DEIS and resubmit for comments.
85	3	77	3.4.1.7	1	No wetlands or wetland buffers are located within the project operation area.	Misleading statement. A wetland is included in the project operation area, as it is within the project area borders and a possible wind impediment. This wetland has been and will continue to be impacted if the project is permitted. SDS obtained a permit to harvest trees in the RMZ of the wetland (or is it called a WMZ?) from DNR (FPA #2704045 and #2704443). Because this wetland is along a road accessing project area from the east, it raises the question of whether the logging occured to improve the road for WRE access or for logging operations or in the words of a long time local "to remove an environmental problem" (sensitive species).	DNR Maps and FPA's	Update and correct this section with the most recent forestry actions that are planned or have occurred. Correct and place this information in DEIS and resubmit to public for comments.
86	3	74	3.4.1.7	2	Roadway improvements to the County or private logging roads are not expected to affect wetlands. This information was confirmed through field investigations performed in May and July 2009.	This Report is not cited as existing in Appendix	DEIS	Include this report in DEIS and resubmit to public for comments.

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87	3	74	3.4.1.7	7	Construction of the proposed project would result in the permanent loss of 21.86 acres of managed coniferous or mixed deciduous-coniferous forest.	Here it state that the loss of forest will be permanent, yet prior arguments stated "for the life of the project estimated to be 30 years."	DEIS	Show actual permanent loss of forest from construction and operation of the project. Rewrite this section of DEIS with a complete analysis, in light of the expanded information. Include a map of the entire forest area that could be impacted to improve airflow. Include a table of the affected habitat types and display the expected length of time for the forest to be fully renewed for viable timber harvest. If harvest will not be allowed to renewed to an age of 50-80 years for any reason, then show age it will be allowed to atain and the differetial in board feet at harvest. Any sections on forest, animals, and habitats that would be affected in light of this information needs to be updated and resubmitted for public comment through a completely updated DEIS or a supplemental DEIS.
88	3	77	3.4.1.7	1	Operation of the project would result in no further impacts to habitats on the project site.	Operation of the project would result in the LONG TERM and perhaps permanent removal of functional forest in the airflow area. Trees in the airflow area may never be allowed to regrow to a size that could prove needed habitat.	DEIS	Remore this statement and others like it.
89	3	76	3.4.1.7	4	In order to determine which species (including special status species).....are most at risk for turbine fatalities a relative collision risk....	This analysis is not appropriate for determining risk because it is dependent on observational counts. Uncommon species would never have a high risk.	Basic statistical knowledge.	Use percent of species observed in rotor swept area. Put in suplemental DEIS or rewritten DEIS.
90	3	50	3.4.1.5	2	Surveys were conducted in 2003, 2004, 2008, and 2009	NSO surveys were conducted in 2007 as well. During one of the visits in particular, slash burning on Chemawa Hill above this area could have affected obtaining a result. Survey was known to occur in the fall, which according to Bill Weiler, WDFW Biologist, was not the correct time of the year to be conducting owl surveys. Although the design was flawed, those data sheets need to be made available to the public for review.		Make available to public in supplemental DEIS or rewritten DEIS.

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91	3	77	3.4.1.7	7	Bald eagles, although fairly common in Washington State, are likely uncomon visitors to the project site. The potential for ongoing occurrence of bald eagle on the project site is very low. The potential for bald eagle fatalities as a result of turbine strikke is also considered to be extremely low.	DEIS has failed to analyse increasing Bald Eagle presence in the Columbia River Gorge mainstem and tributaries. The central gorge with an overwintering population from other parts of the U.S./Canada and a growing resident nesting population, has become much more common in the area and the numbers in the area is expected to increase as the overall recovering bald eagle population increases. DEIS has failed to address the potential use of the area by bald eagles to shortcut across the saddlleback through WRE project area between the White Salmon River and the Little White Salmon River. The potential for use of the area and a turbine strike is increasing with increasing populations, particularly in light of the use of airspace in the rotor-swept area.		Include USFWS data on producing and overwintering populations. Include the likelihood of a fatality should an eagle pass through two strings of turbines as is present on the site. (Survival as calculated in fish, only in this case estimated from available science) If not calculated, use the number generated from percent of observations in rotor swept area relative to the population in the White Salmon to Little White Salmon Rivers and Columbia River between those two rivers. Extrapolate for an increasing population.
92	3	77	3.4.1.7	8	Two golden eagles were recorded on the project site ....considered to be at a relatively low risk for collision with turbines at this site.	Every golden eagle that enters the WRE area, like bald eagles, are at risk of being killed by the turbine blades. Golden eagles are quite possibly using the site more than rarely, perhaps a better word to use is infrequently. Because of the timing and nature of this study, little can be said about the frequency of visits, other than, golden eagles were observed during the limited bird surveys.		
93	3	78	3.4.1.7	3	This includes the occurrence of five individuals, four of which were flying within the rotor swept area. Similar to the golden eagle, this species may be at risk of increased foraging activity in open areas around turbines because they hunt for prey that occurs on the ground in cleared areas. However given their rare occurence on the project site, the potential for turbine related fatalities for this species is extremely low.	First, northern goshawks are not "rare" in the WRE area. Northern Goshawks have been observed flying southeast from the WRE project area into the farmland south of the project area, presumably to hunt. During logging under DNR FPA# 2704293 in June-July 2010 on a unit (named Fern) just below Chemawa Hill (southern A-array), a northern goshawk was observed flying and repeatedly crying rfor two days just south of where the logging activities were taking place. Quite possibly, a nesting tree may have been removed from the riparian zone with reportedly 100+ year old trees (the riparian zone repeatedly not mentioned by the Applicant) being logged. A request was lodged by an adjacent landowner with the Southeast Regional Office in Ellensberg to have a DNR employee enter the area and check for eggs or chicks that might have survived. The request was refused by DNR stating that they have no rules on the books and are not responsible for regulating any wildlife.		Change text to acknowlege prevalence of this uncommon bird in the WRE area. Change text to state that the potential for turbine related fatalities is high based on the presence of northern goshawk in the area AND the high percent of observed northern goshawks flying in the rotor swept area. Reissue the DEIS with corrections or a supplemental DEIS for public comment.

Specific DEIS Comments from Save Our Scenic Area (SOSA)

August 27, 2010 [redacted] www.saveourscenicarea.org

Comment #	Section Number	Page Number	Heading Number	Paragraph Number	DEIS Text	Declared Deficiency	References	Remedy
94		78	3.4.1.7	3	General	Relative index using all bird species is not applicable.		If a relative index is to be used it should be divided into general class of birds, ie: raptors. This will give the public a better understanding of which raptor is at greatest risk of turbine caused fatality based on total number of raptors, number of each species observed, and flying in the rotor-swept area. Although a qualifer must be stated that ALL raptors are at significant risk for turbine caused fatality because of their size and hunting behavior.
95	3	79	3.4.1.7	1	Based on this analysis and surveys on the project site, the estimated raptor/vulture fatality rate is zero per MW/year, which is an extremely low estimate compared to many wind projects.	The so called analysis **does not in any way reflect the risk of raptors/vultures to turbine caused fatality**. This distorts and falsely inplies that a relative index predicts mortality. The relative risk index only provides an indication of how many of a species were in the rotor-swept area relative to other species. In fact, larger birds, because of their larger wing spans and body size, are more likely to be struck than a small bird occupying only a small space in the rotor swept area. Birds spending more time in the rotor-swept area are more likely to be killed. Environmental conditions when birds are in the rotor-swept area can affect fatality, and so forth. The lack of assumptions to account for shortcomings is a fatal flaw in any "study" and certainly is for this one.		This Study's list of assumptions must be reevaluated and independently confirmed. Remove this and other incorrect statements of non-fact.
96					nonexistent	Science based studies require a statement of all assumptions made to design a study and collect, analyze, and interpret data. This is completely nonexistent in the DEIS and Appendices.		
97	3	79	3.4.1.7	1	Further, data collected from the project site indicate that the area is not within a major migratory pathway, at least during fall migration.	No migration data on any species was collected, only observational counts of animals on differnent days/seasons. Because migration requires some movement, and movement was not demonstrated in any "study" whatsoever, migration conclusions cannot be made.		Remove references to "migration" from existing DEIS language until such time actual migration studies are completed and documented.
98	3	79	3.4.1.7	2	Pileated woodpeckers were recorded on the site, but not flying.	Pileated woodpeckers do fly at rotor-swept height. They do not take the bus.		A more accurate conclusion is suggested here: "Because pileated woodpeckers were not observed flying, the relative index was zero. Pileated woodpeckers may fly at rotor-swept height through the WRE project area and may be killed as a result."

Specific DEIS Comments from Save Our Scenic Area (SOSA)

August 27, 2010 [redacted] www.saveourscenicarea.org

Comment #	Section Number	Page Number	Heading Number	Paragraph Number	DEIS Text	Declared Deficiency	References	Remedy
99	3	79	3.4.1.7	1	Vaux's swifts……were commonly observed flying at rotor-swept heights ….	More than SOME deaths should be expected based on the percentages of birds in the rotor swept area.		Change to "Vaux's swifts….were commonly observed flying at rotor-swept heights, and SIGNIFICANT turbine related mortality may occur.
100	3	79	3.4.1.7	1	Olive-sided flycatchers……were commonly observed flying at rotor-swept heights ….	More than SOME deaths should be expected based on the percentages of birds in the rotor swept area.		Change to "Olive-sided flycatchers….were commonly observed flying at rotor-swept heights, and SIGNIFICANT turbine related mortality may occur."
101	3	79	3.4.1.7	1	Western bluebird……were commonly observed flying at rotor-swept heights ….	More than SOME deaths should be expected based on the percentages of birds in the rotor swept area.		Change wording to "Western bluebirds….were commonly observed flying at rotor-swept heights, and SIGNIFICANT turbine related mortality may occur."
102					Waterfowl, waterbirds, and shorebirds were not observed using lands within the project site diring this study, and mortality involving this group is expected to be rare.	These species area migratory birds and would not be be expected to be seen USING LAND within the project site as there is no large body of water, but the AIRSPACE would be used during migration. Migratory birds, including water using species have been killed during migration by wind turbines at many different projects throughout the U.S. and world. Migratory birds of ALL species are at risk. Migration has NOT been assessed in any study within this DEIS.		Remove all reference to "migration" from any study and DEIS text. Require a full study on spring and fall migration be conducted according to best experimental design and current research protocols. Included in any assessment of migration by mammal (including bats) and avian species, needs to cover 24 hour time periods when environmental and seasonal conditions are favorable for every species (particularly status species) and for 3 years to account for annual variation.
103	3	79	3.4.1.7	1	Turkey vultures are known to have very low susceptibiltiy to turbine collisions (Orloff and Flannery 1992).	Old Citation based on older, smaller turbines. Provide updated current information to support any assertion.		Base conclusions on more recent information to reflect the latest generation of industrial wind turbines. Review Canadian and European white and grey papers on turkey vulture and cousin fatalities at wind turbine facilities.
104	3	79	3.4.1.7		General	The DEIS is deficent because the studies have failed identify the underlying asumptions used in design, data collection, and analysis that could affect extent and validity of conclusions. The assumptions mush be qualified by the authors as to the appropiatness of the study. Because of this lack of assumptions, independent reviewers are unable to confirm the intregrity of the methodology and conclusions.		The reports and the conclusions must be reissued with this information in a SEIS or a replacement DEIS.

Specific DEIS Comments from Save Our Scenic Area (SOSA)

August 27, 2010 [redacted] www.saveourscenicarea.org

Comment #	Section Number	Page Number	Heading Number	Paragraph Number	DEIS Text	Declared Deficiency	References	Remedy
105	3	79	3.4.1.7	3	These collisions would likely be rare and it is unlikely that the Project would have any negative impacts on population levels on and near the project site.	Acutally, the opposite is true. Collisions are very likely to occur. The shear number of turbines and their configuration along a ridge poses a very high risk to special status and uncommon species, as well as migrating birds and bats of all kinds.		Compare to other forested ridgetop wind turbine projects in Eastern USA, with the statement that because no turbines have been place in conifer forests of the NW, it cannot accurately reflect numbers only provide general basis of comparison. It MUST be stated that placement of wind turbines along ridges is likely to rusult in extremely high mortality of resident and migratory birds and bats as has occured in the Eastern US when placed along forested ridges.
106	3	79	3.4.1.7	4	…in Washington and Oregon indicate that less correlation between pre-construction surveys and turbine-related mortality is observed in non-raptor species. The lack of correlation may be because most fatalities are among nocturnal migrants that are not accounted for during surveys.	This statement admits there is a lack of a migration study. Most fatalities are among nocturnal migrants, and most species migrate at night. At no point, during day or night, was any study of bird or bat migration through the project area.		Require a three year study on bird and bat migration by qualified researchers using scientifically accepted methods and design protocols. Provide results for review by public and governmental entities.
107	3	9	3.1.2.1		The primary impacts during construction would be potential for erosion, landslides, soil compaction and changes to topography	Where these impacts will occur needs to be disclosed fully, particularly where changes to topography will occur.		Provide a supplemental DEIS that fully discloses where the topographical changes will occur and provide before and after contour maps for all locations.

Comment #	**General Comment from SOSA for the Whistling Ridge Energy DEIS**	**Remedy**
GC-1	Need Met Tower data at proposed location on the Western (prevailing windward) slope. This data must include 3-dimensional wind direction, as well as wind speeds. At least one should be located South of the South BPA line, along the A1-7 string. This area topographically should result in the worst case scenario for turbulence and off-axis wind direction. Turbine efficiency is based on laminar flow in the direction of the Turbine Axis. Turbines placed on a steep slope will suffer significantly reduced performance, which must be quantified in the EIS to ensure economic viability for the Applicant.	Applicant should demonstrate to EFSEC Council that the "wind power" resources at this proposed site meet or exceed that of existing or permitted WA Wind Turbine Facilities. "Wind Power" is defined as the agregatized product of wind speed with time. The purpose would be to provide some basis to justify and offset the increased environmental impacts of this project, relative to those existing WA Wind Turbine Facilities.
GC-2	BPA yard size of 4+ acres invites and encourages future growth, which must be evaluated now.	BPA must, or the DEIS must, identify the minimum size of land needed to house a 75 Megawatt Substation, and only permit, purchase, and develop such a BPA Facility, if the proposed WRE project is approved. Any larger size of land or power capacity would trigger additional review requirements for WRE Application in the BPA NEPA process.
GC-3	It appears that BPA may have initiated agreements with the landowner for specific parcels of land, which would be premature prior to the completion of an FEIS, perhaps even a ROD.	BPA must not enter into contractural agreements or commitments until the lawfully allowable time.
GC-4	Certain claims by the Applicant can neither be substantiated with certainty or refuted with certainty. In these cases, the Council should neither consider a claim to be a benefit or a detriment to the proposed Project. For example, Global warming, reduction in CO2 emmissions, as supported by several scientific papers concluding that the "jury is still out" on some of these issues.	The EFSEC Council should consider these types of claims as neither a significant benefit or a significant detriment to the proposed Project.
GC-5	The State of Oregon has on their books very good scenic protections, not only for the National Scenic Area, but a huge number of State public lands which are deemed appropriate to save from visual intrusion of Wind Turbines. Washington State should prepare and release an analogous document. EFSEC should consider the spirit of Oregon's protections, and apply similar standards when considering the overall benefits to society and the public welfare.	EFSEC should consider the spirit of Oregon's scenic protections relating to Energy Facilty Siting, and apply similar standards when considering the overall benefits to society and the public welfare. Longer term, EFSEC is urged to pass some guidelines similar in spirit to the Oregon statues, either within the Department, or at the State legislative level.
GC-6	The layout of information within the DEIS makes it difficult to understand and assess the true nature of the Project.	No obvious remedy to suggest.
GC-7	Incorporate others' testimony by reference	SOSA hereby incorporates by reference, the comments of: Keith Brown and Teresa Robbins, Skamania County Residents (SCR) Mike and Joyce Eastwick, SCR Mary Repar, SCR Friends of the Columbia Gorge Dawn Stover, Klickitat County Resident Sally Newell, SCR Paul Smith, SCR

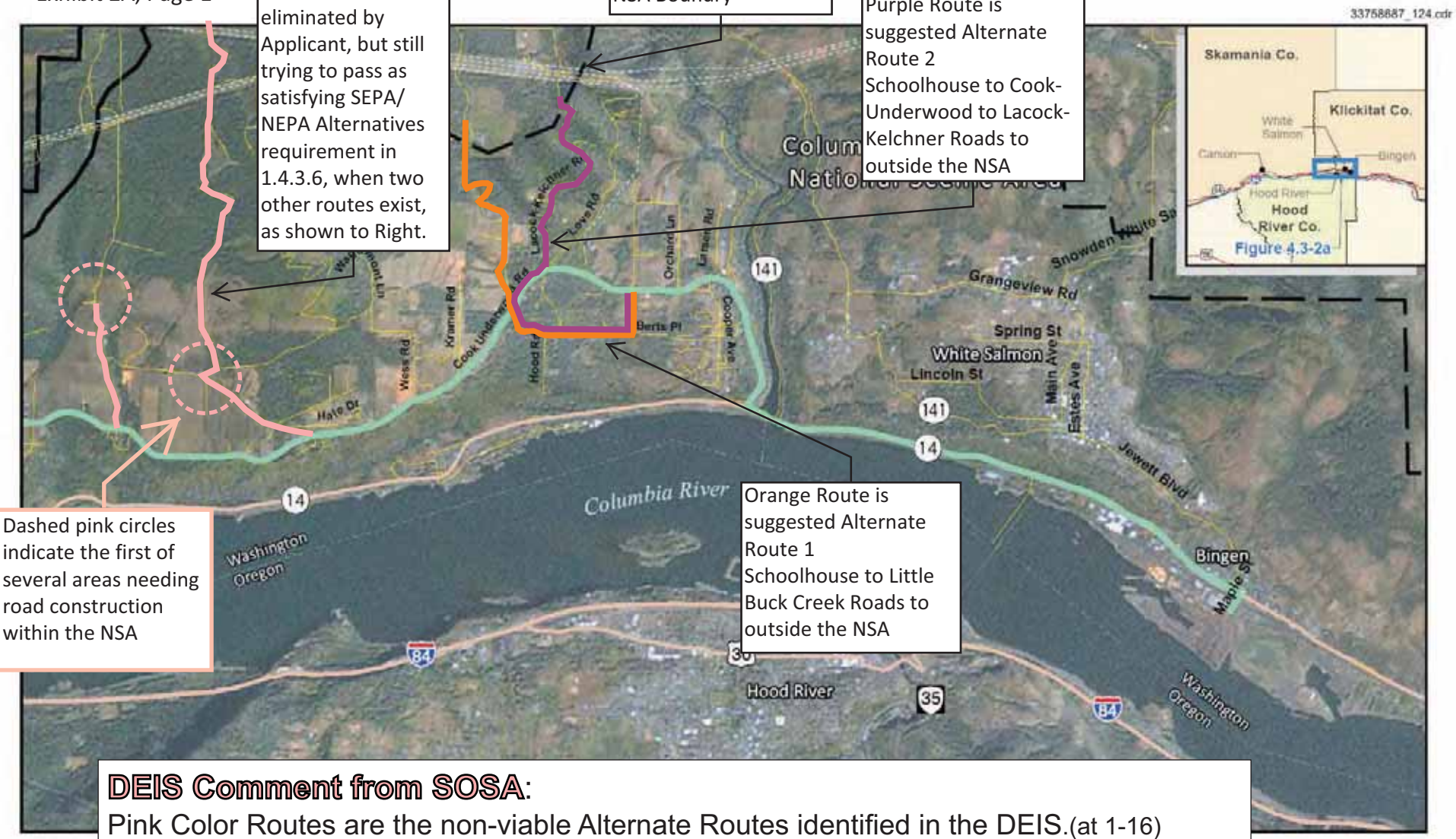
GC-8	Applicant must provide met data and "wind power" analysis (confidentially if needed) to EFSEC Council to justify why this site is sooooo much better that others, that it could justify or warrant consideration in light of all the issues against. Wind Power is defined as the integral of wind "energy" with time. This is commonly approximated as a function of average wind speed spanned out over a long time period. and timeOne must note that the calculated wind speeds(or power) just north of the north BPA line are a maximum for the project site, and the average for the site, as a whole, would be considerably less.	Financial justification for the Project needs to be disclosed and verified.
GC-9	It appears that many general and specific issues raised in the Scoping Report are not addressed, or not adequated addressed. To ensure the integrity of the Scoping Process, SOSA recommends the DEIS or "FDEIS" include a "Response Matrix" - which would indicate the location(s) within the DEIS where the response, rebuttal, or otherwise answer to EACH scoping comment can be found.	Close the loop with the public comments by indicating responses in a "Response Matrix" as described to the left.
GC-10	Issues raised in the Scoping Process, under the Category of "Documents" (Issue Code "DX"), are not broken down in any detail. Lack of categorization of the individual documents, and subjects within, could have led to an important issue not being addressed. As part of the "Results Matrix" comment above, any matter raised in the "DX" issue code should be re-categorized separably into the other Categories, and likewise noted where these issues are addressed in the DEIS. Furthermore, a supplementary DEIS or a new DEIS should be issued and public comment provided.	see above and left
GC-11	Speculation here, but such efforts could be explained by the future "relative" ease of proposing a Natural Gas Energy Plant on ajoining lands, given a number of factors, the least of which is the NG pipeline running thru the currently proposed Wind project.	If any knowledge of plans for additional development at or near the proposed site of WRE, the impacts from such must be addressed at this time.

Exhibit 2A, Page 1

Pink Routes eliminated by Applicant, but still trying to pass as satisfying SEPA/ NEPA Alternatives requirement in 1.4.3.6, when two other routes exist, as shown to Right.

NSA Boundry

Purple Route is suggested Alternate Route 2
Schoolhouse to Cook-Underwood to Lacock-Kelchner Roads to outside the NSA



Dashed pink circles indicate the first of several areas needing road construction within the NSA

Orange Route is suggested Alternate Route 1
Schoolhouse to Little Buck Creek Roads to outside the NSA

DEIS Comment from SOSA:

Pink Color Routes are the non-viable Alternate Routes identified in the DEIS.(at 1-16) Ausplund Road is NOT a possible alternative, given new road building within the NSA would be required, which the Applicant has acknowledged is not allowed for this use within the NSA. Pictures of the now-overgrown portion of Ausplund road is shown on following pages.

DEIS states in 1.4.3.6 (at 1-16) that both Alternatives have been eliminated as an alternative due to road construction requirements within the NSA.

As such, the DEIS is deficient in that no Construction Roadway alternatives are identified or considered. SOSA has identified two alternatives - namely Schoolhouse to Little Buck Creek Road, and Lalock-Kelchner Roads, both of which will take traffic out of the NSA and allow the Applicant to build roads on property which it ALREADY owns, all the way to the proposed Project site.

DEIS at 3-216

Figure 3.11-1
s from the East

URS

Ridge Energy Project
ia County, Washington

Exhibit 2A, page 2

Ausplund Road End, looking North

ref: left hand pink circle on page 1

Ausplund Road End, looking North

ref: left hand pink circle on page 1

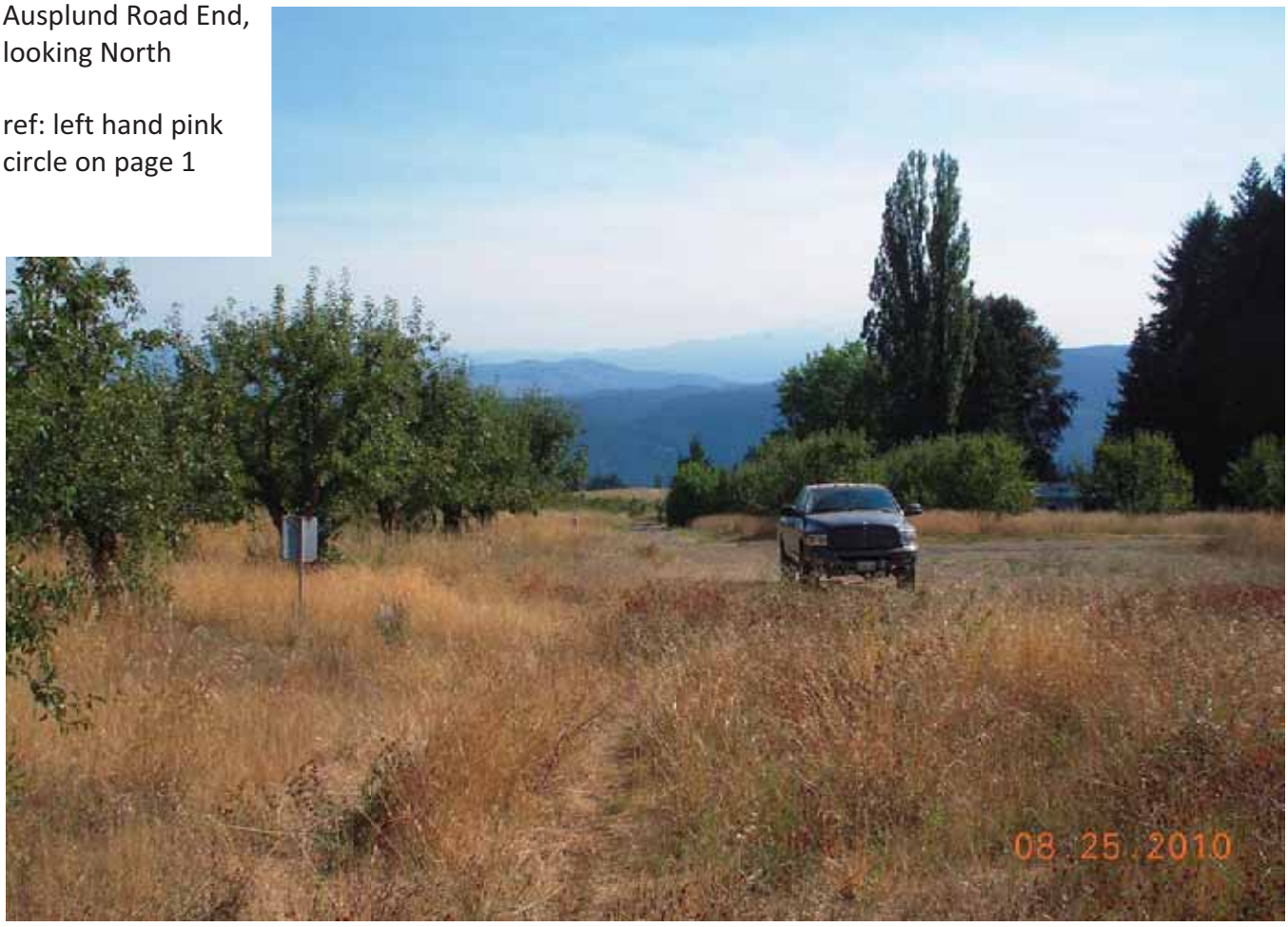
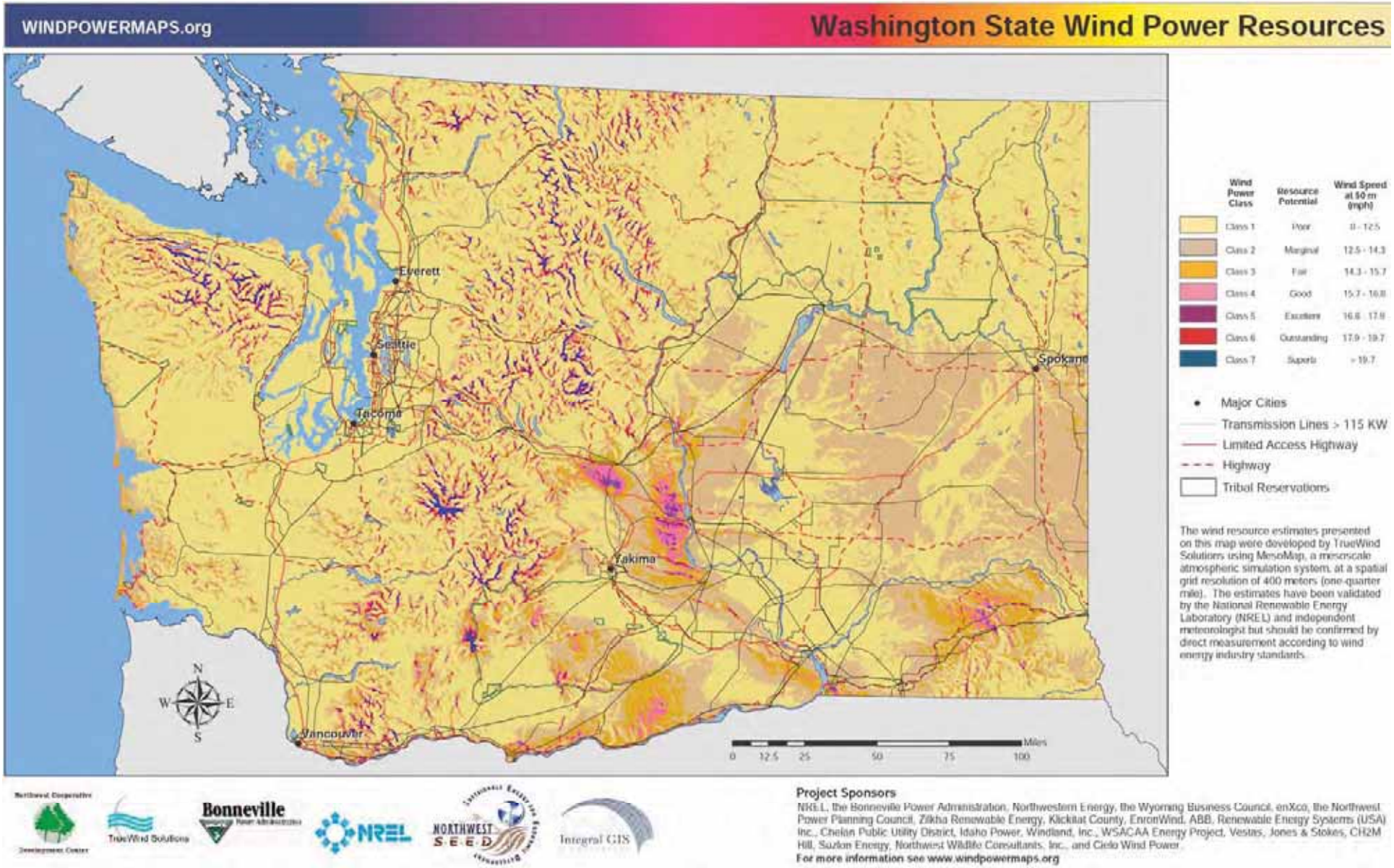


Exhibit 2B



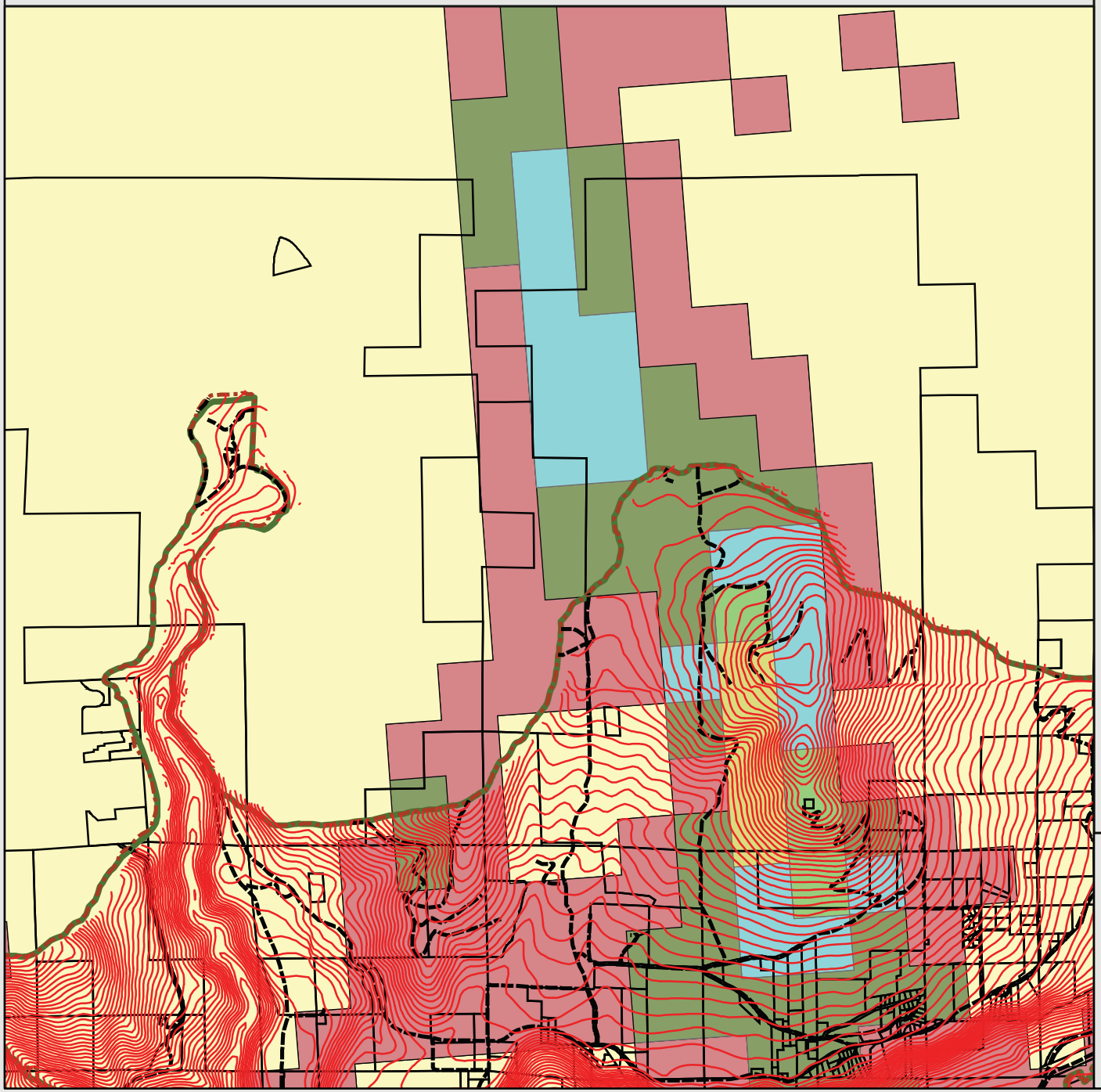
Project Sponsors

NREL, the Bonneville Power Administration, Northwestern Energy, the Wyoming Business Council, enXco, the Northwest Power Planning Council, Zilkha Renewable Energy, Klickitat County, EnronWind, ABB, Renewable Energy Systems (USA) Inc., Chelan Public Utility District, Idaho Power, Windland, Inc., WSACAA Energy Project, Vestas, Jones & Stokes, CH2M Hill, Suzlon Energy, Northwest Wildlife Consultants, Inc., and Cielo Wind Power.

For more information see www.windpowermaps.org

Exhibit 2C

National Renewable Energy Laboratories
Wind Speed Data for the Whistling Ridge Energy Project



Friends of the Columbia Gorge

Legend

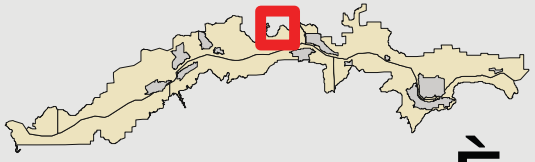
- topo_40
- road
- GMA
- SMA
- nsa_taxlots

WPC

- 1
- 2
- 3
- 4
- 5
- 6
- 7

2,000 0 2,000 4,000 Feet

Map Date: 24 Aug 10



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North

The forested area inside the "red oval" above was not logged. Note that both sides have been clear cut in 2003-4 on this 70%+ slope. Ref FPA's 2702754 and 2702799

This location is on the west slope at the south end of the proposed project, in the middle of Turbine String A1- A7.

The SEPA responsible official should investigate the nature of this area being restricted from logging, and what other information the DNR might have on this issue. They may contact the FP Forester named in the above FPA's, Tony Gilmer, who is still a State employee. contact Department of Natural Resources, Husum Office 509-493-3218 x222 for his contact information

Exhibit 2D, page 2

View looking east from Mill B flats on Cook-Underwood Road
section with trees remains unlogged

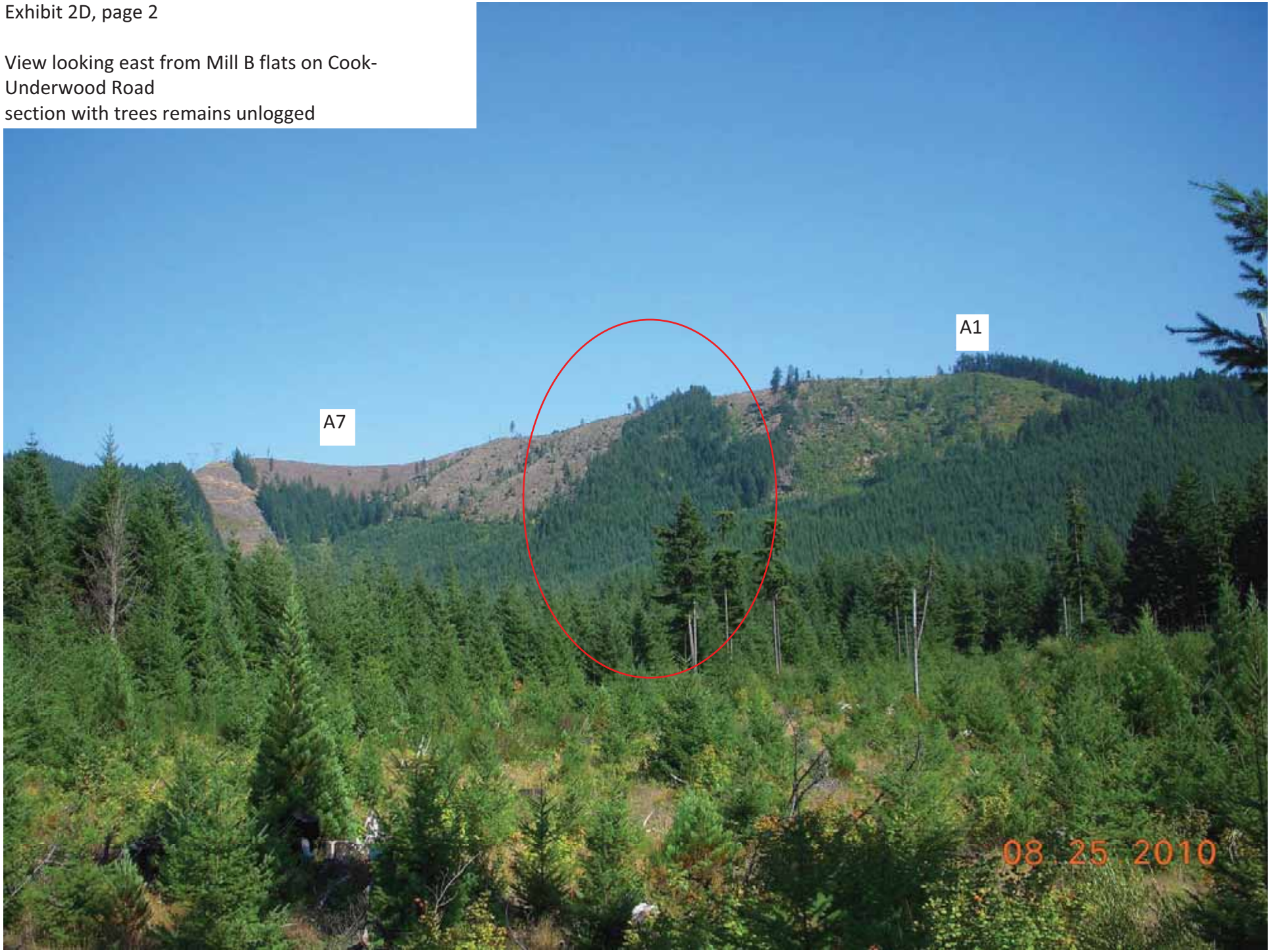

Exhibit 2G

Skamania County
Community Development Department

Skamania County Courthouse Annex
Post Office Box 790
Stevenson, Washington 98648
509 427-3900 FAX: 866-266-1534

August 11, 2010

Tom & Loreley Drach
[redacted]

RE: Request for Public Information dated July 6, 2010

Dear Mr. & Mrs. Drach,

This letter is in response to your Request for Public Information for any Skamania County Community Development issued permits, allowed administrative uses, or allowed outright uses, within the Forest Agriculture 20 zone in Township-Range-Section 03-10-18 and 03-09-13, between the years 2002 – 2010.

Our department has searched our paper records, electronic records, and emails as per your request. We have not received any applications or permitted any uses within the geographic area described, including records or correspondence related to meteorological towers. There is one Boundary Line Adjustment review, file number BLA-04-09, that was completed in 2004 that falls within the described area however it was not related to meteorological towers as far as any of our record show. Copies of this Boundary Line Adjustment (BLA) file are available to you by confirmation.

Sincerely,

Bonnie L. Anderson
Administrative Assistant

Exhibit 2H

OAR 345-022-0040(1)(g) prohibits energy projects that are "likely to result in significant adverse impact" to the Columbia River Gorge National Scenic Area.

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http://www.sos.state.or.us/archives/rules/OARs_300/OAR_345/345_022.html

345-022-0040

Protected Areas

(1) Except as provided in sections (2) and (3), the Council shall not issue a site certificate for a proposed facility located in the areas listed below. To **issue a site certificate for a proposed facility located outside the areas listed below, the Council must find that, taking into account mitigation, the design, construction and operation of the facility are not likely to result in significant adverse impact to the areas listed below.** References in this rule to protected areas designated under federal or state statutes or regulations are to the designations in effect as of May 11, 2007:

(a) National parks, including but not limited to Crater Lake National Park and Fort Clatsop National Memorial;

(b) National monuments, including but not limited to John Day Fossil Bed National Monument, Newberry National Volcanic Monument and Oregon Caves National Monument;

(c) Wilderness areas established pursuant to The Wilderness Act, 16 U.S.C. 1131 et seq. and areas recommended for designation as wilderness areas pursuant to 43 U.S.C. 1782;

(d) National and state wildlife refuges, including but not limited to Ankeny, Bandon Marsh, Baskett Slough, Bear Valley, Cape Meares, Cold Springs, Deer Flat, Hart Mountain, Julia Butler Hansen, Klamath Forest, Lewis and Clark, Lower Klamath, Malheur, McKay Creek, Oregon Islands, Sheldon, Three Arch Rocks, Umatilla, Upper Klamath, and William L. Finley;

(e) National coordination areas, including but not limited to Government Island, Ochoco and Summer Lake;

(f) National and state fish hatcheries, including but not limited to Eagle Creek and Warm Springs;

(g) National recreation and scenic areas, including but not limited to Oregon Dunes National Recreation Area, Hell's Canyon National Recreation Area, and the Oregon Cascades Recreation Area, and **Columbia River Gorge National Scenic Area**;

(h) State parks and waysides as listed by the Oregon Department of Parks and Recreation and the Willamette River Greenway;

(i) State natural heritage areas listed in the Oregon Register of Natural Heritage Areas pursuant to ORS 273.581;

(j) State estuarine sanctuaries, including but not limited to South Slough Estuarine Sanctuary, OAR chapter 142;

(k) Scenic waterways designated pursuant to ORS 390.826, wild or scenic rivers designated pursuant to 16 U.S.C. 1271 et seq., and those waterways and rivers listed as potentials for designation;

(L) Experimental areas established by the Rangeland Resources Program, College of Agriculture, Oregon State University: the Prineville site, the Burns (Squaw Butte) site, the Starkey site and the Union site;

(m) Agricultural experimental stations established by the College of Agriculture, Oregon State University, including but not limited to:

Coastal Oregon Marine Experiment Station, Astoria

Mid-Columbia Agriculture Research and Extension Center, Hood River

Agriculture Research and Extension Center, Hermiston

Columbia Basin Agriculture Research Center, Pendleton

Columbia Basin Agriculture Research Center, Moro

North Willamette Research and Extension Center, Aurora

East Oregon Agriculture Research Center, Union

Malheur Experiment Station, Ontario

Eastern Oregon Agriculture Research Center, Burns

Eastern Oregon Agriculture Research Center, Squaw Butte

Central Oregon Experiment Station, Madras

Central Oregon Experiment Station, Powell Butte

Central Oregon Experiment Station, Redmond

Central Station, Corvallis

Coastal Oregon Marine Experiment Station, Newport

Southern Oregon Experiment Station, Medford

Klamath Experiment Station, Klamath Falls;

(n) Research forests established by the College of Forestry, Oregon State University, including but not limited to McDonald Forest, Paul M. Dunn Forest, the Blodgett Tract in Columbia County, the Spaulding Tract in the Mary's Peak area and the Marchel Tract;

(o) Bureau of Land Management areas of critical environmental concern, outstanding natural areas and research natural areas;

(p) State wildlife areas and management areas identified in OAR chapter 635, division 8.

Save Our Scenic Area (SOSA)
[redacted]
www.saveourscenicarea.org

Comment on Whistling Ridge Energy Project

Draft Environmental Impact Statement (DEIS)

Section 3.9 Visual Resources

August 26, 2010

Stephen Posner
Energy Facility Site Manager
Washington EFSEC
905 Plum Street SE, 3rd Floor
PO Box 43712
Olympia, WA 98504-3712

Andrew M. Montaño
Environmental Protection Specialist
Bonneville Power Administration
PO Box 3621 KEC-4
905 NE 11th Avenue
Portland, OR 97208-3621

Dear Messrs. Posner and Montaño:

Save Our Scenic Area (SOSA) is involved with the Whistling Ridge Energy (WRE) project application as an Intervener. SOSA is a non-profit corporation formed by concerned local Gorge citizens. Its primary mission is to help preserve the Columbia River Gorge National Scenic Area view-shed; to further maintain the existing rural and scenic character of Underwood, Washington, and surrounding communities in Washington and Oregon; and work to preserve the intent of the Columbia River Gorge National Scenic Area Act. I am writing today to provide comments on the recently issued draft environmental impact statement (DEIS) for the WRE proposal.

SOSA is submitting several different comment letters, covering a variety of subject matter within the DEIS. We have also reviewed the comments submitted by the Friends of Columbia Gorge, agree with them and incorporate them by reference. There are multiple environmental issues involved in the consideration of this project and it is important that each be given through consideration in the EIS process. We find that, in many areas, the present DEIS is completely insufficient and we urge that the NEPA/SEPA responsible officials prepare a supplemental DEIS.

Save Our Scenic Area (SOSA)
[redacted]
www.saveourscenicarea.org

Topic: Visual Resources Section 3.9 DEIS at 3-155 - 3-196

The Federal Highway Administration process (FHWA) used by the Applicant should be replaced with the BLM methods referred to in the DEIS. If the FHWA methods are retained, then many parts of this methodology must increase in complexity and quantitative analysis, to ensure useful information for EFSEC decision makers. The deficiencies and proposed remedies outlined below serve only as a partial list of issues to address in correcting the DEIS Visual analysis to a level suitable for use as a unbiased, objective decision making "Tool." To this end, SOSA furthermore incorporates by reference, the Friends of the Gorge DEIS comments by Dean Apostle.

As the phrase goes - "a picture is worth a thousand words," I am focusing my comments on the problems associated with the photomontages. The visual photomontage's size, resolution, contrast ratio, and background sky conditions all serve to completely under-represent the likely visual impact created by the proposed Project. In fact they fail to provide any useful measure of the degradation in scenic value.

Deficiencies with the DEIS Section 3.9:

1) There is only one lighting scenario provided in the DEIS. The (daytime) conditions provided in the DEIS do not depict other illuminated conditions which will occur - namely, sunrise, sunset, and night time. (Reference Exhibit B)

2) There is only one contrast ratio provided in the DEIS - hazy. The four that should be used are clear, hazy, front lit and back lit. A Cloudy condition should result in minimal degradation, and should not need to be formally analyzed. (Reference Exhibit A and B)

3) The Landscape Scenic Quality Scale (Table 3.9-1, DEIS at 3-158) uses a numeric scale, but its application to the Viewpoints appear non-objective and bias towards minimizing the appearance of scenic degradation. Imagine not even one "postcard view" rating from the USA's only National Scenic Area (NSA).

4) The three levels of Visual Sensitivity (DEIS at 3-158 and 3-159) provide too coarse a resolution for true numeric analysis, especially given it's a combined parameter. As stated at DEIS 3-158, Visual Sensitivity is defined as a combined parameter of: number of viewers, type of viewers, viewing conditions, and quality of the view. It would be far more appropriate to evaluate each parameter separately. To each parameter apply a 6-level scale, then multiplying

them by appropriate weighting factors, then summing to a final numeric output. (not "Low, Moderate, High")

5) The Summary Table (Table 3.9-2, DEIS at 3-177) provides the "Level of Visual Impact" in qualitative terms. This is not a useful output for proper assessment or decision-making. Classifying the final output of this "qualitative" process with its 3-step scale underreports Scenic Degradation. It's kind of like asking a person that needs corrective vision to take off their eyeglasses to drive their car. The EFSEC Council, at the least, needs statistical, refined numbers to use in various "what-if" scenarios, to probe the effects of various mitigation concepts. Evaluating the effect of removal of various turbines or turbine strings, as an example. A finer resolution, numeric basis will provide a clearer consensus for decision makers.

6) The "Scenic Quality" value of "3" assigned to Viewpoint 23 is flawed. (Reference Exhibit C) Further, other viewpoint "scenic quality" values are likely under-valued or under-scored.

7) This summer 2010, SDS logged the 80 acres sloping south beneath the proposed A-string turbines, from the ridgeline down. (Ref. DNR FPA# 2704293) (Reference Exhibit E primary, and A and B secondary) There is now a huge 80 acre brown patch on the south facing slopes by Chemawa Hill, contrasting with adjacent green forest for the foreseeable future.
Furthermore, and more importantly, it removes about 100 feet of vertical distance between the rotor-swept area and the now visible ridgeline, thereby aggravating the disparity between the each "A" Turbine and the natural land forms around them.
The DEIS's existing visual photomontage's do not account for this recent and dramatic scenic landscape "modification," and thereby understate even further the magnitude of visual impact to viewpoints to the South and to the East. Affected Viewpoints are: 4, 15, and 23. The FPA 2704293 was approved in October 2008, so the Applicant had ample time and knowledge to advise their URS consultants as to the visual site conditions which should have applied to the Photomontages, to have them prepared appropriately.

Discussion

Even the most accurate picture cannot replicate the true image in real life. To this end, there must be a more quantitative approach to reaching an "accurate measurable difference", as proposed in paragraph 1 above. There are analogous quantitative tools, which Engineers like myself, use in their profession. For example - FMEA (Failure Modes Effects Analysis). These tools put tangible numbers to normally qualitative phenomena, allowing decision makers to make accurate comparative decisions. Objectively applied, I would predict that most all the viewpoints reported in this DEIS would show significantly higher scenic degradation than other

Wind Turbine Projects in Washington state. I propose that EFSEC, as the EIS responsible official, incorporate a process similar to the above referenced FMEA process, to the existing WRE template and to future EFSEC Applications, as well.

Further refinement of visual impact could be achieved by classifying the percent of time a particular viewer will see the Turbines with a given contrast ratio. Meaning from a given location, say 35% of the time, a viewer will see flashing red lights, 16% of the time they will see only cloud cover, 40% of the time clear deep blue sky, 5% sunrise/sunset, etc. Then sensitivity and view value for each situation can be quantified for each location.

This author lives adjacent to Viewpoint 23 (DEIS at 3-190), and has produced scaled photomontages to illustrate the dramatic visual difference that lighting direction, and clear blue skies will affect the contrast ratio, and hence visual impact. All of the assumptions are clearly stated on the photomontages, and information is on each for independent confirmation as to scale. These are intended to serve as scaled representations, not photo-realistic images, and not dissimilar from the URS-supplied image.

REMEDIES - proposed actions by DEIS responsible official to correct Deficiencies

1) All photomontages should accurately depict the four viewing conditions of: a) clear, bright blue sky, b) hazy, c) back lit(i.e. sunset) and d) night time.

2) The contrast ratios should be adjusted higher to closely simulate how the Turbines would be seen in "real life" resolution. ("real life" resolution is clearly articulated in Dean Apostle comments)

3) The "Level of Visual Impact" in Table 3.9-2 must be a numeric product of a multi-variable analysis, each variable with a numeric scale of at least 6 levels of distinction. The variables identified previously, along with the additional variable discussed above will provide a quantifiable output with clear relative importance being attributed to each viewpoint.

4) The analysis "output" for Table 3.9-2, "Level of Visual Impact" needs to be a finer resolution, numeric basis to provide a clear consensus for decision makers to enter into "what-if" scenarios when contemplating various mitigation opportunities.

5) For current and future EFSEC Applications, consider evaluating Scenic Degradation compared to a standardized reference view shed - say an expansive desert shrub-steppe/ wheat field environment where most Turbines are effectively located. (One could also consider this same approach for wildlife habitat and mortality impacts...)

Save Our Scenic Area (SOSA)

[redacted]

www.saveourscenicarea.org

6) Due to clear-cutting of the A-Turbine String Ridgeline this summer 2010, the visuals from sites 4, 15, and 23 sorely under-represent reality, and must be re-created using new photographs and properly scaled Turbines, and on a worst case contrast ratio. "Changes to topography," as (vaguely) mentioned in DEIS at 3-9, must also be included.

7) These slopes of the proposed A1-7 string, if not others, will have permanent land scarring activity. Depending on the geologically allowable locations of Turbines, land scarring may be in full view of, and facing the National Scenic Area. The visual impact of these landform disturbances must be including in the Visual analysis. As a reference to the magnitude and scale of "changes to topography" (DEIS at 3-9) a photograph of construction activity on a ridge top in Maine is included as Exhibit G. The slope in Exhibit G appears not as steep as the Northwestern and Western slopes of the proposed Project, which are the windward side of the prevailing wind direction. In particular to the A1-A7 proposed Turbines, this is also true, but furthermore, the opposite slope of the A1-A7 string is similar in slope to Exhibit G. This supports our claim that significant and permanent land scarring activity is likely, especially true for the A1-A7 proposed Turbines.

Thank you for this opportunity to comment on the DEIS. SOSA trusts that the DFEIS and FEIS will provide facts and analysis on the issues raised herein.

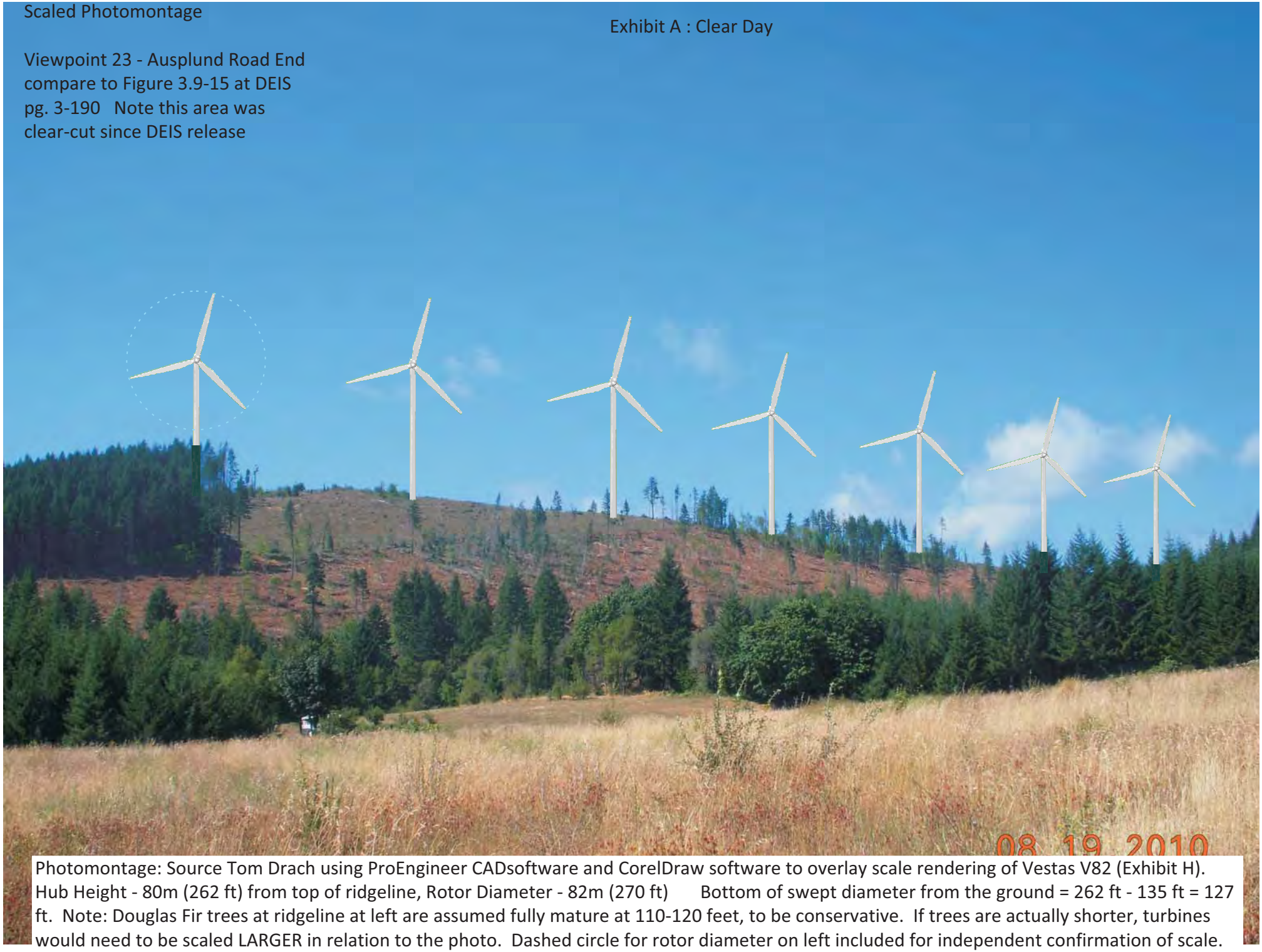
Regards,

Thomas Drach, PE
Board Member

Scaled Photomontage

Exhibit A : Clear Day

Viewpoint 23 - Ausplund Road End
compare to Figure 3.9-15 at DEIS
pg. 3-190 Note this area was
clear-cut since DEIS release

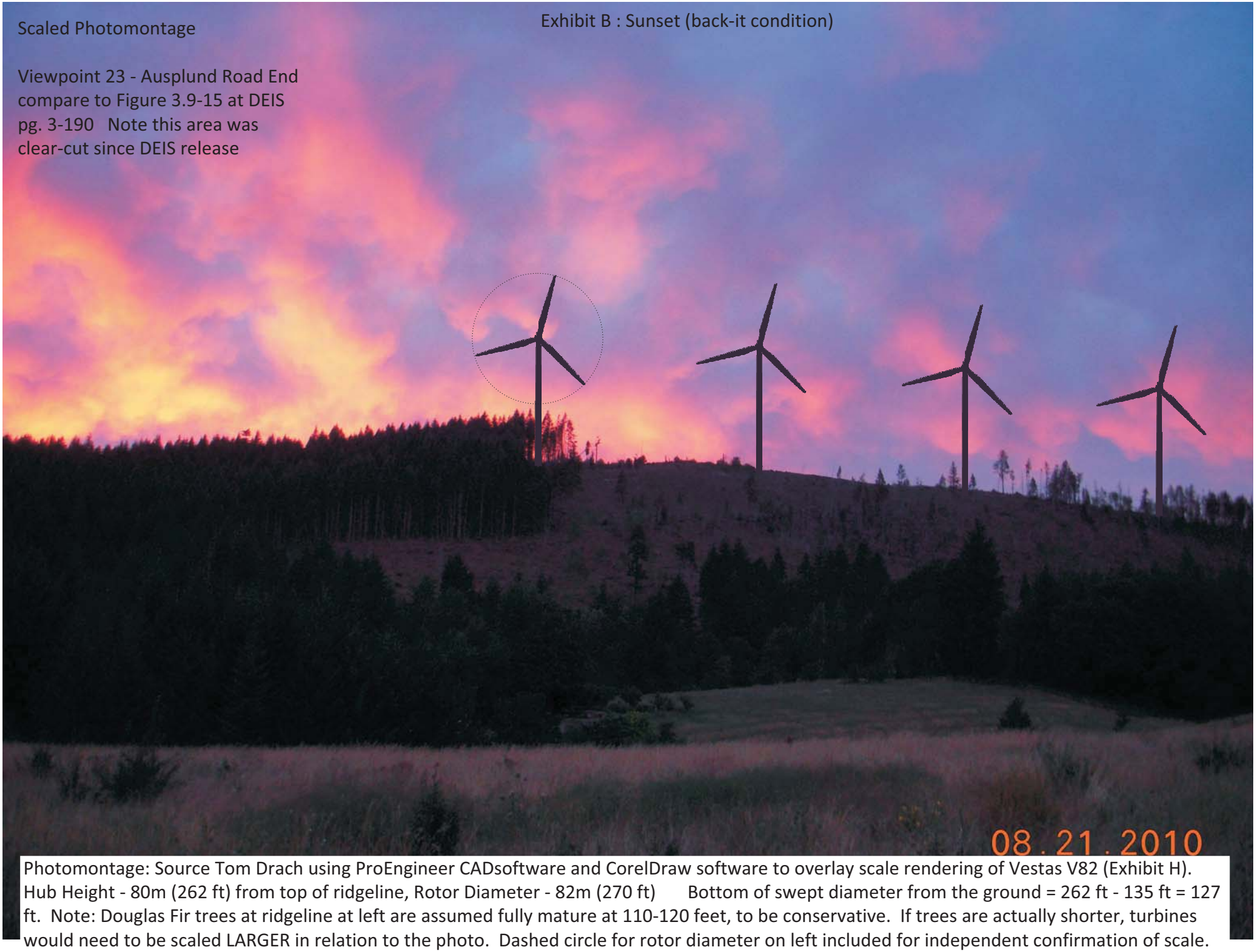


Photomontage: Source Tom Drach using ProEngineer CADsoftware and CorelDraw software to overlay scale rendering of Vestas V82 (Exhibit H). Hub Height - 80m (262 ft) from top of ridgeline, Rotor Diameter - 82m (270 ft) Bottom of swept diameter from the ground = 262 ft - 135 ft = 127 ft. Note: Douglas Fir trees at ridgeline at left are assumed fully mature at 110-120 feet, to be conservative. If trees are actually shorter, turbines would need to be scaled LARGER in relation to the photo. Dashed circle for rotor diameter on left included for independent confirmation of scale.

Scaled Photomontage

Exhibit B : Sunset (back-it condition)

Viewpoint 23 - Ausplund Road End
compare to Figure 3.9-15 at DEIS
pg. 3-190 Note this area was
clear-cut since DEIS release



Photomontage: Source Tom Drach using ProEngineer CADsoftware and CorelDraw software to overlay scale rendering of Vestas V82 (Exhibit H). Hub Height - 80m (262 ft) from top of ridgeline, Rotor Diameter - 82m (270 ft) Bottom of swept diameter from the ground = 262 ft - 135 ft = 127 ft. Note: Douglas Fir trees at ridgeline at left are assumed fully mature at 110-120 feet, to be conservative. If trees are actually shorter, turbines would need to be scaled LARGER in relation to the photo. Dashed circle for rotor diameter on left included for independent confirmation of scale.

Exhibit C : DEIS Visual Quality Rating of "3" Contended

Original Photo - unretouched location is the end of Ausplund Road End, looking South, photo by Tom Drach, Nikon 5MP cheapo camera
Proposed turbines to the North, reference Viewpoint 23, Figure 3.9-15 at DEIS pg. 3-190
DEIS rates this location as: (Table 3.9-2 at 3-177)
Scenic Quality = Moderate (3 on a scale 1 to 6, 6 being postcard quality) (REALLY ??? should be a 6)
Viewer Sensitivity = Moderate, hence overall rating of Visual Impact = Moderate
Authors Note: How many other Viewpoints "analyzed" in the DEIS suffer from this same disparity in "Scenic Quality" rating?

- Unity is the degree to which the visual resources of the landscape join together to form a coherent and harmonious visual pattern

Each viewpoint was assigned a final rating based on the rating scale shown in Table 3.9-1. This rating scale incorporates the landscape assessment concepts developed in the USFS and FWHA methodologies.

Table 3.9-1
Landscape Scenic Quality Scale

Visual Quality Rating	Explanation
Outstanding 6	A rating reserved for landscapes with exceptionally high visual quality. These landscapes are significant nationally or regionally. They usually contain exceptional natural or cultural features that contribute to this rating. They are what we think of as "picture postcard" landscapes. People are attracted to these landscapes to view them.
High 5	Landscapes that have high quality scenic value. This may be due to cultural or natural features contained in the landscape or to the arrangement of spaces contained in the landscape that causes the landscape to be visually interesting or a particularly comfortable place for people. These landscapes have high levels of vividness, unity, and intactness.
Moderately High 4	Landscapes that have above average scenic value but are not of high scenic value. The scenic value of these landscapes may be due to human or natural features contained within the landscape, to the arrangement of spaces in the landscape, or to the two-dimensional attributes of the landscape. Levels of vividness, unity, and intactness are moderate to high.
Moderate 3	Landscapes that are common or typical landscapes with average scenic value. They usually lack significant human or natural features. Their scenic value primarily results from the arrangement of spaces contained in the landscape and the two-dimensional visual attributes of the landscape. Levels of vividness, unity, and intactness are average.
Moderately Low 2	Landscapes that have below average scenic value but not low scenic value. They may contain visually discordant human alterations, but these features do not dominate the landscape. They often lack spaces that people perceive as inviting and provide little interest in terms of two-dimensional visual attributes of the landscape.
Low 1	Landscapes that have below average scenic value. They may contain visually discordant human alterations, and often provide little interest in terms of two-dimensional visual attributes of the landscape. Levels of vividness, unity, and intactness are below average.

Source: Buhyoff et al. (1994), FHWA (1988), and USFS (1995)

3.9.1.2 Visual Sensitivity Assessment

The analysis also assessed visual sensitivity, which involves predicting the general impact on the quality of views from a given viewpoint. A combination of three factors determines how sensitive a landscape scene is:

- The number and type of viewers
- The viewing conditions
- The quality of the view

Residential areas with unobstructed views of a regionally important and memorable scene would be very sensitive to objects or structures that would impede views. A view from a seldom-

Exhibit E:
Due to recent clear-cuts by SDS Lumber Company during this summer of 2010, reference Comment below DEIS table:

Table 3.9-2
Summary of Existing Scenic Quality Assessment and Project Visual Impacts

Viewpoint	Within or Outside of Scenic Area[a]	Distance from Nearest Turbine (miles)	Existing Scenic Quality		Anticipated Level of Visual impact
			Visual Quality	Viewer Sensitivity	
Viewpoint 1: State Highway 141/Pucker Huddle (Figure 3.9-3)	SA	3.99	Low	Moderate	Low to Moderate
Viewpoint 3: Husum, Highway 141 north (Figure 3.9-4)	--	4.76	Moderate to Moderately High	Moderate	Moderate
Viewpoint 4: Ausplund Road, Cook-Underwood Road (Figure 3.9-5)	KVA	1.23	Moderate	Moderate	Moderate
Viewpoint 5: Willard (Figure 3.9-6)	--	1.35	Moderately Low to Moderate	Moderate	Moderate
Viewpoint 7: Mill A (Figure 3.9-7)	--	1.62	Moderately Low	Moderate	Low to Moderate
Viewpoint 11: I-84 Westbound (Figure 3.9-8)	KVA	8.39	Moderate	Moderate	Moderate to Low
Viewpoint 12: Koberg Park (Figure 3.9-9)	SA	6.60	Moderately High	Moderate	Moderate
Viewpoint 13: I-84 Eastbound (Figure 3.9-10)	KVA	3.43	Moderately High	Moderately Low	Moderate to Low
Viewpoint 14: Viento State Park (Figure 3.9-11)	SA	3.99	Moderately High to High	Moderate to High	Moderate to High
Viewpoint 15: Frankton Road (Figure 3.9-12)	SA	4.51	Moderate	Moderate	Moderate
Viewpoint 17: Providence Hospital (Figure 3.9-13)	SA	5.07	Moderately Low	Low	Low
Viewpoint 19: Columbia River Highway (Figure 3.9-14)	SA	6.46	Moderately High	Moderate	Low
Viewpoint 23: Ausplund Road End (Figure 3.9-15)	SA	0.64	Moderate	Moderate	Moderate

a. -- = not in Scenic Area; SA = within Scenic Area; KVA = Key Viewing Area within Scenic Area

Comment by SOSA:
Due to clear-cutting of the A-Turbine String Ridgeline this summer 2010, the visuals boxed in RED above, must be re-created using new photographs and properly scaled Turbines on a worst case contrast ratio. Topographic changes must also be included, per

This summer, SDS logged the 80 acres sloping to the south-east of the proposed A-string turbines, from the ridgeline down.
This now leaves a dramatic brown patch contrasted with the green forest for at least 5 years, and land scarring activity of the turbine foundations and roads, all of which must be included in the applicable photomontages.
Furthermore and more importantly,it removes about 100 feet of vertical distance between the rotor-swept area and the closest ground features.
The existing visual photomontage's do not account for this recent and dramatic scenic landscape "modification," and thereby understate even further the magnitude of visual impact to viewpoints to the South and East.

Exhibit F: original photomontage from DEIS at 3-190, with comment in Grey Box below:

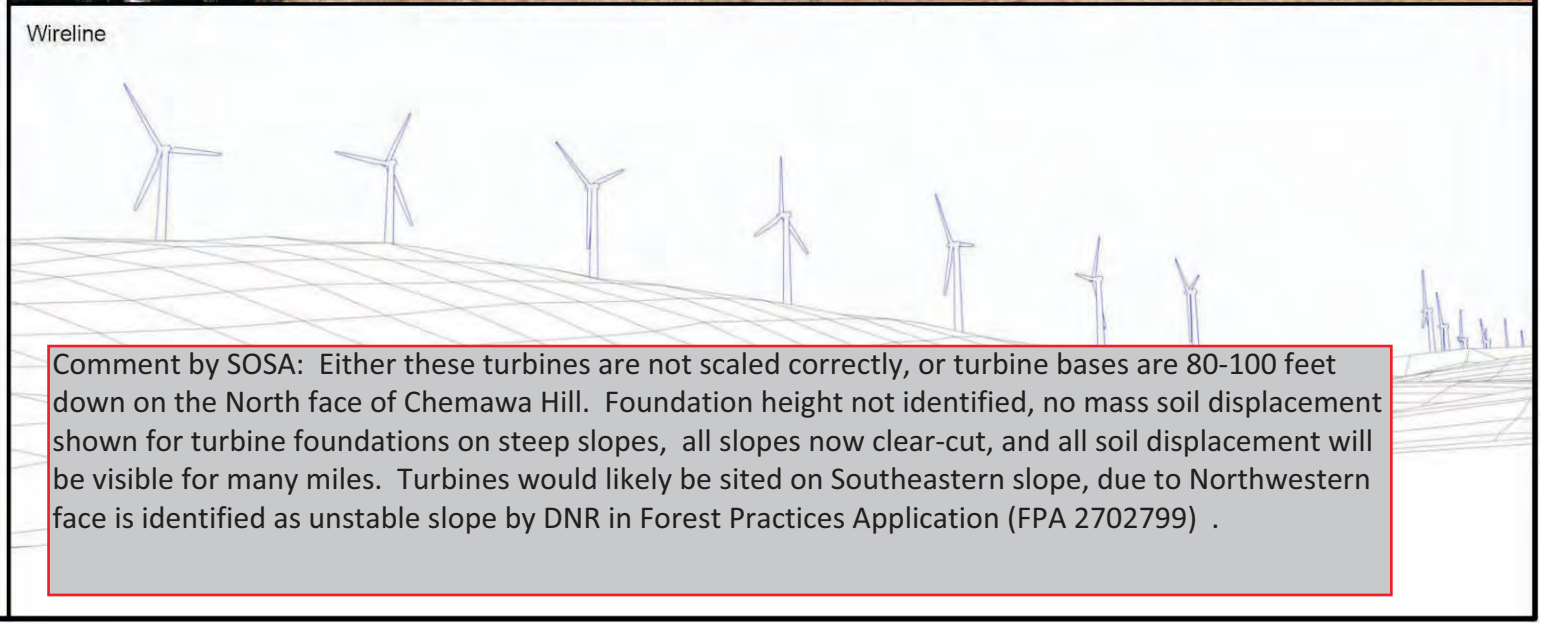
33758687_138.cdr

Photomontage and Wireline

Viewpoint Location
45°44'15" N 121°36'07" W
Bearing: 345 °
Field of View: 58°
1.02 km to the nearest turbine
Elevation: 482 meters

Turbine Information
Hub Height: 80 meters
Rotor Diameter: 93 meters

Number of hubs visible: 8
Number of tips visible: 21



Comment by SOSA: Either these turbines are not scaled correctly, or turbine bases are 80-100 feet down on the North face of Chemawa Hill. Foundation height not identified, no mass soil displacement shown for turbine foundations on steep slopes, all slopes now clear-cut, and all soil displacement will be visible for many miles. Turbines would likely be sited on Southeastern slope, due to Northwestern face is identified as unstable slope by DNR in Forest Practices Application (FPA 2702799) .

Source: GeoDataScape.

Figure 3.9-15

Viewpoint 23 - Ausplund Road End

URS

Whistling Ridge Energy Project
Skamania County, Washington

Exhibit G

Ridge Carving for Geologic Stability
Mars Hill, Maine 2006

Similar visual impacts are likely for WRE Project, but no details are given either visually, geologically, or environmentally.

Exhibit H:

Included as reference data for scaled photomontages

V82-1.65 MW

Creating more from less

Vestas

Optimized for low and medium winds

With its large rotor and powerful generator, the V82 outperforms any turbine in its megawatt class for sites with low and medium wind conditions. Our hydraulic Active-Stall® technology ensures that the rotor gathers the maximum power from the prevailing wind, while minimizing loads and controlling output. Active-Stall® provides fail-safe protection in all conditions and, at and above its rated wind speed, maintains a steady output of 1.65 MW. With the V82, we have designed a wind turbine that offers unparalleled performance at a cost-effective price.

Low sound level

Vestas has made a concerted effort to reduce the sound level of the V82 dramatically – with audible results. The operating sound levels are among the lowest on the market, regardless of wind speed.

Excellent grid compatibility

As wind turbines capture more of the electricity market each year, they have an increasingly significant role to play in grid management. Fortunately, the V82 meets even the most stringent grid demands, and with the installation of our advanced grid compliance system, the V82 will actually help stabilize a weak grid. VestasGridSupport™ features full load and dynamic phase compensation to enhance reactive power regulation and thus keep the power factor in range. It has an uninterrupted backup power supply, too, so that auxiliary systems run at full capacity during grid disturbances. Moreover, our grid support provides continuous active and reactive power regulation to maintain voltage balance in the grid, as well as fault ride-through in the event of disturbances.

High reliability

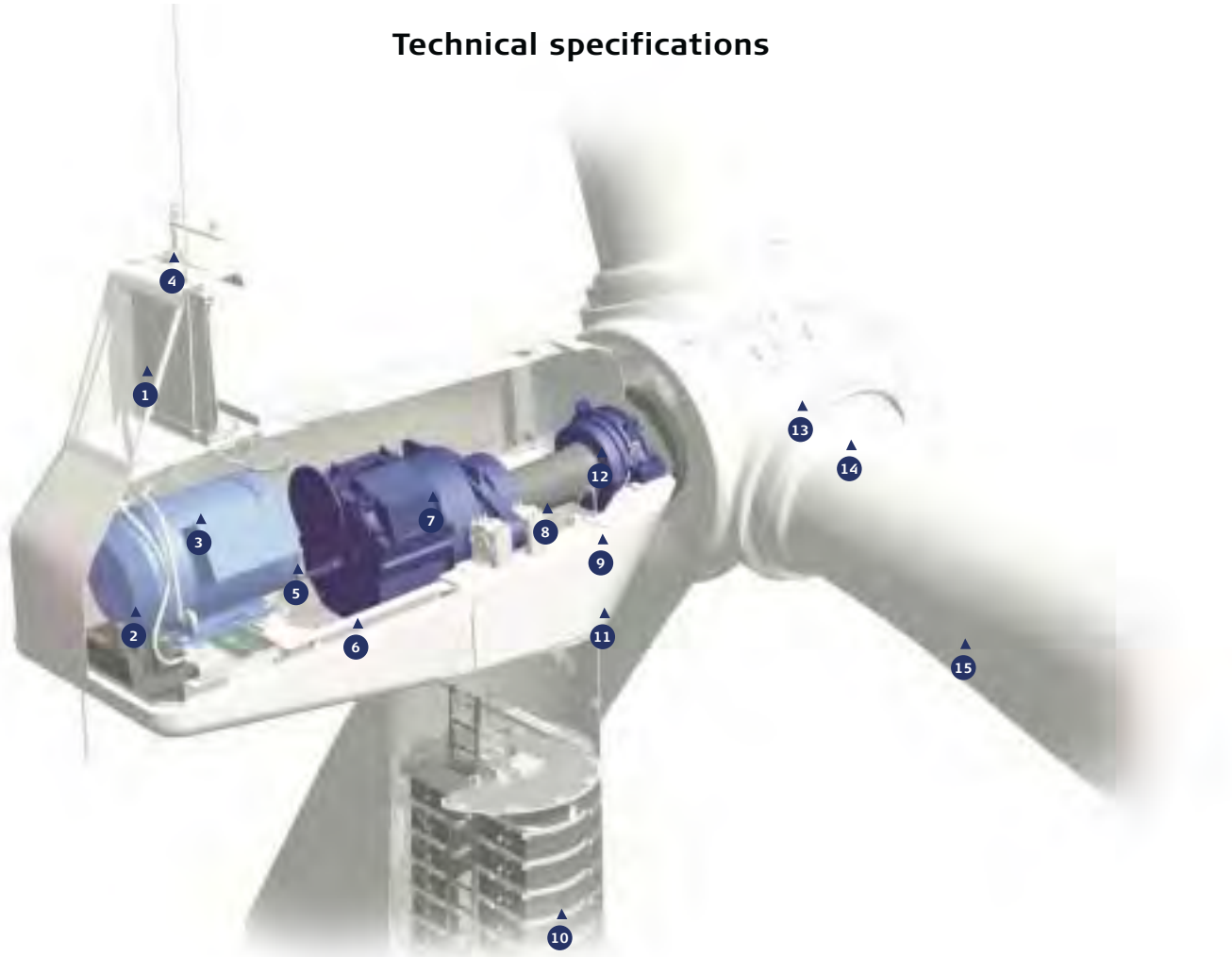
Det Norske Veritas (DNV) has certified the V82 as meeting the strictest standards in the wind industry. It has the capacity to tune up its own generator, which helps to give it a particularly high degree of operational availability. In addition, the nacelle is based on the thoroughly tested design of previous models. To date, more than 700 wind turbines featuring this platform design have been installed on sites with conditions ranging from arctic to tropical.

Proven performance

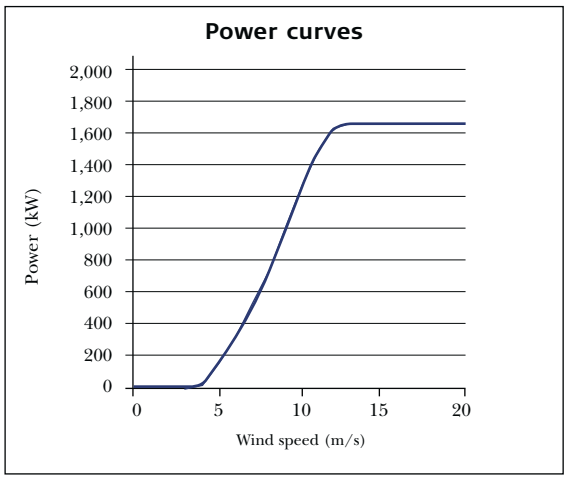
Wind power plants require substantial investments, and the process can be very complex. To assist in the evaluation and purchasing process, Vestas has identified four factors that are critical to wind turbine quality: energy production, operational availability, power quality and sound level.

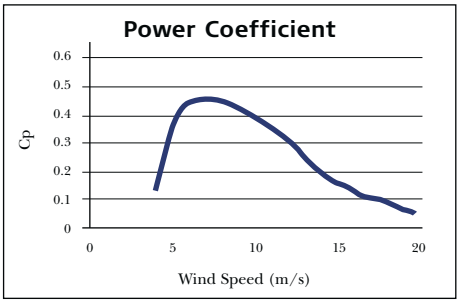
We spend months testing and documenting these performance areas for all Vestas turbines. When we are finally satisfied, we ask an independent testing organisation to verify the results – a practice we call Proven Performance. At Vestas we do not just talk about quality. We prove it.

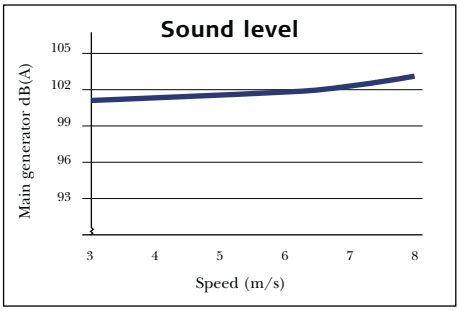
Technical specifications



1 Cooler	6 Mechanical brake	11 Machine foundation
2 Generator	7 Gearbox	12 Main bearing
3 Nacelle computer	8 Main shaft	13 Hub computer
4 Anemometer windvanes	9 Yaw gears	14 Pitch system
5 Coupling	10 Tower damper	15 Blade







Rotor

Diameter:	82 m
Area swept:	5,281 m²
Nominal revolutions:	14.4 rpm
Number of blades:	3
Power regulation:	Active-Stall®
Air brake:	Full blade pitch

Tower

Hub height (approx.):	59 m, 70 m, 80 m

Operational data

	1,650 kW
Cut-in wind speed:	3.5 m/s
Nominal wind speed:	13 m/s
Cut-out wind speed (10 minutes):	20 m/s
Cut-out wind speed (1 minute):	24 m/s
Cut-out wind speed (1 second):	32 m/s

Generator

Type:	Asynchronous generator water cooled
Nominal output:	1,650 kW
Operational data:	60 Hz 690 V

Gearbox

Type:	Planetary/helical stages

Control

Type:	Computer-based control of all turbine functions with the option of remote monitoring. Output regulation and optimization via Active-Stall®.

Weight (IEC IIB)

Hub height (approx.):	59 m	70 m	78 m	80 m
Tower:	72 t	105.5 t	127 t	162 t
Nacelle:	52 t	52 t	52 t	52 t
Rotor:	43 t	43 t	43 t	43 t
Total:	167 t	200.5 t	222 t	257 t

t = metric tons

All specifications subject to change without notice.

Creating more from less

Ideally, it makes sense to generate electricity close to where it will be consumed so as to keep transmission, infrastructure and service costs low. However, since populous areas tend to have low winds and stringent requirements on sound levels, the wind industry often concentrates on coastal areas, deserted interiors and the open sea, where the wind is plentiful and sound restrictions are few.

With the V82 wind turbine, Vestas has made it easier to produce electricity close to where people live. Not only is the V82 extremely efficient in areas with low and medium winds, but it also provides lower sound levels to suit local requirements. This means that a large number of previously marginal sites can now be exploited profitably – and quietly.

The V82 is an extremely competitive turbine in its class in areas with low and medium winds. An impressive capacity factor of 41 percent at 7.5 m/s at hub height speaks for itself and enables the V82 to create more power from less

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03/05 US

COMMENT LETTER 179

Comments on the Draft Environmental Impact Statement for the Whistling Ridge Energy Project DOE/EIS – 0419

Submitted by

Friends of the Columbia Gorge

August 27, 2010

Cover photo © Chris Carvalho, www.lensjoy.com
Natural scenic views in the Columbia River Gorge, including this view of Mt. Hood from Nestor Peak, would be permanently damaged by the Whistling Ridge Energy Project.

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A. Dean Apostol, Written Testimony and Resume

B. Dean Apostol Analysis Notes

C. Dr. Shawn Smallwood Comments

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E. *Yakima Herald-Republic*, "Yakamas say development is damaging sacred cultural sites"

F. Historic Columbia River Highway Master Plan - Segments

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H. Lewis and Clark National Historic Trail Master Plannning Newsletter 07-27-2010)

I. Lewis and Clark National Historic Trail Management Plan

J. CRGNSA 1991 Management Plan Excerpt Part I

K. CRGNSA 1991 Management Plan Excerpt Part II

L. CRGNSA Visual Resource Inventory Maps

M. Breckel Memorandum on Mapping the National Scenic Area Boundary

N. Gorge GIS I-84 Visibility Map

O. NREL Wind Speed Map for Whistling Ridge Area

P. BPA Wind Project Map 2010

Q. Oregon EFSC Energy Projects Under Review

R. BPA Business Plan EIS Excerpt (DOE-EIS-0183)

S. BPA Supplemental Analysis for Business Plan EIS (DOE-EIS-0183)

T. BPA Central Ferry-Lower Monument DEIS

U. BPA Report on Installed Wind Capacity

V. BPA Network Open Season 2008-2009 Project Summary (May 27, 2010)

W. BPA Network Open Season Decision Letter (Feb. 16, 2009)

X. BPA Network Open Season 2008 PTSA Update

Y. BPA Network Open Season 2009 Eligibility Summary (07-22-09)

Z. BPA Network Open Season Summary 2010 TSRs

AA. BPA 2008 Network Open Season Project Descriptions (Oct. 2009)

BB. BPA Interconnection Queue Spreadsheet

CC. Bright Future Update (July 2009)

DD. Skamania County Hearing Examiner Decision (SEP-08-35)

EE. Appellants' Pre-Hearing Brief (SEP-08-35)

FF. Appellants' Reply Brief (SEP-08-35)

GG. Testimony of Gary K. Kahn, Friends of the Columbia Gorge, EFSEC Land Use Proceedings

HH. Columbia River Gorge Commission Memorandum on Legality of Road Use

II. *Friends v. Forest Service*, 546 F.Supp.2d 1088 (D.Or. 2008)

JJ. Letter from Rick Till, Friends of the Columbia Gorge, to EFSEC on Land Use Consistency

KK. Nov. 6, 2009 Applicant Letter to Gorge Commission

LL. Excerpts from the Klickitat County EOZ Environmental Impact Statement

MM. May 28, 2010 Emails Between EFSEC & URS

NN. April 9, 2010 Email from Applicant Regarding Use of DNR Land

INTRODUCTION

These comments regarding the Draft Environmental Impact Statement for the Whistling Ridge Energy Project are submitted by Friends of the Columbia Gorge.[1] Friends is a nonprofit organization with approximately 4,700 members dedicated to protecting and enhancing the resources of the Columbia River Gorge.

Of all the wind energy projects that EFSEC and BPA have reviewed to date, the Whistling Ridge Energy Project is easily the most controversial and problematic, as well as the project most likely to cause significant environmental impacts. This is the only project proposed to be located within forested habitat. This is the only project proposed within a designated Special Emphasis Area for the federally listed Northern Spotted Owl. This is the only project proposed within three miles of the Lewis and Clark National Historic Trail, the Oregon Pioneer National Historic Trail, the Historic Columbia River Highway (designated as a National Historic District on the National Register of Historic Places, as well as a National Historic Landmark), and the Ice Age Floods National Geological Trail. This is the only project for which multiple other agencies, including the United States Forest Service and the National Park Service, have recommended substantial modifications to the project. This is the only project proposed adjacent to a National Forest. This is the only project that would cause significant adverse impacts in two states (not just Washington). This is the only proposed project surrounded by recreational and cultural resources. And last but certainly not least, this is the only proposed project that would cause significant adverse impacts to a National Scenic Area.

[1] Friends hereby incorporates by reference all of its previous written and oral comments to the agencies, as well as its submissions to EFSEC through that agency's adjudicative proceeding and land use consistency process. The DEIS does not adequately address many of Friends' previous comments. Friends also incorporates all comments of Save Our Scenic Area.

Because of these unique factors, the agencies must take a special, close look at the impacts. Unfortunately, this Draft Environmental Impact Statement fails to take the hard look required by NEPA and SEPA. The DEIS is fundamentally flawed because it improperly narrows the scope of study, ignores and trivializes the impacts of the project, ignores or summarily dismisses detailed comments from the public and expert agencies, and was largely drafted and/or influenced by the applicant and the applicant's consultants behind closed doors and is therefore extremely biased in favor of the project. The DEIS is so deficient that it cannot be used as the basis for a decision on the project. The proposed project should be denied outright, but if it is to be given further consideration, a supplemental or revised DEIS is required.

BACKGROUND

I. The Columbia River Gorge and the Affected Communities

The Whistling Ridge project would be sited in the heart of the Columbia River Gorge. Many of the proposed turbines would be sited immediately adjacent to and/or highly visible from the Columbia River Gorge National Scenic Area. In addition, portions of the proposed "haul route," along which construction materials and turbine components would be transported, are located within the National Scenic Area.

Established by Congress in 1986, the National Scenic Area is an extraordinary national treasure, an area protected under federal law for its aesthetic, biological, ecological, historic, and recreational values. *See* Columbia River Gorge National Scenic Area Act ("Scenic Area Act"), 16 U.S.C. §§ 544–544p.

The Gorge, under the protection of the Scenic Area Act, offers unfettered scenic and historic views along the Columbia River, site of the final portion of Lewis and Clark's journey across the West. Additionally, the Gorge offers unique recreational opportunities with its many

side-river canyons, ridgetops, and the Columbia River itself. Hiking, bicycling, river rafting, kayaking, skiing, boating, fishing, camping, kiteboarding, windsurfing, birdwatching, and wildflower viewing are all pursued actively by the public throughout the Gorge. The overall character of the surrounding region highly scenic, ranging from wilderness to rural areas with quaint towns and spectacular vistas, rather than industrial or commercial.

In its November/December 2009 issue, *National Geographic Traveler* ranked the Columbia Gorge region #6 internationally, and second in the nation, among "iconic destinations." The Gorge was ranked higher than all of the county's national parks that were surveyed, and higher than Tuscany, Italy; the Serengeti Plains; and Mount Kilimanjaro. A primary reason given by *National Geographic* for the Gorge's high ranking was the Gorge's international reputation for "an incredible job of protecting the views." Another stated reason was the Gorge's "[g]reat potential for 'agritourism and geotourism.'"

The Gorge has long been considered a special area. In 1915, the U.S. Forest Service ("USFS" or "Forest Service") established Eagle Creek as the first Forest Service Recreation Area in the nation. The following year, the Gorge was proposed as a National Park. Continuing development pressures led to the establishment of the National Scenic Area in 1986. Today the Gorge contains hundreds of miles of hiking and bike trails through locales as diverse as misty river canyons and arid grassland plateaus. The Gorge also contains dozens of lakes, parks, campgrounds, and other recreational areas.

The proposed energy project would be highly visible from several urban areas and unincorporated communities in or near the National Scenic Area. These include Underwood, Hood River, Mosier, Mill A, Willard, and White Salmon. Hundreds of residents of these and

other communities are strongly opposed to the project and have expressed their opposition and concerns in comments to the reviewing agencies and to Skamania County.

II. The National Environmental Policy Act

A major purpose of the National Environmental Policy Act ("NEPA") is to ensure that federal agencies conduct fully informed environmental decision-making. NEPA promotes its sweeping commitment to "prevent or eliminate damage to the environment and biosphere" by focusing the attention of federal decision makers and the public on the environmental and other impacts of proposed agency action. 42 U.S.C. § 4321. By focusing agency attention on the environmental and socioeconomic impacts of a proposed action, NEPA ensures that the agency will not act on incomplete information, only to regret its decision once finalized. *See Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989).

To that end, "[t]he sweep of NEPA is extraordinarily broad, compelling consideration of any and all types of environmental impacts of federal action." *Calvert Cliffs' Coordinating Comm. v. U.S. Atomic Energy Comm'n*, 449 F.2d 1109, 1122 (D.C. Cir. 1971). An agency must "take the initiative of considering environmental values at every distinctive and comprehensive stage of the process." *Id.* at 1111.

III. The State Environmental Policy Act

The Washington State Environmental Policy Act ("SEPA") applies to state and local governmental actions and decisions. SEPA's general purpose is to require consideration of environmental factors at the earliest possible stage in order to allow decisions to be based on a complete disclosure of environmental consequences. *See Stempel v. Dept. of Water Resources v. City of Kirkland*, 82 Wn. 2d. 109, 118 (1973). Agencies are required to engage in an open and public study of environmental impacts at the earliest possible time. RCW § 43.21C.030(b); *see*

also WAC § 197-11-300.

Agencies must assess the likely cumulative, direct, indirect, short-term, and long-term impacts to the environment. WAC 197-11-030(2)(b), (2)(g); *see also* State Environmental Policy Act Handbook (SEPA Handbook) at 2 (2003). Agencies must also evaluate alternatives and mitigation measures. WAC 197-11-055(2)(c); *see also* SEPA Handbook at 2. Agencies "shall not limit" consideration only to impacts within the boundaries of the agencies' jurisdiction. WAC 197-11-060(4).

For projects with likely significant impacts, environmental impact statements are required to ensure that government agencies and interested citizens have an opportunity to thoroughly review environmental impacts of proposed actions at the earliest possible stage; the agency must use the EIS in planning actions and making decisions. WAC 197-11-400(4). "The primary purpose of an environmental impact statement is to ensure that SEPA's policies are an integral part of the ongoing programs and actions of state and local government." WAC 197-11-400(1).

The EIS must be *impartial* and must inform decision makers of alternatives and mitigation measures that avoid or minimize impacts of a proposed action. WAC 197-11-400(2). The EIS must not merely rationalize a predetermined outcome. WAC 197-11-402(10). ("EISs shall serve as the means of assessing the environmental impact of proposed agency action, rather than justifying decisions already made.") Rather, the EIS must include sufficient objective analysis to actually inform the agency's decision making process.

The EIS must be completed early enough to serve as a practical contribution to the decision making process. WAC 197-11-406 ("The statement shall be prepared early enough so it can serve practically as an important contribution to the decision making process and will not be used to rationalize or justify decisions already made."); *see also King County v. Boundary*

Review Board, 122 Wn.2d 648, 666, 860 P.2d 1024 (1993); *Barrie v. Kitsap County*, 93 Wn.2d 843, 854, 613 P.2d 1148 (1980); *Mentor v. Kitsap County*, 22 Wn.App. 285, 291, 588 P.2d 1226 (1978).

For projects with potentially significant or serious impacts, SEPA requires the same hard look that NEPA does. "The level of detail shall be commensurate with the importance of the impact," and in the face of any scientific uncertainty, the EIS must disclose the uncertainty and analyze the worst case scenario and the likelihood of its occurrence. WAC 197-11-402(2) and 197-11-080(2), (3).

DISCUSSION

I. The DEIS is Improperly Designed so that the Applicant's Private Economic Interests Unlawfully Dictate the Purpose, Need, Alternatives, and Eventual Outcome for the Proposed Action.

A. The Purpose and Need Statement in the DEIS is Being Improperly Driven by the Applicant's Private Economic Interests.

NEPA requires federal agencies to "rigorously explore and objectively evaluate all reasonable alternatives" to a proposed action. 40 C.F.R. § 1502.14(a). In order to do so, the agency must first reasonably and objectively define the purpose and need of a proposed action. *See Simmons v. United States Army Corps of Eng'rs*, 120 F.3d 664, 666 (7th Cir. 1997) (citing *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 195–96 (D.C. Cir. 1991)). The chosen statement of purpose and need effectively dictates the range of alternatives evaluate in an EIS. *Id.*

"[A]n agency cannot define its objectives in unreasonably narrow terms." *City of Carmel-By-The-Sea v. United States Dep't of Transp.*, 123 F. 3d 1142, 155 (9th Cir. 1997). "An agency may not define the objectives of its action in terms so unreasonably narrow that only one alternative . . . would accomplish the goals of the agency's action, and the EIS would become a

foreordained formality. *Nat'l Parks & Conservation Ass'n v. Bureau of Land Mgmt.*, 606 F.3d 1058, 1070 (9th Cir. 2010). Moreover, an agency may not allow the economic needs and goals of a private applicant to define the purpose and need, and hence the inevitable outcome, of an EIS. *Id.*

Unfortunately, that is exactly what is happening with this EIS. The DEIS lists the applicant's "needs," including the "business needs of the applicant" (such as "diversifying the holdings" of the Applicant) as stated needs for the project, and lists no agency-defined objectives or needs other than complying with applicable laws. The DEIS fails to even acknowledge that the agencies have no obligation or responsibility whatsoever to meet the applicant's needs or desires. As a result, the Applicant-identified needs are defining and driving the characteristics of this project and the alternatives thereto. This approach is inappropriate and unlawful.

Interestingly, some of the Applicant-identified needs are suspect. For instance, the Applicant identifies a need for utilities in Washington State to provide more alternative energy to their customers. DEIS at 1-4–1-6. But nowhere has the Applicant specified or publicly committed to sell the electricity from this project within Washington State. As it stands, well over half of all the wind energy produced in Washington and Oregon is currently being sent to California. If a similar fate occurs with the electricity from the Whistling Ridge project, then the Washington state requirements for alternative energy are wholly irrelevant to the project. The applicant cannot have it both ways. It cannot assert that meeting Washington state renewable portfolio standards is a need for the project, and yet refuse to commit energy from this project to remain in Washington state.

The DEIS repeatedly states or implies that the project would reliably produce between 70 MW and 75 MW of energy. *See, e.g.*, DEIS at I-9, 3-90, 3-271. The DEIS significantly

overvalues the generating potential of the project. Wind energy facilities cannot continually generate energy at their rated capacity. Generally, wind energy facilities generate energy at 30% of capacity. So for this project, the actual energy output would be only 21 MW. Every assertion or implication in the DEIS that the Whistling Ridge project would produce 70 or 75 MW of energy must be corrected to reflect the likely actual production of the facility. This correction must also be reflected in the purported need to produce at least 70 MW of energy for the project to be marketable. In any event, the facility would likely deliver 21 MW of energy to the grid.

Further, the Applicant's purpose and need statement appears to be defined only in terms of conveying power from a wind energy generation facility. This purpose and need is too narrowly limited, and avoids the question of whether there truly is a need for a wind energy project. As a result, the purpose and need statement improperly limits the alternatives considered by the agencies.

As in the *National Parks & Conservation Association* case, the private economic interests of the Applicant are the driving force behind the purpose and need statement, and thus behind the entire DEIS. The narrowly drawn statement unreasonably constrains the possible range of alternatives, because it excludes alternatives that fail to meet the Applicant's specific private objectives, which are to build a wind energy project. The result of such a narrowly driven statement led to only two alternatives to be considered: the proposed action (authorizing construction and operation of the proposed Whistling Ridge Entergy Project and associated components) and the No Action Alternative (not authorizing construction and operation of the proposed project). This extremely narrow range of alternatives is unreasonable, and thus, violates NEPA.

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B. The Stated Purposes Fail to Acknowledge EFSEC's Duty to Protect State or Local Governmental or Community Interests.

One of EFSEC's mandates is to "protect state or local governmental or community interests affected by the construction or operation of the energy facility." WAC 463-64-020. Any site certification agreement must contain conditions to meet this mandate. *Id.*

The DEIS fails to even mention this mandate, let alone apply it. This mandate should be expressly included in the stated purpose and need for action on page 1-3 of the EIS, and should be applied and reflected throughout the DEIS.

C. The Range of Alternatives Considered is Inadequate.

The DEIS discusses only the Proposed Action Alternative (the proposed project) and the No Action Alternative. Such a truncated alternatives analysis violates the agencies' duties under NEPA and SEPA to fully review all reasonable alternatives.

"The purpose of NEPA is to require disclosure of relevant environmental considerations that were given a 'hard look' by the agency, and thereby to permit informed public comment on proposed action and any choices or alternatives that might be pursued with less environmental harm." *Te-Moak Tribe of Western Shoshone of Nevada v. United States Dep't of the Interior*, --- F.3d ---, 2010 WL 2431001 (9th Cir. 2010) (quoting *Lands Council v. Powell*, 395 F.3d 1019, 1027 (9th Cir.2005)); *see also* 42 U.S.C. § 4332(E) (requiring agencies to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources"). Agencies are required to consider alternatives in an EIS and must give full and meaningful consideration to all reasonable alternatives. *Id.; see also* 40 C.F.R. § 1508.9(b). "The existence of a viable but unexamined alternative renders an environmental impact statement inadequate." *Id.* (citing *Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1519 (9th Cir.1992) (quoting *Citizens for*

a Better Henderson v. Hodel, 768 F.2d 1051, 1057 (9th Cir.1985)).

SEPA also requires an EIS to evaluate alternatives. RCW 43.21C.030(2)(c)(i). The applicable guidelines are found at WAC 197-11-440(5). An alternative considered for purposes of an EIS need not be certain or uncontested, it must only be reasonable. *King County v. Central Puget Sound Growth Management Hearings Bd*. 138 Wn.2d 161, 184-85, 979 P.2d 374, 385 (1999). A reasonable alternative is one that could feasibly attain or approximate a proposal's objectives at a lower cost to the environment. *Id.; see also* WAC 197-11-440(5)(b).

According to the applicable federal regulations, an EIS "shall inform decision-makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment." 40 C.F.R. § 1502.1. CEQ clarified the meaning of this requirement in its "Forty Most Asked Questions" policy guidance by defining "reasonable alternatives" as including "those that are *practical or feasible* from the technical and economic standpoint and using common sense, rather than simply *desirable* from the standpoint of the applicant." Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, 46 Fed. Reg. 18,026 (Mar. 23, 1981) (emphasis in original).

When selecting alternatives, an agency may *consider* an applicant's desires, but is not by any means bound or limited by them. It is not appropriate for an agency to rely on the "self-serving statements of the project applicants." *Southern Utah Wilderness Alliance v. Norton*, 237 F. Supp. 2d 48, 53 (D.D.C. 2002). Instead, the action agency must "to the fullest extent possible . . . study, develop and describe appropriate alternatives to recommended courses of action in any proposal which includes unresolved conflicts concerning alternative uses of available resources." *Id*. at 54 (citing 42 U.S.C. § 4332(2)(E)). Moreover, "[o]ther factors [other than the applicant's desires] to be developed during the scoping process—comments received from the public, other

government agencies and institutions, and development of the agency's own environmental data—should certainly be incorporated into the decision of which alternatives to seriously evaluate in the EIS." CEQ, Guidance Regarding NEPA Regulations, 48 Fed. Reg. 34,263, 34,267 (July 28, 1983).

Again, the DEIS analyzes the impacts of only two alternatives: 1) the proposed project, and 2) the no action alternative. These options advance the Applicant's goals, rather than the agencies' goals, to the exclusion of other reasonable alternatives. The DEIS is fatally flawed in its failure to consider an adequate range of reasonable alternatives. *See Muckleshoot Indian Tribe v. USFS*, 177 F.3d 800, 913 (9th Cir. 1999) (agency failed to consider an adequate range of alternatives when an EIS considered only a no action alternative along with two "virtually identical" action alternatives).

Various other alternatives should have been considered. First, at page 1-13 of the DEIS, the BPA did not consider any alternate locations for the wind turbine project other than those owned by the Applicant. Likewise, alternatives for interconnecting the wind project with transmission lines off of the project site were eliminated.

Indeed, under NEPA, the EIS may even have to look at alternatives over which the applicant has no control. *NRDC v. Morton*, 458 F.2d 827, 835 (D.C. Cir. 1972); *NWF v. NMFS*, 235 F. Supp.2d 1143 (W.D. Wash. 2002). Further, it is irrelevant whether an applicant already owns alternative sites for the purposes of NEPA review: "The fact that this applicant does not now own an alternative site is only marginally relevant (if it is relevant at all) to whether feasible alternatives exist to the applicant's proposal." *Van Abbema v. Fornell*, 807 F.2d 633, 638 (7th Cir. 1986).

As stated in the *Van Abbema* case, other alternatives for a project cannot be eliminated as non-feasible simply because the Applicant does not now own the site where an alternative location may exist. Here, SDS and Broughton Lumber own tens of thousands of acres of land in Oregon and Washington that could potentially be available for energy production purposes. The EIS fails to consider those lands, and fails to consider the possibility of applicant purchasing lands in other locations, such as east of the National Scenic Area, for an energy facility.

Similarly, SEPA also requires a discussion of alternate development sites for a proposed project in order to have an adequate discussion of reasonable alternatives. *See Barrie v. Kitsap County*, 93 Wn.2d 843, 855, 613 P.2d 11481155 (1980) (EIS was inadequate because it looked only at the use of the applicant's private property for siting a shopping center, and failed to discuss alternative development sites).

Here, alternate locations could provide comparable energy output. This approach would be consistent with the BPA stated goals of acting consistently with its environmental and social responsibilities and providing for cost and administrative efficiency. Surely other sites with far less impacts could easily be located. Not far to the east of this project site, thousands of wind turbines have been constructed recently, the vast majority of which pose far less resource impacts than the Whistling Ridge site.

Another potential site is immediately north of the proposed project site, on DNR lands. In fact, this property has been designated by WRE as "Phase 2" of the Whistling Ridge project. Although DNR has indefinitely placed on hold consideration of WRE's request for a wind power lease of this property, that does not mean use of the property is forever out of the question. In fact, recent emails by WRE representatives, obtained by Skamania County residents Keith Brown and Teresa Robbins in response to a public records request, indicate that WRE still

wishes to use the DNR property for wind energy. The DEIS fails to analyze the possibility of siting wind turbines on this property rather than on the SDS and Broughton Lumber land.

Second, the BPA did not consider alternate configurations (with fewer wind turbines and/or in different locations) for the project. On page 1-14, the DEIS states that "the project must be capable of producing a minimum of 70 MW" and that the project size "was selected to *optimize* . . . economic feasibility" (emphasis added). There are no financial data or projections provided to support this claim. Moreover, the agencies eliminated any alternatives that would have considered a smaller generation facility, for instance in order to address potential environmental impacts, solely in an effort to "optimize"[2] the applicant's economic wishes. Nor did the agency consider alternative locations for individual turbines that would reduce their impacts. This approach is unlawful and violates the agencies' legal mandates.

Third, the BPA did not consider other potential renewable energy sources in the DEIS. A dismissal of renewable energy sources other than wind energy, such as distributed generation, does not comport with the agencies' stated goal of acting consistently with their environmental and social responsibilities.

Fourth, no conservation alternatives were considered to eliminate the stated "need" for this 70 MW of installed capacity. Conservation alternatives, such as demand response technologies, also should have been included in order to meet the agencies' goals of promoting their environmental and social responsibilities.

Fifth, another reasonable alternative is one that analyzes and considers the future development of the proposal. WAC 197-11-440(5)(c) states that the EIS shall:

> (vii) Discuss the benefits and disadvantages of reserving for some future time the implementation of the proposal, as compared with possible approval at this time. The

[2] The *Webster's Dictionary* definition of "optimize" is "to make as effective, perfect, or useful as possible."

> agency perspective should be that each generation is, in effect, a trustee of the environment for succeeding generations. Particular attention should be given to the possibility of foreclosing future options by implementing the proposal.

The DEIS fails to comply with this requirement, because it fails to consider the possibility of delaying the development of wind energy until a later date, perhaps at a time when the energy grid will be more equipped to handle the addition of new wind energy sources.

The above alternatives were either eliminated from the study, or not considered at all, because the Applicant's economic needs, rather than the stated goals of the agencies, dictated the results of this DEIS. In effect, the agencies are violating their duties to consider all reasonable alternatives.

D. The Applicant and its Consultants Appear to Have Played an Improper Role in the Drafting of the DEIS, Leading to a Biased and Result-Oriented Document.

The agencies' ability to prepare an EIS that would provide a balanced and objective analysis, leading to a decision that addresses the interests of the general community and not just the Applicant, have become further compromised by an apparent decision to allow the same consultants who prepared the application on behalf of the Applicant to also prepare analytical content in the DEIS.[3]

Originally, the agencies stated that the Applicant and its consultants would be preparing the EIS. However, because the public objected to this arrangement and pointed out that it would violate NEPA, the agencies made the following announcement in the DEIS May 21, 2010 cover letter:

> While EFSEC and BPA are the entities that have prepared the Draft EIS, these agencies have worked collaboratively with Whistling Ridge Energy LLC to

[3] These consultants include employees of URS Corporation, West Inc., and others. Although several consultants who prepared the application also are listed in section 6 of the DEIS as "preparers" of the DEIS, none of them noted their role in preparing the application on their disclosure statements in Appendix F.

> obtain necessary information about the project and its potential impacts for the EIS. Initially, EFSEC had intended to allow Whistling Ridge Energy LLC to prepare the EIS, as allowed by SEPA; however, after public concern was raised, EFSEC and BPA decided that the lead agencies would be directly responsible for preparing the EIS. Accordingly, we have used environmental information provided by Whistling Ridge Energy LLC and its consultants in the EIS as appropriate. All such information has been independently evaluated and reviewed for accuracy by the lead agencies, as well as by an independent, third party consultant retained by EFSEC.

This statement invites more questions than it answers. What was the exact nature and extent of the involvement of WRE and its consultants in the preparation the DEIS? Did they simply supply environmental "information," as stated in the cover letter, or did they supply analysis, findings, and/or conclusions for the DEIS? Why does the DEIS adopt lengthy passages from the application verbatim or practically verbatim? If WRE and/or its consultants were allowed to write portions of the DEIS, will the agencies identify which portions? Were the applicant and/or its consultant allowed to review any portions of the EIS before it was made final, and if so, did they make any changes to it?

There is a major difference between the applicant's consultants supplying the agencies with information and data (such as species survey data, photographs, coordinates for turbine locations, etc.) and the applicant's consultants drafting analysis and conclusions to be inserted into the DEIS document. Unfortunately, the DEIS cover letter does not satisfactorily explain which scenario occurred, but the extremely biased nature of the DEIS in favor of the project strongly implies an active role by the Applicant's consultants in its preparation.

An attached May 28, 2010 email string further calls into question whether EFSEC and BPA staff actually wrote the content of the EIS, or allowed the applicant's consultants to write it. The emails show that a landscape architect with the U.S. Forest Service telephoned the EFSEC Site Manager "express[ing] concerns about the quality of the [visual resource] analysis." The

Forest Service employee asked EFSEC "who did the analysis," "what their qualifications were," and "whether or not a Landscape Architect was consulted during development of this section." Apparently not knowing the answer to these questions, the EFSEC Site Manager appears to have referred the questions to the Project Manager with URS Corporation, the Applicant's lead consultants.

As with the agencies' DEIS cover letter, this email string poses a number of questions. If EFSEC and BPA prepared the DEIS, why does it appear that EFSEC had to ask the Applicant's consultants who wrote it? If the agencies were directly responsible for the content of the EIS, why did they not know whether a landscape architect participated in its drafting? And as the Forest Service asked, who in fact "did the analysis," and what were their qualifications?

On the face of the email and the DEIS itself, it certainly appears as if the same people who wrote the application (*i.e.*, the Applicant's consultants) were also allowed to prepare the analysis reviewing the application. In fact, it appears that the entire scenic resources analysis section of the application, including all analysis, findings, and conclusions, was simply lifted from the application and inserted verbatim into the DEIS. Although the agencies claim to have "prepared" the content of the DEIS and independently reviewed and verified any information from the applicant, by all outward appearances this did not occur—at least with major sections of the DEIS. Rather, it appears that the Applicant's consultants were allowed to write major portions of the DEIS. If so, then the Applicant has been allowed to exert undue influence over the content of the DEIS. The predictable outcome is a DEIS that, in effect, serves as an extremely biased and result-oriented prospectus for the proposed project exactly as proposed by the Applicant, instead of the searching and balanced decision-making document required by NEPA and SEPA.

NEPA case law and guidance are clear that an applicant, such as Whistling Ridge Energy, should not be allowed to influence the analytical content of an EIS. *See, e.g., Sierra Club v. Sigler*, 695 F.2d 957, 962 n.3 (5th Cir. 1983) (expressing serious concern over role of private firm in preparation of EIS). An EIS must be an entirely objective analysis intended to aid the decision maker and the public in understanding the consequences of an agency decision. Thus, it is standard practice for action agencies to ensure that applicants for federal action are insulated from all aspects of EIS preparation other than providing information.

Any arrangement that allows the very same consultants who drafted the application to also draft analytical content for the DEIS is improper and cannot be allowed to continue. If in fact the agencies have been relying on the Applicant's consultants (rather than agency employees) to draft analytical content for the DEIS, then the agencies should immediately withdraw the DEIS, and should either retain new consultants unaffiliated with the applicants to prepare a revised DEIS or should ensure that a revised DEIS is drafted by disinterested agency employees. The Applicant and its consultants must not be allowed to continue to play a direct and significant role in the preparation of factual and legal conclusions in the EIS. Such a role is improper and invalidates the DEIS as the basis for further decision-making.

The agencies also state that they have hired a third-party consultant who has been charged with independently verifying the content of the DEIS. However, it is ultimately the agencies' responsibility, and not that of any consultants, to independently verify the DEIS's content. The agencies are "responsible for the independent verification and use of the data, evaluation of the environmental issues, and . . . the scope and content of the environmental assessment." *Save Our Wetlands v. Sands*, 711 F.2d 634, 642 (5th Cir. 1983). Given the

extremely biased nature of this document, Friends questions whether the agencies are meeting this responsibility.

II. The DEIS Does not Demonstrate that EFSEC and BPA Consulted with Agencies with Expertise in the Resources that Would be Affected by the Whistling Ridge Energy Project.

EFSEC must consult with agencies with expertise in the resources that may be impacted by the proposed development. RCW 43.21C.030(2)(d); WAC 197-11-408(2)(a). SEPA requires that the agency "utilize a systematic, interdisciplinary approach" to environmental review. RCW 43.21C030(2)(A). EFSEC's SEPA regulations also require that EFSEC works with interested agencies throughout the preparation of the DEIS. WAC 463-47-140(5).

Similarly, NEPA requires that BPA request comments from federal agencies with special expertise in the resources that would be affected by the proposed development. 40 C.F.R. § 1503.1(a)(1). NEPA requires that the BPA seek comments from state agencies and tribal governments. 40 C.F.R. §1503.1(a)(2). The NEPA regulations also requires that federal agencies respond to requests for comments: "Federal agencies with jurisdiction by law or special expertise with respect to any environmental impact involved and agencies which are authorized to develop and enforce environmental standards shall comment on statements within their jurisdiction, expertise, or authority." 40 C.F.R. § 1503.2. NEPA regulations also require that BPA prepare the DEIS "concurrently with and integrated with" required consultations. 40 C.F.R. § 1502.25(a).

Despite these clear, abundantly sensible requirements, the DEIS fails to show consultation with agencies that have expertise in the resources that would be impacted by the proposal. In fact, comments from expert agencies conveying substantial concerns about significant adverse impacts from the proposal were summarily ignored. These agencies were not

even listed under the "Environmental Consultation" section of the DEIS, nor in the Distribution List for receiving copies of the DEIS after they commented. *See* DEIS at §§ 4.0, 5.0.

EFSEC and BPA are unambiguously required to seek comments from agencies with expertise in the resources that would be impacted. Federal agencies with special expertise have a nondiscretionary obligation to respond to those requests with comments. Agencies with expertise in the resources that would be affected include the USDA Forest Service, which administers portions of the Columbia River Gorge National Scenic Area and the Lower White Salmon Wild and Scenic River Area, and the National Park Service, which administers the Lewis & Clark National Historic Trail, the Oregon Pioneer National Historic Trail, and the newly designated Ice Age Floods National Geologic Trail. As administrators of these areas, both agencies have expertise in evaluating impacts to scenic resources and historically important viewsheds.

Both of these agencies submitted comments during the scoping process. Both comments pointed out that the project would cause significant adverse impacts to scenic resources and recommended mitigation measures, including removal of turbines from Scenic Area viewsheds as seen from designated key viewing areas. These comments have been summarily ignored. The DEIS demonstrates an utter failure of the agencies to follow through with the requirements of NEPA and SEPA, as well as the agencies' duties to protect environmental values and surrounding communities, by responding to these expert agencies' comments.

The scenic resources that would be affected by the proposal are of national significance. This warrants the utmost care in consulting with expert agencies to ensure that the decision-making agencies have impartial and objective analysis of the likely impacts to the environment.

The Forest Service has inventoried and ranked the viewshed that would be directly affected by this project, and has the expertise to measure the impacts of the proposal on this

landscape. Thus, the Forest Service's inventories and conclusions are directly relevant to the scenic resource impacts analysis for the project. Portions of the viewsheds that would be affected have been identified by the Forest Service as having the highest rankings for scenic values. This includes "outstanding" scenic diversity, "primary" landscape significance, and "critical" landscape sensitivity. The Forest Service staff has special expertise in evaluating how the development would impact these landscapes, and must be consulted.

It is of paramount importance that both EFSEC and the BPA address the Forest Service's scoping comments and seek further clarification from the Forest Service regarding the likely project impacts. Given the level of study already performed by the Forest Service with respect to the affected scenic resources, the DEIS does a disservice by not incorporating that information into the environmental review.

Swift v. Island County established the importance of taking expert agency comments into consideration during SEPA review. *Swift v. Island County*, 87 Wash. 2d 348, 552 P.2d 175 (1976) (en banc). In *Swift* the court ruled that an Island County determination of non-significance violated SEPA because the finding conflicted with the comments of other agencies and experts. The agencies and experts included "the United States Department of the Interior, Fish and Wildlife Service; State Parks and Recreation Commission; State Department of Game; State Department of Ecology; the Central Whidbey Island Historic Preservation Advisory Committee" and an authority on birds. 87 Wn. 2d at 355. Just as Island County ignored expert agency comments in *Swift*, EFSEC is completely ignoring expert agency comments in the present matter.

EFSEC and the BPA should also address whether expert agencies have altered or withheld comments due to pressure from elected officials. Documents obtained through public

records requests and submitted by Keith Brown and Teresa Robbins have uncovered e-mail chains evidencing political interference and muzzling of agency experts at the direct request of the applicant. This episode underscores EFSEC's and BPA's legal and moral obligations to ensure that thorough and complete expert agency consultation is obtained regardless of the political connections of the proponent.

The Applicant has asserted that the expert agencies are somehow attempting to improperly assert control over private land outside their jurisdictions. This is entirely inaccurate. Simply put, the agencies have expertise in the resources that would be affected by the proposed development, and therefore must be consulted pursuant to NEPA and SEPA. The consulting agencies simply help the action agencies understand and evaluate the harm to the environment that would result from this proposal. The Applicant apparently fundamentally misunderstands the role of consulting agencies under NEPA and SEPA.

The National Park Service's interest in the affected resources is evidenced by the Management Plan for the Lewis and Clark National Scenic Trail and recent mission statements that accompanied notices that the Park Service will be revising the Lewis and Clark Trail Management Plan: "Certain segments of the Lewis and Clark National Historic Trail *retain characteristics and a sense of place as seen and experienced by the original expedition and continue to provide opportunities for similar experiences today*." Lewis and Clark Trail Master Planning Newsletter (July 27, 2010) (emphasis added). "Today the Missouri, Clearwater, and Columbia Rivers, their watersheds, and the overland routes across the Rocky Mountains have changed, however, *the natural resources and ecosystems that remain intact are fundamental to the experience of this Trail. These complex resources are critical to providing the context within which modern visitors experience the Trail and the story of Lewis and Clark.*" Lewis and Clark

Trail Master Planning Newsletter (July 27, 2010). The Park Service certainly has the mandate and the expertise to comment on the likely impacts of the project.

EFSEC and BPA should also actively solicit comments from the Oregon Department of Transportation and the Oregon Parks and Recreation Department. These agencies manage the Historic Columbia River Highway, which is listed on the National Register of Historic Places as a National Historic District. The proposal would adversely affect views from the Historic Highway, harming the scenic, recreational, and historical values of the resource. These agencies are also coordinating plans to restore abandoned sections of the Historic Highway as part of the "Milepost 2016 Reconnection Project," which furthers the goals of the Historic Columbia River Highway Master Plan, portions of which are attached hereto. The impacts to these efforts, in terms of impacts to historical interpretation opportunities and scenic resources, must be acknowledged and consulted on.

EFSEC and the BPA must also consult with the Columbia River Gorge Commission, which manages the landscape and regulates land use and development in the immediate vicinity of the project. The DEIS mentions the Columbia River Gorge National Scenic Area Act in the "Environmental Consultation" section, but does not mention consulting with the Gorge Commission. DEIS at 4-9, § 4.11. This section should be revised to accurately reflect the regulatory framework for the National Scenic Area. This section states that the General Management Area of the Scenic Area includes a mixture of "farming, logging, residential, and cattle grazing" land uses. DEIS at 4-9. The section should be revised to state that the General Management Area also includes public recreation and commercial recreation uses along with some of the most sensitive open space areas. EFSEC and the BPA must also consult with the Gorge Commission regarding any regulatory review that would be required to ensure compliance

with Scenic Area Act standards for the portion of the project located within the National Scenic Area—namely, the proposed haul route.

The DEIS at 3-141 and 3-194 also quotes 16 USC § 544*o*(a)(10), which states that the Scenic Area Act does not, "of itself," authorize the creation of any buffer or protective perimeter. This provision does not prohibit expert agencies from using the National Scenic Area's resource inventories and regulatory standards as tools for measuring impacts to the environment.

Agencies with expertise regarding wildlife, including the U.S. Fish and Wildlife Service and Washington State Department of Fish and Wildlife, must be consulted. And the Washington Department of Natural Resources must be consulted regarding compliance with the Washington Forest Practices Act, which regulates the conversion of forested land to non-forestry uses. The Washington DNR must also be consulted regarding the feasibility of alternative siting locations on public land to the north of the current project area.

III. The DEIS Misquotes and Misrepresents the Language and Meaning of the Columbia River Gorge National Scenic Area Act.

The DEIS attempts to rewrite the Columbia River Gorge National Scenic Area Act to effect a dramatically different purpose than intended by Congress. This misrepresentation, if it goes uncorrected, would dramatically hinder EFSEC's and the BPA's ability to protect the public from adverse impacts to important local, state, and national resources. The DEIS includes the following passage that purports to quote the Columbia River Gorge National Scenic Area Act:

> The Act states that "*no protective perimeters or buffer zones shall be established around the scenic area or each special management area. Activities or uses inconsistent with the management directives for the scenic area or special management areas can be seen or heard from these areas shall not, of itself, preclude such activities or uses up to the boundaries of the scenic area or special management areas*" (16 U.S.C. § 544O(a)(10)).

DEIS at 3-194 (emphasis in original).

The above language, reprinted verbatim from the DEIS, seriously misquotes and misrepresents the Act. The actual language in the Act is as follows:

(a) *Nothing in this Act shall . . .*

> (10) Establish protective perimeters or buffer zones around the scenic area or each special management area. The fact that activities or uses inconsistent with the management directives for the scenic area or special management areas can be seen or heard from these areas shall not, of itself, preclude such activities or uses up to the boundaries of the scenic area or special management areas.

16 U.S.C. § 544*o*(a)(10) (emphasis added).

The first sentence of the misquoted Act in the DEIS completely changes the meaning of the statute. The intent to misrepresent is clear. The difference in the meaning of the true wording versus the quoted wording is significant.

The language in 16 U.S.C. § 544*o*(a)(10) provides that *nothing in the Scenic Area Act* shall establish protective perimeters or buffer zones. It does not, as the DEIS language states, outright prohibit protective buffers, for example under operation of some other local, state, or federal law. EFSEC and the BPA must apply numerous other laws in their decision-making, and must protect affected resources and communities. The misquoted language in the DEIS implies that Congress mandated that some other law or factor, independent of the Scenic Area Act, could not result in the protection of lands adjacent to the Scenic Area. This is absolutely incorrect. While the Scenic Area Act does not in and of itself impose buffers, neither does it prevent them under operation of other laws.

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IV. The DEIS Prematurely and Erroneously Concludes That the Project Would Be Consistent With the Applicable Land Use Regulations.

A. The Land Use Consistency Determination in the DEIS is Premature.

The DEIS concludes that "the proposed project would be consistent with the applicable land use regulations." DEIS 3-152. The DEIS further states that "the project would be consistent with the Comprehensive Plan vision and the Conservancy designation in that it would conserve and manage existing natural forest and wind resources to maintain a sustained yield and utilization of both." *Id.* These and all other statements in the DEIS regarding consistency with applicable land use regulations are premature, because EFSEC has not yet concluded its land use consistency process nor issued a determination as to whether the proposed project is consistent and in conformance with the applicable land use plans and zoning ordinances through the process required by WAC 463-26-110 and RCW 80.50.090(2). The DEIS erroneously contains consistency determinations long before the issue of consistency will be adjudicated in the land use process before EFSEC. EFSEC has effectively prejudged the consistency results by including its premature conclusions in the DEIS.

The DEIS should be revised to remove all conclusions as to land use consistency. Instead, the DEIS should state what the potentially applicable regulations are, and then state that EFSEC will reach a conclusion on consistency as part of its adjudicative process, and that the BPA will decide whether it concurs with that determination. At most, the DEIS could summarize the different arguments that have been made to date regarding the applicable regulations. But prejudging consistency long before the consistency process is complete is inappropriate and a violation of Friends' right to a fair and impartial adjudicative hearing.

Contrary to the conclusions in the DEIS, the project is *not* consistent with applicable land use requirements. Friends will continue to address, via EFSEC's adjudicative process, the many

reasons why the project is not consistent with the applicable land use requirements. Rather than restate Friends' arguments at length in the instant comments, Friends relies on its previous submissions to EFSEC, as well as its briefing to the Skamania County Hearing Examiner in the prior administrative appeal involving Skamania County's proposed (now abandoned) energy zoning amendments (County File No. SEP-08-35),[4] except as modified or supplemented below. Friends also adopts and reiterates all arguments of Save Our Scenic Area regarding land use consistency.

B. The Application and DEIS are Inconsistent and Incomplete Regarding the Proposed Haul Route through the National Scenic Area.

The Application and DEIS are internally inconsistent and incomplete regarding the proposed haul route through the National Scenic Area. The specialized trucks for hauling wind energy turbine components for this project are both massive and heavy; these trucks may have trouble navigating certain intersections and bridges. The application and DEIS do not clearly establish which route is proposed through the National Scenic Area, and whether that route would entail any road construction or ground-disturbing activities within the General Management Area of the National Scenic Area. The information that *has* been made available about the haul route is internally inconsistent and does not comply with EFSEC's rules for a complete application.

EFSEC rules require, among other items, the application to include information about traffic and transportation impacts:

> (1) Transportation systems. The application shall identify all permanent transportation facilities impacted by the construction and operation of the energy facilities, the nature of the impacts and the methods to mitigate impacts. Such impact identification, description, and mitigation shall, at least, take into account:

[4] Copies of all the relevant documents from both proceedings are attached hereto as exhibits.

* * *

(b) Access routes for moving heavy loads, construction materials, or equipment;

* * *

(2) Vehicular traffic. The application shall describe existing roads, estimate volume, types, and routes of vehicular traffic which will arise from construction and operation of the facility. The applicant shall indicate the applicable standards to be utilized in improving existing roads and in constructing new permanent or temporary roads or access, and shall indicate the final disposition of new roads or access and identify who will maintain them.

* * *

WAC 463-60-372.

The original application proposed two alternative haul routes through the National Scenic Area, Routes 1 and 2. The amended application adds a third alternative haul route, Route 3. Amended Application at 2.19-3. The DEIS adopts Route 3 as the haul route for the project. DEIS at 1-12.

At page 1-16, the DEIS states that both Routes 1 and 2 have been "eliminated as . . . construction roadway access alternative[s]." However, at page 3-172, the DEIS states that Route 1 (the Ausplund Road Route) "would be used to access the [project site] for construction and maintenance." The agencies need to address this inconsistency, and clarify the extent to which Routes 1 or 2 would be used, if at all, for this project.

Moreover, a number of unanswered questions remain regarding Route 3, and specifically whether this route would involve any road construction or ground-disturbing activities within the General Management Area of the National Scenic Area. This route includes an aging bridge on Cook-Underwood Road across the Little White Salmon River and within the GMA. In the attached November 6, 2009 letter submitted to the Gorge Commission, WRE freely admits that "[t]he County has not yet determined whether any modifications or repair of [this] bridge would

be required" to enable the bridge to be used for the haul route. Furthermore, there is no evidence in the application or in the record, such as engineering schematics or a discussion of the bridge's load-bearing capacity, to establish whether construction work on the bridge will be necessary for this project.

In addition, an intersection of particular concern is the eastern intersection of Cook-Underwood Road and SR-14. WRE's initial application states that road construction, including road widening, "would be required" at this intersection in order to provide a sufficient turning radius for oversized trucks hauling wind turbine components. Original Application at 4.3-13. WRE provided specific numbers for the necessary width of the inside turning radius. *Id.* According to WRE, "[w]idening would include removal of guardrail and an engineered fill section on the inside of the turn, and an engineered fill section and a possible embankment cut section." *Id.* In addition, "[t]he engineered fill and embankment cut sections . . . would require an all-weather driving surface." *Id.* Finally, "[r]ight of way ownership and easement determination would be required." *Id.*

Then, after Appellants filed an appeal with the Gorge Commission of the County's decision on the initial application, WRE abruptly made a 180-degree reversal on whether road construction is required at this intersection. Even though WRE still proposes to use this intersection as part of its preferred haul route, WRE in the amended application has deleted all language discussing the necessary road work and replaced it with language summarily concluding that no road construction will be necessary along the haul route. Amended Application at 4.3-14. When asked to explain the rationale behind these discrepancies, WRE merely stated in its November 6, 2009 letter that "[n]o roadway improvements *have been identified* as being needed at either the west or east intersection of SR-14 and Cook-Underwood

Road." (emphasis added). This unhelpful statement completely ignores, and is in fact contradicted by, WRE's previous statements that road improvements at the east intersection "*would be required*." Original Application at 4.3-7 (emphasis added).

The western intersection of Cook-Underwood Road and State Route 14 is also important. The Applicant has proposed to use this intersection as part of the haul route, but has also not shown that road improvements at this intersection would not be necessary.

These distinctions are important, because if this project does in fact involve road construction or ground-disturbing activities within the GMA, such activities must be reviewed by Skamania County under the Scenic Area laws and rules for whether they are allowed and for the protection of resources. SCC § 22.06.010.

The agencies need to require better information about the proposed haul route, and resolve whether any road work would in fact be necessary. If so, Scenic Area review and a decision by Skamania County will be required.

V. The Environmental Impact Analysis in the DEIS is Seriously Deficient.

A. The DEIS Fails to Give Adequate Consideration to Cumulative Effects.

The consideration of cumulative effects in the DEIS is inadequate. A cumulative impact is the "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions." 40 C.F.R. § 1508.7. NEPA requires that an EIS assess cumulative impacts in sufficient detail to be "useful to a decision maker in deciding whether, or how, to alter the program to lessen cumulative impacts." *City of Carmel-By-The-Sea v. U.S. Dep't. of Transp.*, 123 F.3d 1142, 1160 (9th Cir. 1997). The cumulative impacts analysis for a proposed project must examine past, present, and proposed/reasonably foreseeable actions in the same area. 40 C.F.R. §§ 1508.7, 1508.25, 1508.27(b)(7); *Tomac v. Norton*, 433 F.3d 852, 864 (D.C. Cir. 2006).

Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. 40 C.F.R. § 1508.7. "To consider cumulative effects, some quantified or detailed information is required. Without such information, neither the courts nor the public, in reviewing [an action agency's] decisions, can be assured that the [agency] provided the hard look that it is required to provide." *Neighbors of Cuddy Mountain v. U.S. Forest Service*, 137 F.3d 1372, 1379 (9th Cir. 1998). The cumulative effects of the proposed action, combined with the cumulative effects of other proposed actions, must be described in detail. *Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 810 (9th Cir. 1999). Broad and general statements "devoid of specific, reasoned conclusions" are not sufficient; neither are one-sided cumulative impact statements. *Id*. at 811.

As an initial matter, the geographic scope used in the DEIS to examine cumulative impacts is internally inconsistent and arbitrary and capricious. On the very same page (1-36), the DEIS contains two different geographic standards for measuring cumulative impacts. First, under Existing Development, the DEIS properly sets the geographic scope for wind power development as extending from Cascade Locks to the intersection of I-84 and I-82. Then, on the very same page, under Reasonably Foreseeable Future Development, the DEIS arbitrarily limits itself to projects within 20 miles from the Whistling Ridge project site. This internal inconsistency is arbitrary. Many of the existing wind projects more than 20 miles away contribute to adverse cumulative effects in conjunction with the proposed Whistling Ridge project. For instance, these existing wind projects can be seen in same viewshed as the Whistling Ridge site, as viewed from locations within the Gifford Pinchot National Forest such as Little Huckleberry Mountain. The arbitrary limit of 20 miles also means that certain pending projects such as Windy Flats West, which may have similar impacts on the National Scenic Area to those

of Whistling Ridge, but which is 26 miles away, are being improperly excluded from the impacts analysis.

The attempt in the DEIS at identifying and evaluating the cumulative impacts is sorely lacking. The DEIS fails to consider adequately the past, present, and reasonably foreseeable future impacts of other projects in the area. First, the DEIS does not adequately catalogue or discuss the impacts of past projects on the area, as it is required to do under NEPA. *City of Carmel*, 123 F.3d at 1160. Rather, it arbitrarily limits itself to considering only other wind projects, and even then relies on a rough and incomplete list of existing wind projects that discusses generalities, without providing the information necessary to complete the reasoned analysis that NEPA requires. Second, the DEIS fails to catalogue or analyze the impact of numerous planned or ongoing development projects, including wind projects and other types of projects.

For example, the DEIS fails to consider the cumulative impacts of the proposal in relation to the following planned and ongoing projects:

- The DEIS, at pages I-36 and 3-265–266, relies only on a wind power map and list found at http://www.nwcouncil.org/maps/power/Default.asp. The map relied on by the DEIS is severely incomplete, missing multiple wind energy projects within the project study area, including but not limited to Windy Flats West, Windy Flats, Windy Point II, Miller Ranch, Hoctor Ridge, Imrie, Linden Ranch, Miller North, Windtricity, Harvest Wind, School Section, Golden Hills, Golden Hills Addition, Golden Hills 2, Golden Hills 3, Biglow Canyon 2, Biglow Canyon 3, Nook Wind, Star Point, Shepherds Flat, Shepherds Flats 2, Shepherds Flat 3, Shepherds Flat 4, Shepherds Flat 5, Pebble Springs, Willow Creek, Montague I,

Montague II, Condon Wind, Summit Ridge, Baseline, Saddle Butte, Echo Wind, and PáTu. The DEIS fails to consult multiple other maps and lists of wind projects in the region, let alone the documents pertaining to those projects such as environmental impact statements. As a result, the cumulative impacts of this project in conjunction with other wind projects in the region is grossly underestimated. Maps and lists of other wind projects can be found at http://www.klickitatcounty.org/planning/FilesHtml/windprojects.pdf, http://www.oregon.gov/ENERGY/SITING/review.shtml, and http://www.transmission.bpa.gov/PlanProj/Wind/documents/BPA_wind_map_2010.pdf and are being filed as Exhibits herewith.

- The applicant here, Whistling Ridge Energy, desires to construct an additional 35 turbines on DNR lands immediately adjacent to the north of this project. This project, known as "Saddleback" or "Whistling Ridge Phase II," has been placed on hold by the DNR, but that hold could be removed at any time. The DEIS states that "use of these lands for project turbines was rejected from further consideration." DEIS at 1-14. However, recent public records requests have uncovered new evidence that the use of DNR lands is still contemplated by WRE. Specifically, the attached April 9, 2010 email shows that WRE was evaluating whether a temporary FAA moratorium on certain wind projects would prohibit expansion onto the DNR lands. The DEIS fails to sufficiently address the likelihood of Phase II of this project going forward, and fails to address the cumulative impacts of expanding the scope of this project onto the adjacent land. All phases and portions of a project must be evaluated at the outset during

environmental review of the first phase. *See Merkel v. Port of Brownsville*, 8 Wn. App. 844, 850–51, 509 P. 2d 390, 395 (1973); *Indian Trail Property Owner's Ass'n v. City of Spokane*, 76 Wn. App. 430, 443, 886 P.2d 209 (Wn. App. 1994).

- The Broughton Lumber Company has proposed a 250-unit housing development and recreation resort at the site of its defunct lumber mill in Skamania County, Washington. The site is in the same viewshed as the proposed Whistling Ridge Project.
- A casino is proposed in Cascade Locks, Oregon. If built, it would induce unprecedented amounts of traffic through the National Scenic Area. The cumulative impacts of this project, including the high volumes of casino traffic in conjunction with the heavy and oversized load truck traffic potentially travelling along I-84 for the Whistling Ridge project, was not considered.
- Every year, multiple residential dwellings are approved in the same viewshed as the proposed Whistling Ridge Energy Project. This cumulative scenic impact is not even mentioned, let alone estimated, by the DEIS.
- The DEIS acknowledges that the footprint of the project is within working timber lands, but fails to discuss the cumulative impacts of clearcuting forest in conjunction with permanently converting forest land for industrial use. Washington DNR Forest Practice applications in the vicinity of the project include FPA 2702000, FPA 2702622, FPA 2702784, FPA 2702862, FPA 2703252, and FPA 2704427. The DEIS does not address the cumulative impacts of the massive clearcutting that has occurred or the impacts of those forest practices in conjunction with converting forest land to non-forest use.

- In addition to the forest practices in the immediate vicinity of the project, the DEIS must include evaluation of impacts of the project in conjunction with forest practices in the region. To date the northern spotted owl habitat conservation plan is not succeeding in recovering northern spotted owl populations. Since this project would permanently convert forest land within a Spotted Owl Special Emphasis Area (SOSEA) to non-forestry use, the DEIS must undertake additional analysis of how the industrialization of portions of the SOSEA will affect spotted owl populations within the entire SOSEA and the region.
- The Blue Bridge Pipeline has been proposed to be constructed in the vicinity of the project. This proposal is currently under review by the Federal Energy Regulatory Commission under Docket No. PF09-10-000. The project could involve permanent linear clearcuts in the vicinity of the project.
- Three towns in the Columbia River Gorge National Scenic Area have proposed expansions of their urban area boundaries into Scenic Area lands. These are Hood River, The Dalles, and Lyle. If approved, these urban expansions would result in population growth, more traffic, loss of farm land, forest land, open spaces, and likely adverse effects to scenic, natural, cultural and recreation resources.

These projects and others not analyzed in the DEIS will have cumulative impacts on environmental and socioeconomic factors. In order to adequately evaluate the impacts of the proposed project, the DEIS must consider these current projects. Failure to do so means that the DEIS lacks sufficient detail to allow a decision maker to meaningfully evaluate the full impacts of the proposed project or to decide how to alter the proposal to lessen cumulative effects.

Also, as explained in the attached expert analysis by Dr. Shawn Smallwood, the cumulative impacts analysis in section 3.14.3.5 of the DEIS is methodologically flawed and the conclusions are misleading. Similarly, the cumulative impacts analysis of visual resources in section 3.14.3.10 of the DEIS is methodologically flawed and the conclusions are in error. Landscape architect and expert in visual resource assessment methodologies Dean Apostol has analyzed the DEIS and found the visual analysis woefully lacking and not up to professional standards. For example, the scenic resources cumulative impacts analysis evaluates only impacts to travelers on Interstate 84. While it underestimated the impacts to these views, it completely ignores the impacts to travelers on the Historic Columbia River Highway, the Columbia River, and other recreational resources in the vicinity. The cumulative impacts portions of the EIS are woefully inadequate and do not meet NEPA's or SEPA's requirements to conduct a rigorous and thorough analysis of cumulative impacts.

B. The DEIS fails to consider the direct and cumulative impacts of the proposed development on the energy grid and its infrastructure, and resulting impacts to natural resources.

Under SEPA, the elements of the environment include the built environment, which in turn includes public services and utilities. WAC 197-11-444(2)(d). The energy grid is part of the built environment and impacts to the grid must be considered during the SEPA process. The DEIS failed to adequately analyze impacts to the grid.

The DEIS discusses the need for the project to interconnect to the BPA transmission system, but fails to analyze the indirect and cumulative effects of new wind energy development on the grid and the need for new transmission facilities. DEIS at 3-87—92, 3-278. The DEIS states that the "proposed project would not be expected to affect the operation of the BPA's

transmission system." DEIS at 3-92. The cumulative impacts section of the DEIS makes no mention of the grid or how the project would affect demand for new transmission facilities.

Wind energy production in the region will ultimately be limited by the capacity of the Bonneville Power Administration to integrate new wind energy resources into the BPA electricity grid. Recently, BPA expressed concern about how it will reliably integrate over 6,000 MW of wind energy by 2013. Northwest Power and Conservation Council, Sixth Power Plan, at 12-11 (available at http://www.nwcouncil.org/energy/powerplan/6/default.htm). By adding more energy to the grid, the project increases the need for more capacity and more transmission lines and other infrastructure.

In response to the rapid development of wind energy in the region in recent years the BPA has proposed several new transmission projects. These projects are necessary to integrate the intermittent nature of wind energy and to ensure sufficient transmission capacity to transmit energy to the region and markets in other regions. BPA's own development plans demonstrate that the Whistling Ridge Energy Project would contribute to demand for transmission facilities and contribute to significant adverse impacts to the environment.

The BPA's own documents, some of which are attached hereto as exhibits, explain that the McNary-John Day transmission project and the Big Eddy-Knight transmission project are needed to respond to the demands that new wind energy facilities place on the grid.

To respond to the increased demand for interconnections to the grid, the BPA conducts annual Network Open Seasons where prospective energy producers can submit Transmission Service Requests (TSRs) to BPA. From these requests the BPA offers eligible producers Preferred Transmission Service Agreements (PTSAs). Based on these agreements the BPA calculates the demand for transmission services and the need for any new transmission facilities.

As shown in the attached exhibits, in response to the 2008 Network Open Season, the BPA signed PTSAs securing 6,410 MW of transmission capacity. And in response to the 2009 Network Open Season the BPA signed PTSAs securing 1,553 MW of transmission capacity. In 2010 alone the BPA received TSRs for 4,456 MW of wind energy development that would be eligible to sign PTSAs. If all eligible PTSA are signed and completed, the total new services provided by BPA will total over 12,000 MW, generate the need for hundreds of miles of new transmission lines, and the expenditure of millions of dollars in public funds. The Whistling Ridge Energy Project Project would directly contribute to these impacts. The DEIS must acknowledge and evaluate these impacts and the further impacts that flow from them.

The BPA must include actual data on the grid's capacity to accommodate new sources of intermittent wind energy. As stated above, the BPA has previously expressed concern about how it will reliably integrate over 6,000 MW of wind energy by 2013. Northwest Power and Conservation Council, Sixth Power Plan, at 12-11. The DEIS must include some analysis of how much wind energy the grid can accommodate over the long-term and whether wind integration capacity will limit the amount of wind energy development that can occur in the region. If integration capacity will limit generation potential, then the DEIS must address why the Whistling Ridge Energy Project should take priority over potential development in other locations that would have reduced environmental impacts.

Importantly, the BPA has failed to undertake comprehensive review of the impacts of its transmission system. The BPA's last comprehensive review of the transmission system was in 1995. BPA Business Plan Final Environmental Impact Statement (DOE/EIS-0183) (hereinafter "BPA BP EIS"). That review noted that wind energy could cause adverse impacts to wildlife and scenic resources, but did not undertake any detailed review of how providing access to the

transmission system would lead to impacts from the explosion of wind energy development throughout the region. BPA BP EIS at 4-42, Section 4.3.1. The BPA BP EIS also does not address how much wind energy can be integrated into the grid.

In 2007, the BPA undertook a supplemental analysis of the Business Plan EIS, but declined to undertake further environmental review. Supplemental Analysis of the Business Plan EIS (DOE/EIS-0183) (April 6, 2007). The supplement stated that "continued consideration of a comprehensive policy for BPA's transmission business is not in the best interests of the agency at this time." The supplemental analysis was based on four wind projects totaling 750 MW of wind energy that had been connected to the BPA grid at that time. *Id*. at 42. The analysis did not discuss impacts to wildlife from this development. *Id*. at 46. The analysis did not include a section on scenic impacts, much less how wind energy development enabled by the BPA has transformed scenic landscapes. The supplemental review also failed to acknowledge the ongoing impacts to cultural resources from the development that has been enabled by BPA transmission project. *Id*. at 48—49.

Since the BPA's last review of the environmental impacts associated with the transmission system and the energy production that system allows, an unprecedented level of new wind energy development was occurring throughout the region. Currently over 3,000 MW of wind energy has been interconnected to the grid. The BPA has signed PTSAs for as much as 12,000 additional MW of new generating capacity.

The impacts of this development have dramatically changed landscapes throughout thousands of acres of rural Washington and Oregon along with countless scenic vistas. This development is also killing or displacing an unknown number of birds and ongoing damage to cultural resources is occurring from the excessive ground disturbance and road building. Another

type of impact not anticipated or reviewed in the EIS is the potential overloading of the energy grid as a result of the dramatic increase in wind energy in the region, which can in turn affect fish populations by requiring an excess spilling of water over the region's hydroelectric dams in order to balance out unexpected surges in wind energy production.

This rapid expansion in wind energy has occurred without any programmatic review of the impacts of the generating sources, the existing transmission system, or the demands for new transmission lines. This has also occurred without an adequate understanding of how much wind energy development the grid can accommodate and how projects could be prioritized for grid access based on environmental impacts. These significant changes warrant preparation of a comprehensive cumulative impacts analysis. The DEIS must be substantially revised to reflect the project's contributions to the regional impacts of wind energy development.

C. The DEIS Fails to Adequately Evaluate and Address the Impacts of the Proposed Development on Scenic Resources.

SEPA requires that the environmental analysis include discussion of impacts to sensitive areas. The SEPA official "shall" consider whether a "proposal may to a significant degree . . . [a]dversely affect environmentally sensitive or special areas, such as loss or destruction of historic, scientific, and cultural resources, parks, prime farmlands, wetlands, wild and scenic rivers, or wilderness." WAC 197-11-330(3)(e)(I). SEPA also requires analysis of impacts to scenic resources. WAC 197-11-440(1)(e)(iv).

The current proposal is for a major industrial development towering over ridgelines on the perimeter of the Columbia River Gorge National Scenic Area, overlooking important segments of the Lewis and Clark National Historic Trail and the Historic Columbia River Highway, adjacent to the Gifford Pinchot National Forest, and adjacent to recreational trails on Washington Department of Natural Resources land. The proposed facility would overlook miles

of National Scenic Area viewsheds that have been inventoried as some of the highest quality scenic landscapes in the Gorge.

Unfortunately, the DEIS grossly mischaracterizes the likely impacts of the Whistling Ridge Energy Project on scenic resources. Instead of following SEPA's mandate to provide an unbiased and objective assessment of likely impacts, the DEIS blatantly misapplies established principles of landscape management to conceal the likely impacts of the proposed action. The analysis also violates NEPA's requirement that "[a]gencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements." 40 C.F.R. 1502.24. The DEIS does not list a single landscape architect, much less a landscape architect with training in scenic resource analysis methodologies, in the list of preparers. DEIS at Section 6.0. The lack of professional and scientific integrity is plainly evident through the scenic impacts analysis. The analysis is fundamentally flawed and violates both NEPA and SEPA.

As explained in the attached comments of Dean Apostol, the analysis completely misinterprets and misapplies the Federal Highway Administration's visual assessment system and the Forest Service's Scenery Management System. In addition, the analysis fails to consider impacts to several critical viewpoints and view corridors, reaches erroneous conclusions regarding the potential impacts on scenic resources, and fails to consider viable mitigation measures. Mr. Apostol concludes that the likely scenic impacts of the project would be significant because the project would highly contrast with an intact, high quality scenic landscape that is viewed by substantial number of viewers with high expectations for scenic quality. The project would break the skyline and/or be highly visible from multiple public vantage points and it is impossible to "blend in" wind turbines more than 400 feet tall into this

landscape. The DEIS also erroneously ties scenic sensitivity to distance zones. DEIS at 3-159. Low, moderate, and high impacts can occur in any distance zone depending on the impacts analysis.

The environmental review failed to sufficiently analyze the visual impact of the project as viewed from linear viewing areas such as Interstate 84, the Columbia River, the Historic Columbia River Highway, the Lewis and Clark National Historic Trail, and State Route 141. For some of these scenic corridors basic information such as the distance along linear viewing areas from which the project would be visible, an estimate of the amount of time the project would be visible when traveling along these view corridors, and a simulation of the most visible portion of the project as viewed from these viewing areas is missing from the analysis. Of particular concern is the complete absence of any analysis of views from the Columbia River and the Historic Columbia River Highway.

The DEIS also fails to supply sufficient information to understand and review potential impacts from lights on the proposed wind turbines—particularly nighttime impacts. DEIS at 3-161, 3-173, & 3-195. While FAA lighting standards may be required, compliance with federal regulations does not obviate the duty to comply with state law requiring full disclosure of all environmental impacts. The applicant must document how many lights would be visible from within the National Scenic Area viewshed. The applicant needs to provide additional information regarding what type of lighting would be installed, and which turbines would likely contain lighting. Without this information, it is impossible to accurately evaluate the scenic impacts of the project.

The DEIS also fails to include a detailed explanation of both the methodology used to create the visual simulations and the proper technique for viewing the simulations. To begin

with, all visual simulations should be accompanied by substantial disclaimers regarding their ability to depict real-world impacts. Two dimensional renderings can never accurately simulate the experience of real-world views. Nonetheless, visual simulations do have value in evaluating aesthetic impacts if best practices are used in preparing the simulations and proper qualifications are noted. Lens size, field of view, the format of the image in the simulations, and the viewer's distance from the image all play critical roles in presenting an accurate depiction of aesthetic impacts. For example, the wider the angle of view of a camera lens, the further away an object appears, and the narrower the angle of view, the nearer an object appears. If digital cameras were used, image distortions would need to be factored in when preparing the image. Similarly, the size of the simulation image and the viewer's distance from the image can dramatically alter the perceived impacts of development. EFSEC and the BPA must require clarification on these points to ensure that the inherent flaws in visual simulations are explained.

EFSEC and the BPA should also consider the National Academy of Sciences' recent document entitled, Environmental Impacts of Wind-Energy Projects (National Academies Press, 2007), which includes methodology for analyzing possible impacts from wind development on aesthetic resources. The DEIS should be revised to include discussion of the various standards described in this resource, which was cited and applied in other sections of the DEIS.

The DEIS argues that the visual impacts from roads and electric lines would be negligible. DEIS at 3-173–3-174. However, road and power lines have direct visual impacts and also contribute to the cumulative impacts of a project. As such, they must be included in the visual simulation and analysis. In particular, road and electric lines would likely be highly visible when viewed from recreational areas to the north of the project. These include recreational trails in the Gifford Pinchot National Forest and on land owned by the Washington Department of

National Resources. Particular recreational areas of concern include the Nestor Peak, Little Buck Creek Trail, Grassy Knoll, Little Huckleberry Mountain, and Cook Hill.

The conclusions regarding scenic impacts in the application are clearly in error. The project would have high scenic impacts, given viewer expectations, and the quality of the views that would be impacted. The proposed development would dominate the middleground and background views from multiple important viewpoints.

Not only did the DEIS fail to adequately review scenic impacts, it also failed to propose any mitigation or discuss any unmitigated adverse impacts that would occur. Measures and conditions that should have been, but were not, evaluated include alternate designs and siting to reduce visibility.

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1. The DEIS Fails to Acknowledge Existing Scenic Resource Inventories and Visual Quality Objectives for the Affected Landscape.

The DEIS analysis of scenic impacts states that visual quality objectives (VQOs) have not been established for the landscape that would be affected by the proposed development. DEIS at 3-156. This assertion is demonstrably false. The Forest Service and Gorge Commission have established VQOs for the landscapes that would be affected by the proposed development. These VQOs are based on some of the most extensive and complete scenic resource inventories in the country. These VQOs must be used to measure the impact to viewsheds that would be altered by the proposed development.

In preparing the Management Plan for the National Scenic Area, the Gorge Commission and the Forest Service were required to inventory scenic resources of the National Scenic Area. *See* 16 USC 544d.(a)(1)(A). Pursuant to that mandate the Forest Service and Gorge Commission completed a scenic resource inventory using the Forest Service's Visual Management System

("VMS"), which is the scenic resource management methodology provided in the Forest Service's "National Forests Landscape Management Vol. 2" (Agriculture Handbook 462).[5]

All viewsheds visible from primary key viewing areas were inventoried. These inventories served as the basis for all scenic resource management policies and guidelines in the CRGNSA Management Plan. The original scenic resource inventory includes the following elements: Visual Attributes, Landscape Diversity, Landscape Significance, Seen Areas from Key Viewing Areas, Visual Absorption Capability, and Landscape Sensitivity. The 1991 CRGNSA Management Plan described the inventories:

> Six maps were developed in the process of inventorying scenic resources. These maps are based on the Forest Service Visual Management System. They have been used to develop policies and guidelines that respond to the various levels of visual significance and sensitivity within the Gorge, and that highlight protection of landscapes seen by large numbers of people.
>
> The first inventory map created, "Visual Attributes," identifies 12 predominant landscape types found in the Gorge, ranging from rural townscapes to cliffs.
>
> The "Landscape Diversity" map gauges the variety of visual features in the landscape. A basic premise of the visual management system is that visual diversity is a key element of those landscapes people find most visually appealing and interesting. Much of the Gorge, with it steep landforms, forested slopes, waterfalls, pastoral areas, and rural townscapes, has outstanding visual diversity.
>
> A "Seen Areas" map shows which areas are visible from key viewing areas. The key viewing areas are important public vantage points from which Gorge landscapes are viewed. Scenic protection of lands seen from these vantage points has been emphasized since the inception of the Scenic Area planning process. The Management Plan continues this direction.
>
> The "Landscape Significance" map combines the "Seen Areas" and "Landscape Diversity" maps, based on the concept that the most significant landscapes are those that are both visually diverse and seen from important viewpoints. The "Visual Absorption Capability" map displays the relative ability of different Gorge landscapes to absorb change (through new development) without

[5] The Visual Management System has since been superseded by a revised methodology, the Scenery Management System ("SMS"). The methodology for the SMS is described in "Landscape Aesthetics: A Handbook for Scenery Management." (Agriculture Handbook 701).

> diminishing their scenic qualities. It is based primarily on the degree of slope and amount of vegetative cover.
>
> "Landscape Sensitivity," the last of the six inventory maps, combines "Landscape Significance" with "Visual Absorption Capability," based on the assumption that the most visually sensitive lands are those that are both highly significant and most vulnerable to visual impacts from new development.

CRGNSA Management Plan 1991, at I-1—2. Copies of the inventory maps of the affected landscape are attached to these comments. The CRGNSA Management Plan policies and guidelines that were based on these inventories include the land use designations and landscape setting designations that serve as VQOs.

This background is critical to evaluating the impacts of the proposed development on scenic resources. As seen from the Columbia River, Interstate 84, and the Historic Columbia River Highway the project would break the skyline within viewsheds composed of both SMA Open Space and GMA Open Space land use designations that are also assigned the landscape setting of Gorge Walls, Canyon Lands, and Wildlands. For the SMA viewsheds the applicable VQO is retention, the highest level of scenic protection afforded any landscape in the Gorge. For the GMA viewsheds the applicable VQO is partial retention, with the added protection essentially creating a VQO of retention.

The view from Interstate 84, the Columbia River, and the Historic Columbia River Highway between Starvation Creek State Park and Viento State Park looking north and northeast is dominated by the Dog Mountain SMA and the Underwood Bluff Open Space.[6] The proposed facility would be visible just to the east of the Dog Mountain SMA and north of the Underwood Bluff Open Space area. The attention of visitors traveling along these three scenic corridors would be drawn to the spinning blades and/or blinking lights of numerous wind turbines

[6] Both Starvation Creek State Park and Viento State Park are also designated under the Lewis and Clark National Historic Trail Management Plan.

protruding above the skyline to the northeast. This would obviously detract from the integrity of the viewshed and completely frustrate the purpose of the extensive inventories and protections for this viewshed.

Stationary viewers at Mitchell Point would also be confronted with a dramatic change to the landscape. The view from the Mitchell Point area looks directly north at the Underwood Bluff Open Space area. The original scenic resource inventories assigned Underwood Bluff as "outstanding" landscape diversity, "primary" landscape significance, and "critical" landscape sensitivity. These are some of the highest valued lands inventoried in the Columbia River Gorge and justified a VQO that is essentially retention, the highest standard for protection. The ridgeline of Underwood Bluff forms the skyline from this viewpoint. The contours of Chemawa Hill undulate immediately behind the skyline and are nearly indistinguishable from the Underwood Bluff skyline. Underwood Bluff and its highest rated scenic resources, with Chemawa Hill immediately behind it, dominate the middleground views from this location. The southernmost turbines of the proposed facility would be sited at the top of Chemewa Hill and would break the skyline of views from the Columbia River, Interstate 84, and the Historic Columbia River Highway at this location. Once again, viewers' attention would be drawn to giant spinning blades and/or flashing lights in middleground views of some of the most scenically sensitive views in the Columbia River Gorge.

The DEIS completely failed to acknowledge the robust and complete inventory of the scenic landscapes that would be affected by the proposed development. The existing resource inventories and established VQOs must be used to measure the impacts that would be caused by the proposed development. Based on this information, it is undeniable that the proposed development would cause significant adverse impacts to critically important scenic landscapes.

In addition, the DEIS failed to state whether the project would impact views from the Gifford Pinchot National Forest that have established VQOs.

2. The Scenic Impacts Analysis Deviates from BPA's Past Practices in Evaluating Scenic Impacts.

The application and environmental review diverges from the BPA's analyses of scenic impact for other energy projects in the region. The BPA's Draft EIS for the Central Ferry-Lower Monumental 500-kilovolt Transmission Line Project concluded that construction of a 200-foot-tall transmission line within viewsheds as viewed from the Lewis and Clark National Scenic Trail and the Lewis and Clark Scenic Byway would have "high" impacts to scenic resources. Central Ferry-Lower Monumental 500-kilovolt Transmission Line Project DEIS (July 2010) Section 3.7, p 3-91 to 3-104 (hereinafter Central Ferry DEIS). The Central Ferry transmission lines would be 104 to 189 feet tall and would have no moving parts and no lights. Central Ferry DEIS at 2-5. The BPA acknowledged that the transmission line would be visible from the Lewis and Clark National Historic Trail and scenic byways.

The Central Ferry DEIS described the affected landscape as "Typical view[s] of rolling hills and rural landscape adjacent to scenic by way." Table 3-22. The analysis explained that the transmission line would be 1.6 miles (middleground view) from the Lewis and Clark National Historic Trail at its closest point. Central Ferry DEIS at 3-98. The analysis also acknowledged that the transmission lines would create a skyline effect and break up the continuity of the skyline and open terrain, and that the project would introduce structures into a natural landscape. Central Ferry DEIS at 3-98. "The proposed towers and conductors would be a conspicuous change to the relatively natural and rural landscape and would disrupt the continuity of visual resources in the landscape." Central Ferry DEIS at 3-98. The project would be visible from "popular recreation areas and a frequently traveled roadway." Central Ferry DEIS at 3-98.

In comparison to the Central Ferry to Monument Transmission Project, the Whistling Ridge proposal would be located in a higher quality scenic landscape, with more state and federal designations for scenic, recreational, and historic importance. The project would be viewed by vastly more people with higher expectations for scenic quality. Whistling Ridge would be of comparable distance from important viewpoints, but would be over twice as large (over 430 feet tall compared to 104 to 198 feet tall), have more visible mass, include giant moving parts, include flashing lights, and would be painted white. The Whistling Ridge project would obviously contrast more with the landscape than the Central Ferry project. While the Central Ferry DEIS concluded that impacts would be high, the Whistling Ridge DEIS concludes that impacts to scenic resources would be moderate at worst.

It is abundantly clear that this project has not been reviewed under the same standard as previous projects under BPA review. This evidences an obvious attempt to thwart the purposes of SEPA and NEPA with environmental review that seeks to conceal impacts rather than objectively analyze impacts.

The adverse impacts of energy development, transmission lines in particular, were also acknowledged in the BPA's Business Plan EIS. BPA Business Plan Final Environmental Impact Statement (DOE/EIS-0183) (hereinafter BPA BP EIS). The Whistling Ridge would include transmission lines and analysis of impacts from transmission lines is equally applicable to scenic impacts analysis for industrial wind energy development. The Business Plan EIS stated:

> In areas used for recreation, particularly in undeveloped places, studies show that many users find transmission lines to be an unwelcome visual intrusion. Also, many citizens feel strongly that transmission lines near their homes are visually intrusive, and that some property values may be reduced. Adverse visual effects may be perceived up to several kilometers from the line. Transmission lines may be more compatible with industrial areas. The effectiveness of potential mitigation measures depends on the site, and some measures may substantially increase the cost of the project. Possible measures include darkened towers in

> forested areas; different tower designs more compatible with a particular environment; non-specular (nonshiny) conductor; and locations that avoid visually sensitive areas.

BPA BP EIS at 4-52, Section 4.3.2.6. The Business Plan EIS also explained that one of the main environmental risks of wind energy development is visual impacts. BPA Business Plan EIS at 4-42, Section 4.3.1. The BPA has previously relied on this environmental review when approving interconnections to the grid. How the BPA can acknowledge adverse impacts from transmission lines, but ignore adverse impacts from wind energy facilities, is inexplicable.

3. Views from the Lewis and Clark National Historic Trail would be adversely affected.

The Lewis and Clark National Scenic Trail was created to "stimulate Federal, State, and local agencies and individuals to identify, mark, and preserve for public inspiration and enjoyment the routes traveled by the Lewis and Clark Expedition." Lewis and Clark Trail Management Plan at 1. The Management Plan for the trail recognizes that many of the historic and cultural resources have been altered or lost and the Expedition left scant traces of their passing. However, "In a very real sense, many of the historic resources are the *landmarks, vistas*, flora, and fauna that make up the Trail's natural resources. It is virtually impossible to find either historic or natural resources along the Expedition route, which have not been altered in some way by man or nature." Lewis and Clark Trail Management Plan at 4 & 13. Thus, the scenic vistas and natural resources of the Expedition route are critical to appreciating the trail. Locations where those vistas and natural resources are intact are exceedingly rare, and warrant the greatest attention during SEPA and NEPA review.

The Columbia River segment, which includes the portions of the Trail that would be affected by the Whistling Ridge project, was designated for three types of trail development: a water trail, a land trail, and a motor route. The Columbia River, Interstate 84 and Washington

State Route 14 are designated routes. The Management Plan notes that there was a "nearly continuous string of recreation sites along this segment." Lewis and Clark Trail Management Plan at 70. Individual sites within sight of the Whistling Ridge Energy Project include Viento State Park, which is directly across the Columbia River from where the Lewis and Clark Expedition camped on October 29, 1805 and April 13, 1806, and Starvation Creek State Park. L & C Management Plan at 74.

The DEIS fails to acknowledge adverse scenic impacts to the Lewis and Clark National Scenic Trail. Locations along the route with intact scenic vistas that retain some of the same views that the Lewis and Clark Expedition experienced are critical important resources for the trail system. The views from I-84, the Columbia River, Viento State Park, and Starvation Creek State Park are largely intact as evidenced by the Forest Service's resource inventories. The project would dramatically alter these views causing significant adverse impacts to the trail. This conclusion was clearly expressed by the National Park Service in at least two separate letters to the BPA and EFSEC. This conclusion is also supported by the BPA's previous environmental analysis of other projects that would have similar, although less severe, impacts on the Lewis and Clark National Historic Trail. The egregious failure to acknowledge significant adverse impacts to the Lewis and Clark National Historic Trail must be corrected.

D. The DEIS Fails to Adequately Review the Likely Impacts of the Proposed Development on Natural Resources.

The Whistling Ridge project is likely to cause significant adverse impacts to natural resources, including the direct impacts of mortality to wildlife, as well as indirect effects from habitat destruction, displacement, and species avoidance of the project area after construction. Avian species often collide with wind turbines, and bats often die from internal hemorrhaging caused by the massive changes in air pressure near the spinning blades of a wind turbine, a

process known as “barotrauma.” Also, components of the industrial development, including collector lines, transfer stations, and access roads, can displace wildlife and fragment habitat. The DEIS failed to adequately analyze the likely impacts to wildlife and other natural resources.

In addition, as demonstrated in the written testimony of Dr. K. Shawn Smallwood (attached herein), the underlying data and environmental analysis relied upon in the DEIS is severely flawed. For example, without any scientific support the DEIS states that the clearcut project area is poor habitat for wildlife. However, Dr. Smallwood points out that “[b]ird species diversity is much greater at Whistling Ridge than at the Altamont Pass, where bird fatalities caused by wind turbines are notoriously high.” Whistling Ridge surveys found more than 1 species per hour of searching, whereas surveys at Altamont found 0.036 species per hour. The proponents’ ploy to clearcut the land and present a devastated ecosystem immediately before applying for an industrial energy facility is misleading and results in biased conclusions in the DEIS. As Dr. Smallwood concluded, based on independent analysis of the proponent’s own surveys, “Whistling Ridge exhibits a very high level of ecological integrity.” This is likely a result of the projects locattion within a largely intact ecoregion where species diversity remains high. This is also why the Klickitat County Energy Overlay Zone excluded forested areas.

Dr. Smallwood also points out contradictions between foundational statements and the conclusions in the DEIS. For both Keen’s myotis and Townsend’s big-eared bat, the DEIS states that the analysts had insufficient knowledge of the species, but nonetheless concluded that it was unlikely that they would occur at the site. DEIS at 3-59–60. It is plainly inappropriate to base conclusions on insufficient information. At best, the DEIS should say that impacts to bat species are unknown and then analyze the worst case scenario given that uncertainty..

The DEIS seriously underestimates the potential impacts of this project, both on an individual basis and when considered cumulatively with other wind energy projects. Dr. Smallwood has determined that the baseline studies to assess impacts were cursory and inadequate, the likely impacts to raptors are significant, the cumulative impacts analysis was biased and unrealistic, and the mitigation measures are inadequate.

The DEIS also failed to ensure the protection of wildlife and has failed to adequately review impacts to natural resources in a number of other ways, as described below.

1. The DEIS Fails to Include Best Available Science in the Analysis.

The avian impacts analysis is inadequate and not based on the Best Available Science. The baseline surveys were too cursory to support a scientifically credible baseline assessment. Failings include an inadequate sample and an inadequate amount of time dedicated to surveys. Avian utilization of a site can vary greatly from year to year, so the limited time span of these baseline surveys introduces large uncertainty into the resulting utilization rates. The sample sizes were grossly inadequate for what is needed for comparing bird utilization among project sites or for guiding wind turbine locations to minimize collision rates. Numerous other methodological errors in the analysis introduce additional biases that undermine the SEPA and NEPA review.

Wildlife surveys should be conducted using current state-of-the-art field and analysis protocol. At the least, surveys must take into account survey bias including, but not limited to, searcher efficiency, carcass "life expectancy" or persistence, and scavenger removal. The entire site should be surveyed before and after construction. Both pre-development survey and post-development monitoring should take into account the episodic nature of some bird migrations and nocturnal bird migrations. For example, long or inappropriately timed intervals between searches may miss a significant avian presence. The DEIS fails to account for these factors.

2. The DEIS Fails to Adequately Consider Displacement Effects on Avian Populations.

The DEIS failed to adequately consider displacement effects on avian populations. Impacts of wind projects on birds are not limited to collisions. When a landscape is industrialized by strings of giant machines, birds and other animals may be driven away rather than killed. And when multiple such strings are concentrated in one area, the impacts on species populations can be substantial. The environmental analysis is incomplete and must be supplemented with specific assessments of cumulative displacement impacts.

3. The DEIS Fails to Ensure Compliance with the Federal Endangered Species Act of 1973 ("ESA"), 16 U.S.C. §§ 1531–1544.

Under the ESA, "take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." 16 U.S.C. § 1532(19). Section 9 of the ESA prohibits both acts that would "take" a species, as well as acts that would cause an act that constitutes a "taking." The Ninth Circuit has held that "a habitat modification which significantly impairs the breeding and sheltering of a protected species amounts to 'harm' under the ESA." *Marbled Murrelet v. Babbit*, 83 F.3d 1060, 1067 (9th Cir. 1996). The DEIS failed to demonstrate that the project will be in compliance with Section 9 of the ESA.

The DEIS does state that there has been ongoing consultation with U.S. Fish and Wildlife Service. DEIS at 1-20. Pursuant to NEPA regulations the BPA is supposed to perform this consultation requirement "concurrently with and integrated with" preparation of the Draft EIS, not after the Draft EIS is complete. 40 C.F.R. § 1502.25. The results of this consultation process should have been included in the DEIS.

In Section 2.20.2.2 of the Amended Application, the Applicant states that a Biological Assessment will be prepared. The DEIS fails to make good on this promise. BPA and EFSEC

must ensure that a biological assessment is prepared, to better inform the agencies about potential adverse impacts to threatened and endangered species.

4. The DEIS Fails to Ensure Compliance with the Bald Eagle Protection Act, RCW Chapter 77.12, and Regulations Promulgated Pursuant Thereto, Located at WAC 232-12-292.

The DEIS fails to ensure compliance with the state Bald Eagle Protection Act, despite the presence of bald eagles and their habitat within and near the project site. There is no evidence that the Washington Department of Fish and Wildlife has been consulted pursuant to the Bald Eagle Protection regulations.

5. The DEIS Fails to Ensure Compliance with the Federal Bald and Golden Eagle Protection Act, 16 USC § 668–668d.

The DEIS fails to ensure compliance with the federal Bald and Golden Eagle Protection Act ("BGEPA"), again despite the presence of bald eagles and their habitat within and near the project site. The BGEPA prohibits any person, association, partnership or corporation from taking a bald or golden eagle at any time or by any manner without a permit. 16 USC § 668(a). A permit may be issued only if the taking would be compatible with the preservation of the species. *Id*. § 668a.

6. The DEIS Fails to Ensure Compliance with the Federal Migratory Bird Treaty Act, 16 U.S.C. §§ 703–712.

The Migratory Bird Treaty Act ("MBTA") requires that the U.S. Fish and Wildlife Service (USFWS) enforce the MBTA against "any person, association, partnership, or corporation" that "by any means or in any manner," pursues, hunts, takes, captures, kills or attempts to take, capture or kill a migratory bird or any part, nest or eggs of any migratory bird. 16 U.S.C. §§ 703, 707. Under the MBTA, a person may take or kill migratory birds only as permitted under USFWS regulations and based on the USFWS's determination that the take or

kill is compatible with the migratory bird treaties. *Id.* §§ 703, 704. The USFWS's determination must take into account scientific factors such as species abundance and distribution, migratory patterns, and breeding habits, as well as the economic value of birds. Id. § 704. The killing of a single migratory bird is sufficient to create criminal liability. *United States v. Corbin Farm Service*, 444 F.Supp. 510 (E.D. Cal), *aff'd*, 578 F.2d 259 (9th Cir. 1978). The killing of a migratory bird does not need to be intentional and the killing can occur "by any means or in any manner." *United States v. Moon Lake Electric Ass'n, Inc.*, 45 F.Supp. 2d 1070, 1075–79 (D. Col. 1999) (upholding the prosecution of a utility for unintentionally electrocuting and killing seventeen birds). The DEIS fails to ensure compliance with the MBTA.

7. Inadequate review of impacts to northern spotted owl populations.

The DEIS states that construction of the proposed facility will not directly impact spotted owl habitat. However, the DEIS fails to address whether the project will adversely affect dispersal habitat and migration corridors that are essential to sustaining genetic diversity of owl populations. For example, the Columbia River Gorge is a likely crossing location for owls moving north and south between Oregon and Washington. The project could also affect the east-west movement of spotted owls between valleys. The DEIS fails to adequately address whether a major industrial energy facility sited within spotted owl territory will adversely affect the species.

The DEIS also fails to address the permanent loss of forested lands within the White Salmon Spotted Owl Special Emphasis Area (SOSEA). The DEIS claims that the project would meet Washington state standards for the retention of sufficient habitat within the SOSEA, but it does not adequately review the impacts of *permanently* converting forest land to an industrial

use, and how that permanent conversion would affect the longterm viability of spotted owl habitat within the SOSEA.

8. Failure to demonstrate sufficient protections for non-avian wildlife and insects.

The application and threshold determination fail to demonstrate sufficient protections for sensitive and rare wildlife species, including a number of sensitive and rare species that the application notes have been observed within the project site. The DEIS also fails to evaluate potential impacts on insects such as butterflies. Here, the impacts are typically not from direct turbine strikes, but rather from habitat disruption or destruction. There are several species of butterflies of particular concern in this area, particularly the rare Western Oak Dusky Wing (*Propertius duskywing*).

9. The DEIS fails to include adequate mitigation measures.

The decisions fail to include adequate mitigation measures to protect wildlife. For example, the DEIS include discussion relating to future surveying for wildlife impacts, but fail to include any conditions that would require any concrete actions in response to actual wildlife impacts.

10. The DEIS misrepesents the climate change and air quality impacts of the project and of the no-action alternative.

The DEIS repeatedly asserts that if the Whistling Ridge Energy Project is not built, then adverse impacts to climate change and air quality would necessarily result. For example, the DEIS states that "[i]f the No Action Alternative is selected, the growing electricity needs of the region would continue to be met through a combination of other renewable development and a combination of additional fossil fuels." DEIS at 3-21–3-22. This completely false dilemma, in various forms, is repeated throughout the DEIS without any factual support.

In fact, the regional energy system will reduce greenhouse gas emissions and air pollutants regardless of whether this individual project is built, and primarily through conservation measures. The Northwest Power Planning Council's Sixth Power Plan, which will dictate the portfolio of energy production sources for the foreseeable future, has planned to meet 85% of new demand with conservation and efficiency measures over the next 20 years. Sixth Northwest Power Plan Overview at 1. The remaining 15% of new demand would be met with renewables. Notably, this would be achieved even while the Boardman coal-fired power plant is taken offline by 2020.

The Bright Future Report also provides some broader context for the supply and demand aspects of the regional energy grid. Bright Future Report, NW Energy Coalitions, Original Edition, March 2009 – Update 1, July 2009. The Bright Future Report analyzes how the region will meet its energy needs through 2050, factoring in the loss of the Boardman coal-fired power plant, the removal or reduced use of hydropower projects on the lower Snake River, and picking up that lost energy supply through conservation, efficiency, and clean new sources of energy. The Report's bottom line conclusions are that "[t]he region has enough renewable potential to more than meet all current and future power needs" and that the potential for affordable clean energy "[d]warfs" the need. Bright Future Update at 14, 15. Thus, foregoing the 21 average MW of production capacity that would result if the Whistling Ridge project is not constructed would be essentially irrelevant to the overall supply of alternative energy. Furthermore, there is absolutely no evidence in the record showing that the alternative to this particular wind project is continued use of fossil-fuel generation sources or new fossil-fuel generation sources. The real choice is between this particular wind facility and siting other wind facilities in alternative locations with fewer environmental impacts.

Thus, it is inappropriate for the DEIS to compare the likely impacts of a wind energy development to the impacts of fossil-fuel generation sources. The region's climate change goals and air quality goals will be achieved regardless of whether the Whistling Ridge project is constructed. Every statement asserting the false dichotomy between constructing the project and a future with higher carbon emissions and air quality problems must be removed from the DEIS.

E. The DEIS Fails to Adequately Review the Likely Impacts of the Proposed Development on Cultural Resources.

1. The DEIS Fails to Analyze Impacts to Cultural Resources and Fails to Integrate Adequate Consultation with Tribal governments.

The DEIS acknowledges that the BPA has an obligation under Section 106 of the National Historic Preservation Act ("NHPA"), 16 USC 470 et seq., to consult with Tribal governments about the likely impacts of the proposal. DEIS at 4-6. The BPA also explains that the "BPA's 1996 government-to-government agreement with the 13 federally-recognized Native American Tribes of the Columbia basin provides the guidance for the Section 106 consultation process with the Tribes." DEIS at 4-6. The Draft EIS explains that the BPA will conduct formal government-to-government consultation. DEIS at 3-204. The DEIS fails to acknowledge that NEPA regulations also require that the BPA must prepare the Draft EIS "concurrently with and integrated with" the required consultation under the NHPA. 40 C.F.R. § 1502.25(a).

SEPA requires EFSEC to consult with the Yakama Nation as well. Under SEPA, EFSEC is required to consider the likely impacts to cultural resources. "Cultural preservation" is an element of the environment that must be addressed through the SEPA process. WAC 197-11-444. In addition, the environmental checklist, which must be prepared for proposed actions, requires consideration of impacts to cultural resources. WAC 197-11-315; WAC 197-11-960. SEPA also requires that EFSEC consult with agencies with expertise in the impacted

environment. RCW 43.21C.030(2)(d); WAC 197-11-408(2)(a). EFSEC's SEPA regulations also require that EFSEC works with interested agencies throughout the preparation of the DEIS. WAC 463-47-140(5). The Yakama Nation's Cultural Resources Program is an agency with expertise in Yakama Nation cultural resources. Finally, the 1989 Centennial Accord between the State of Washington and federally recognized tribes mandates that EFSEC undertake government-to-government consultation with representatives of the Yakama Nation regarding the measures necessary for adequate environmental review and appropriate mitigation measures.

Based on the above-referenced sources of law, both EFSEC and BPA must engage in direct government-to-government consultation with the Yakama Nation. The BPA has already failed to comply with the NEPA requirements to integrate this consultation into preparation of the DEIS. *See* 40 C.F.R. § 1502.25(a). This consultation should have occurred months ago. Both EFSEC and the BPA have heard testimony from the Yakama Nation explaining that a cultural resources report was submitted in December 2009. There is no legitimate explanation for why this information was not included in the DEIS, which was issued in May 2010, or why government-to-government consultation was not undertaken concurrently with the environmental review process.

Industrial wind energy development in Klickitat County that has proceeded without adequate consultation and review for impacts to cultural resources has led to irreparable harm to cultural resources. This harm is evidenced by a media report in the *Yakima Herald-Republic* on the destruction of cultural resources during the construction of the Windy Point Wind Energy Facility in neighboring Klickitat County, a copy of which is attached hereto. EFSEC and the BPA must not allow this type of mistake to repeat itself. The agencies must perform adequate

consultation, analyze likely impacts, and ensure that Yakama Nation cultural resources would not be adversely impacted by the proposal.

2. The DEIS Fails to Demonstrate Compliance With the National Historic Preservation Act.

The project would be highly visible from the Historic Columbia River Highway ("HCRH" or "Historic Highway"). This invaluable historic treasure, built between 1913 and 1922, was the first road planned as a scenic highway in the United States. Today, the Historic Highway is listed on the National Register of Historic Places, as a Historic District, as a Scenic Byway, and as a National Historic Civil Engineering Landmark by the American Society of Civil Engineers. Even more significantly, the Historic Highway has been designated by the Secretary of the Interior as a National Historic Landmark for its "exceptional value as commemorating or illustrating the history of the United States." More than other historic places on the National Register, National Historic Landmarks are granted special protection against impacts caused by federal action. Indeed, section 110(f) of the National Historic Preservation Act ("NHPA") requires federal agencies to undertake, "to the maximum extent possible," such planning and actions as may be necessary to minimize harm to these properties.

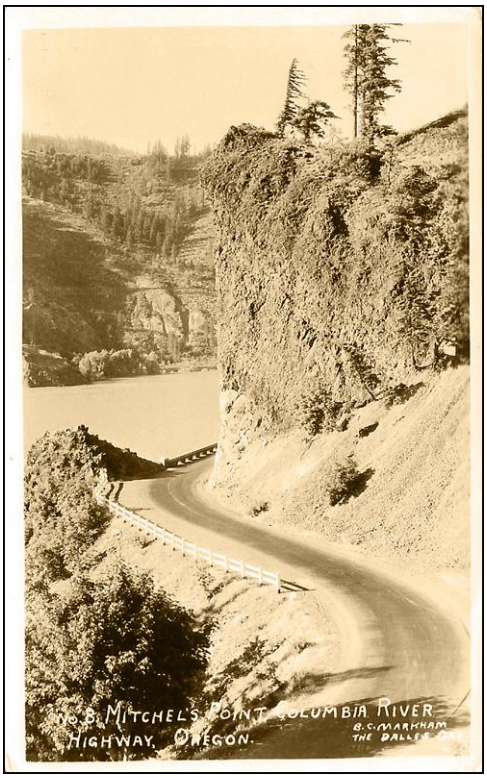
Portions of the Historic Highway are being restored by the Oregon Parks and Recreation Department ("OPRD") and the Oregon Department of Transportation ("ODOT") as part of the Historic Columbia River Highway State Trail. Acting on a 1987 directive by the Oregon Legislature to preserve and restore the Historic Highway, ODOT and OPRD are creating a series of long, narrow parks in the Columbia River Gorge that will be open to pedestrians, bicyclists, children, and people in wheelchairs, and closed to all motor vehicle traffic. More detailed information on the HCRH can be found in the "Historic Columbia River Highway Master Plan: HCRH Segments," a copy of which is attached to these comments.

It is important to note that the BPA is under special obligations with regard to protecting this National Historic Landmark. Section 110(f) of the NHPA provides as follows:

> Prior to the approval of any Federal undertaking which may directly and adversely affect any National Historic Landmark, the head of the responsible Federal agency shall, to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to such landmark, and shall afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking.

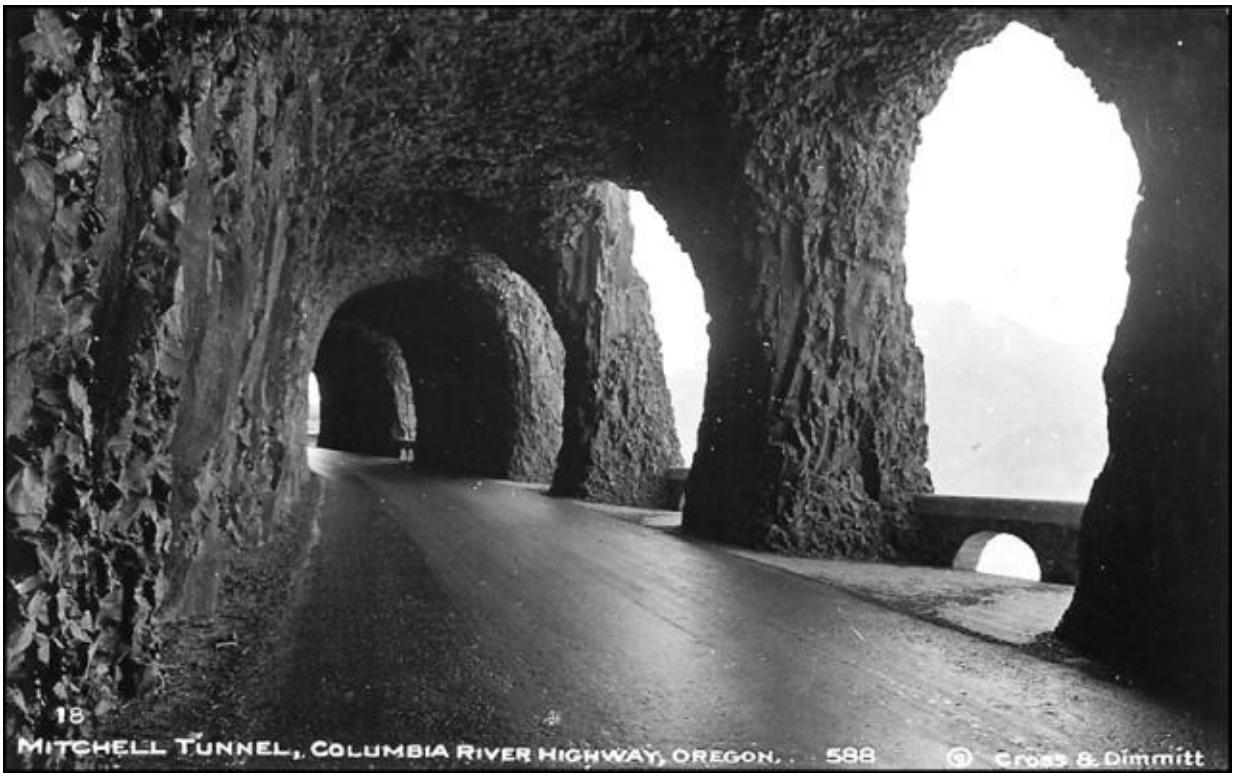
16 U.S.C. § 470h-2(F).

Section 106 of the NHPA and its implementing regulations adopted by the Advisory Council on Historic Preservation entitled "Protection of Historic Properties" (36 C.F.R. Part 800), describe agency responsibilities when an undertaking will affect properties listed in the National Register of Historic Places, including National Historic Landmarks.



The Whistling Ridge project would adversely affect views from the Historic Columbia River Highway. The HCRH was built as a scenic highway. Its historic features include design elements that accentuate views of the remarkable scenic landscapes of the Columbia River Gorge. Curves and pullouts in the HCRH were designed to focus the traveling public's attention on scenic landscapes. The highway includes substantial tunneling in numerous places, with tunnels designed to optimize views. The Mitchell Point Tunnel, known as the "Tunnel of Many Vistas," included multiple windows that presented views of the Columbia River, Underwood Bluff, Dog Mountain, the mouth of the Little White Salmon River,

and the diverse array of vegetative and geologic textures on these landforms. East of Mitchell Point, the HCRH traversed parallel to Underwood Bluff and crosses Ruthton Point, where the curve of the road presents spectacular views of the Columbia River, Underwood Bluff, and Dog Mountain, along with rural pastoral land above Underwood Bluff.



Other important segments of the HCRH include the segment between Starvation Creek and Viento State Park, which have the added importance of being part of the Lewis and Clark National Historic Trail. The HCRH segments from Hood River heading east include the Hood River Loops and the Mark O. Hatfield West Trailhead. This segment also includes spectacular views of the Gorge, particularly Underwood Bluff, Chemewa Hill, and Underwood Mountain to the north and northwest. To the east of the Mark O. Hatfield West Trailhead is the fully restored Hood River to Mosier segment of the HCRH. Several tunnels along this stretch have been reopened, fulfilling the plans of the HCRH Master Plan and setting an example for the ultimate

goal of restoring the entire Highway for recreation and historical interpretation. While the views from the West Trailhead to Mosier become more distant from the project the views are nonetheless highly important to the HCRH. Impacts from these locations are also likely to be high.

While the "Tunnel of Many Vistas" was destroyed during the construction of Interstate 84, segments of the original HCRH are present through this area. The sections that were lost are currently being restored and recreated through ongoing efforts of ODOT, the Oregon State Parks and Recreation Department, and Friends of the Historic Columbia River Highway. The "Tunnel of Many Vistas" will likely be re-created within the next ten years. If the Whistling Ridge Energy Project is constructed, the view from the "Many Vistas" would not include a historically intact landscape. Rather, the vistas would be transformed to include an industrialized skyline with moving parts and flashing lights less than 3 miles away.

The impacts to opportunities for historic interpretation and impacts to this National Historic Landmark were not analyzed in the DEIS. The proposed development would directly impact these views and undermine opportunities for historic interpretation. This constitutes a major adverse impact to the environment that needs to be reviewed and addressed.

/////

F. The DEIS Fails to Adequately Review the Likely Impacts of the Proposed Development on Recreational Resources.

The DEIS fails to adequately review the likely impacts to recreational resources. The project site is centered within a wide array of significant recreational resources, ranging from internationally recognized landmarks to local hikes with epic views. The DEIS fails to inventory all of the recreation resources in the vicinity and fails to adequately analyze the likely impacts to those resources.

The recreation resources in the vicinity include numerous locations to the south including the Columbia River Gorge National Scenic Area, The Lewis and Clark National Historic Trail, the Oregon Pioneer National Historic Trail, the Ice Age Floods National Historic Trail, the Historic Columbia River Highway Trail, Starvation Creek State Park, Viento State Park, Spring Creek Hatchery State Park, the Columbia River, the Mitchell Point Trail, Indian Head, and hiking along the Lower White Salmon River near the confluence with the Columbia. Locations to the north include the Lower White Salmon Wild and Scenic River, the Little White Salmon River, Nestor Peak, the Little Buck Creek Trail, the Grassy Knoll Trail, Cook Hill, Little Huckleberry Mountain, and numerous other hiking trails and drive-up viewpoints in and near the Gifford Pinchot National Forest. The DEIS fails to adequately inventory these resources.

View from Little Huckleberry Mountain. Whistling Ridge and Chemawa Hill in center of photo. Photo by Jozsef Urmos.

As explained above, the Lewis and Clark National Scenic Trail includes the Columbia River, State Route 14, Interstate 84, Starvation Creek State Park, and Viento State Park. The DEIS fails to acknowledge these components of the National Historic Trail. The DEIS fails to acknowledge that Starvation Creek State Park and Viento State Park also provide river access for wind surfing, kite boarding, motor boating, canoeing and other water activities. The DEIS also fails to acknowledge that the City of Hood River is an international hub for windsurfing and that the project would be visible from multiple windsurfing locations. The DEIS also fails to

recognize that the Little White Salmon River and the White Salmon River are internationally known in whitewater kayaking communities.

The DEIS states that "[o]n the Oregon side of the Columbia River, land use within the Scenic Area is predominately commercial timber production and residential." DEIS at 3-265. This is one of the more absurd errors in the DEIS. The Forest Service owns thousands of acres of public land within the Scenic Area on the Oregon side of the Columbia that is managed to protect natural resources and provide recreation opportunities, not for timber production. The leading land uses on the Oregon side of the Gorge, excluding urban areas, are conservation and recreation.

The DEIS states that "no parks or recreation facilities are planned within a 5-mile radius of the site, either as part of the Skamania County Parks and Recreation Master Plan or the Columbia River Gorge National Scenic Area Management Plan." DEIS at 3-139. This statement is patently wrong and ignores plans to restore and develop facilities at Mitchell Point as part of the Historic Columbia River Highway. While Mitchell Point is already owned by Oregon State Parks, the development proposals are certainly new and warrant acknowledgement.

The DEIS failed to give proper consideration to impacts to recreational resources, including a failure to analyze whether the project would be consistent with the Management Plan for the Lewis and Clark National Historic Trail and the Historic Columbia River Highway Master Plan, or the recreation resource provisions of the CRGNSA Management Plan. While these plans do not have direct regulatory authority over the project (assuming no ground disturbance would occur in the National Scenic Area), the goals and policies could be frustrated by the project. There needs to be at least a discussion of the potential impacts.

Project construction activities would generate traffic delays that would adversely affect recreational users. Countless residents in the gorge hike, windsurf, or kayak every day of the week and use the roads that would be used as a haul route for this project to access these recreational spots. Industrial traffic and associated delays would have an adverse impact on these resources. For example, use of the east access for Cook-Underwood Road for this project would block access to a recreational trail along the White Salmon River. Similarly, the west access for Cook-Underwood Road is regularly used by whitewater kayakers to access the lower three miles of Little White Salmon River, which has achieved legendary status due to the challenging rapids and consistent water flows. By failing to fully acknowledge such impacts and prepare a traffic mitigation plan for public review, EFSEC and the BPA have foreclosed the opportunity to evaluate the project's true impacts and inform the public of these impacts.

Project operation would also affect recreation. The DEIS section that addresses direct impacts of project development fails to mention recreation resources. DEIS at 3-153. Similarly, the cumulative effects section of the DEIS does not identify a single impact to recreational resources. DEIS at 3-279–3-280. The DEIS does acknowledge low to moderate impacts to views, but fails to acknowledge that scenery is typically a central part of outdoor recreation. As stated above, the scenic resource analysis was grossly inadequate.

Recreation resources that were not acknowledged through the scenic resource assessment include Little Huckleberry Mountain, Nestor Peak, and Cook Hill. These hiking areas provide dramatic panoramic views of Mount Hood and Washington's southern Cascades. Impacts to these resources were completely ignored.

The proposed development would be located in the heart of one of the greatest recreational destinations in the world. Windsurfers, kiteboarders, kayakers, and hikers come

from around the world to this area, and the Gorge itself is recognized as a national recreational treasure. Beyond the international and national fame, the area surrounding the project is home to people who hike, boat, bird, view wildflowers, and explore mountains and forests as a primary recreational pursuit. The project would be located in the middle of many of these activities. The recreational impacts analysis warrants substantial revision to reflect the actual impacts to recreational resources.

G. The DEIS Fails to Adequately Analyze the Likely Impacts to Agricultural Tourism.

The DEIS's analysis of potential impacts to agritourism is limited to a superficial comparison to wind energy development that has occurred in area between Walla Walla and Kennewick. DEIS at 3-151. The DEIS merely states that "[w]ind power and winery tourism already co-exist in the Columbia River Area. For example, four wind power facilities are located between Walla Walla and Kennewick (Canyon, Stateline, Vansycle, Combine Hills). This area is home to a thriving wind industry with over 60 wineries." DEIS at 3-151.

The DEIS provides no analysis of whether industrial wind development has caused any adverse impacts to wineries in that area, or whether the landscape and proximity of the two uses is even remotely comparable to the proposed Whistling Ridge project and existing agritourism activities in the area.

For example, the DEIS does not explain how close any of the wind facilities are to the 60 referenced wineries. For Whistling Ridge, the project would be within a mile of existing wineries, would dominate views, and may also be heard. Importantly, the DEIS does not even attempt to quantify the number of agritourism businesses in the Underwood community, nor how close they might be to the proposed Whistling Ridge project.

The DEIS fails to explain how many of the 60 wineries are open to the public, and thus how many support agritourism. Wineries in the Underwood area have tasting rooms and host commercial events.

The DEIS fails to provide any economic data evidencing business trends and property values for the 60 wineries before and after wind energy facilities were constructed in that region. Even if 60 wineries coexist with the wind industry in that region, that does not mean the agritourism industry in that region has not been affected by the wind industry.

In sum, the analysis of potential impacts to agritourism fails to provide any meaningful substantive analysis that can inform decision makers on the likely impacts of the proposed development.

H. The Transportation Impacts Analysis is Inadequate and Must be Revised to Include Alternatives that Avoid and/or Mitigate Impacts to the Underwood Community.

The DEIS must adequately review the likely impacts to the local and regional transportation system. The proposed development would generate thousands of vehicle trips through areas that are predominately used for recreation, agriculture, rural residential, and forest uses. Industrial development and land uses are prohibited in the areas that the proposed haul route would travel through. The transportation impacts would likely be substantial. Impacts would include significant delays due to increased traffic and the size of vehicles associated with the use. The vehicles associated with the proposal would also be incompatible with local uses.

Whistling Ridge would make thousands of vehicular trips across the proposed haul route, including the hauling of heavy construction materials and equipment exceeding the Washington State Department of Transportation's legal load limit of 52.75 tons. *See* RCW 46.44.041. There would be more than 1,700 trips using specialized over-sized trucks designed specifically for the

industrial purpose of hauling the enormous turbine components. These specialized trucks are up to 150 feet long, 17.5 feet high, and 14.5 feet wide. Since October 11, 2007, trucks longer than 125 feet in length have been prohibited on Washington SR-14 along the haul route.

In addition to the specialized trucks, other large and oversized trucks would be needed to haul construction equipment, plus three pilot vehicles for each truck wider than 10 feet, and construction worker vehicles. Although WRE has not yet proposed a total number for all vehicular trips along the haul route, the total number would likely exceed 10,000 trips. The specialized trucks and their frequent, heavy loads are expected to damage the roads along the haul route. Thus, WRE proposes to repair road damage resulting from the industrial hauling.

This massive intrusion of industrial construction equipment would run through rural residential, agricultural, and recreational areas. Given the impact to the community, EFSEC and the BPA should study alternative routes that would preclude or minimize the use of Cook-Underwood Road as it runs through the National Scenic Area.

In addition, the DEIS provides internally inconsistent information about the true extent of the traffic impact. At pages 1-29 and 3-233, the DEIS states that traffic flow could be restricted for up to 20 minutes during the construction phase. But at page 3-228, the DEIS states that traffic delays would increase by only six seconds as a result of this project. The agencies should explain the inconsistency.

I. The DEIS Fails to Adequately Analyze and Address the Potential Health Impacts from Wind Energy Facility Operation.

The nearest residence would be within one-half mile of the proposed facility. Numerous other residences would be in similarly close proximity. EFSEC and BPA must ensure that the DEIS includes adequate review of the likely impacts on neighboring properties.

Recent studies have shown a potential for wind energy facilities to cause adverse impacts to human health. Adverse health impacts could occur from low-frequency noise that interferes with inner ear functions resulting in dizziness, nausea, and loss of sleep. While the research is not conclusive, the uncertainty regarding health impacts of wind development warrant a precautionary approach to siting wind facilities near residential structures. The DEIS should include analysis of a variety of sources on the health impacts of wind energy development. EFSEC and the BPA should require that the facility be set back at least 1 mile from the nearest residence.

Friends also incorporates the comments of Keith Brown and Teresa Robbins regarding the potential noise and human health impacts of the proposed project.

CONCLUSION

The Draft Environmental Impact Statement for the Whistling Ridge Energy Project is grossly inadequate and fails to comply with the requirements of SEPA, NEPA, and other applicable laws. The DEIS has been heavily influenced by the preferences and biases of the Applicant to rationalize a predetermined outcome, not to provide an impartial and informed analysis of environmental impacts. The flawed document cannot be used as a basis for decision making and must be substantially revised before any conclusions on environmental impacts can be drawn.

The Whistling Ridge Energy Project is easily the most controversial and problematic wind energy facility proposed to date in Washington State. The project would cause significant adverse impacts to unique resources in both Washington and Oregon, including scenic, natural, cultural, and recreational resources. The affected resources include the Columbia River Gorge National Scenic Area, the Historic Columbia River Highway, the Lewis and Clark National

Historic Trail, the Oregon Pioneer National Historic Trail, sensitive wildlife species such as the federally listed northern spotted owl, sensitive Native American cultural resources, and multiple hiking trails and other recreational resources.

Because of these unique factors, the environmental review must be of the highest integrity. Unfortunately, this DEIS fails to take the hard look required by NEPA and SEPA. The DEIS is improperly designed so that the applicant's private economic interests unlawfully dictate the purpose, need, alternatives, and eventual outcome for the proposed action. The DEIS does not demonstrate that EFSEC and BPA consulted with agencies with expertise in the resources that would be affected by the project. The DEIS also misquotes and misrepresents the language and meaning of the Columbia River Gorge National Scenic Area Act, and prematurely and erroneously concludes that the project would be consistent with the applicable land use regulations. Finally, the DEIS fails to adequately evaluate the direct, indirect, and cumulative impacts of the proposed project.

The DEIS is so deficient that it cannot be used as the basis for a decision on the project. The proposed project should be denied outright, but if it is to be given further consideration, a supplemental or revised DEIS is required.

Michelle, Kayce (UTC)

From: Nathan Baker [redacted]
Sent: Friday, August 27, 2010 4:53 PM
To: Andrew M. Montaño; Posner, Stephen (UTC)
Cc: EFSEC (UTC)
Subject: Whistling Ridge DEIS Comments
Attachments: Comments of Friends of the Columbia Gorge on the Whistling Ridge DEIS.pdf

Dear Messrs. Montaño and Posner:

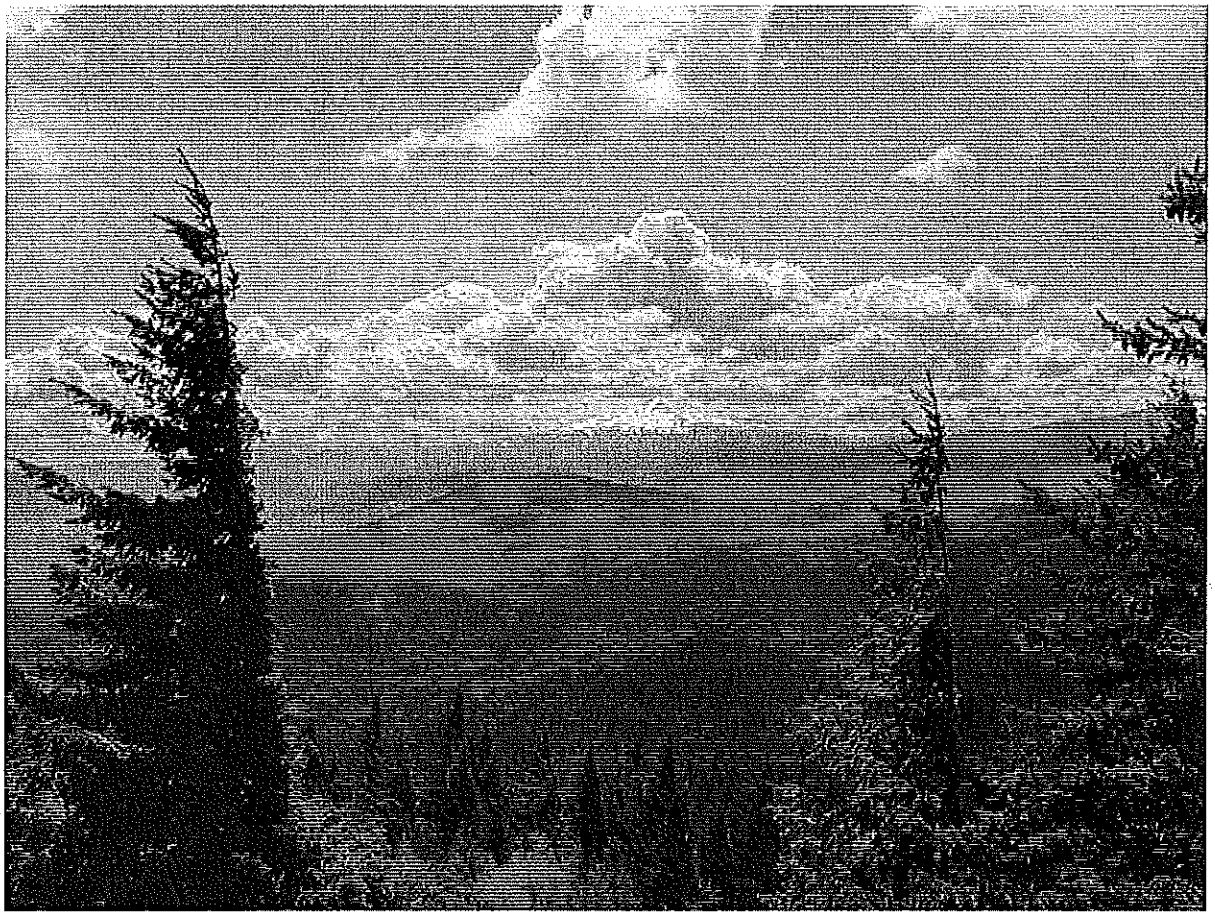
Please find attached the comments of Friends of the Columbia Gorge on the DEIS for the Whistling Ridge Energy Project. If possible, we request that the BPA post our comments on its web site.

We also have multiple exhibits. I will send as many of these as I can by email, and will also mail all exhibits (including the large ones) on CDs to each of you. I recently checked with Maryam Ashgharian at the BPA and she said this method would be acceptable, given the limitations of the BPA electronic comment form in accepting large files.

Thank you very much for your consideration. If you have any questions or comments, please do not hesitate to contact me.

Nathan Baker, Staff Attorney
Friends of the Columbia Gorge
[redacted]

Comments on the Draft Environmental Impact Statement for the Whistling Ridge Energy Project DOE/EIS – 0419



Submitted by

Friends of the Columbia Gorge

August 27, 2010

Cover photo © Chris Carvalho, www.lensjoy.com
Natural scenic views in the Columbia River Gorge, including this view of Mt. Hood from Nestor Peak, would be permanently damaged by the Whistling Ridge Energy Project.

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B. Dean Apostol Analysis Notes

C. Dr. Shawn Smallwood Comments

D. Dr. Shawn Smallwood Curriculum Vitae

E. *Yakima Herald-Republic*, "Yakamas say development is damaging sacred cultural sites"

F. Historic Columbia River Highway Master Plan - Segments

G. Historic Columbia River Highway - National Register Nomination

H. Lewis and Clark National Historic Trail Master Plannning Newsletter 07-27-2010)

I. Lewis and Clark National Historic Trail Management Plan

J. CRGNSA 1991 Management Plan Excerpt Part I

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M. Breckel Memorandum on Mapping the National Scenic Area Boundary

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O. NREL Wind Speed Map for Whistling Ridge Area

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Q. Oregon EFSC Energy Projects Under Review

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T. BPA Central Ferry-Lower Monument DEIS

U. BPA Report on Installed Wind Capacity

V. BPA Network Open Season 2008-2009 Project Summary (May 27, 2010)

W. BPA Network Open Season Decision Letter (Feb. 16, 2009)

X. BPA Network Open Season 2008 PTSA Update

Y. BPA Network Open Season 2009 Eligibility Summary (07-22-09)

Z. BPA Network Open Season Summary 2010 TSRs

AA. BPA 2008 Network Open Season Project Descriptions (Oct. 2009)

BB. BPA Interconnection Queue Spreadsheet

CC. Bright Future Update (July 2009)

DD. Skamania County Hearing Examiner Decision (SEP-08-35)

EE. Appellants' Pre-Hearing Brief (SEP-08-35)

FF. Appellants' Reply Brief (SEP-08-35)

GG. Testimony of Gary K. Kahn, Friends of the Columbia Gorge, EFSEC Land Use Proceedings

HH. Columbia River Gorge Commission Memorandum on Legality of Road Use

II. *Friends v. Forest Service*, 546 F.Supp.2d 1088 (D.Or. 2008)

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KK. Nov. 6, 2009 Applicant Letter to Gorge Commission

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NN. April 9, 2010 Email from Applicant Regarding Use of DNR Land

INTRODUCTION

These comments regarding the Draft Environmental Impact Statement for the Whistling Ridge Energy Project are submitted by Friends of the Columbia Gorge.[1] Friends is a nonprofit organization with approximately 4,700 members dedicated to protecting and enhancing the resources of the Columbia River Gorge.

Of all the wind energy projects that EFSEC and BPA have reviewed to date, the Whistling Ridge Energy Project is easily the most controversial and problematic, as well as the project most likely to cause significant environmental impacts. This is the only project proposed to be located within forested habitat. This is the only project proposed within a designated Special Emphasis Area for the federally listed Northern Spotted Owl. This is the only project proposed within three miles of the Lewis and Clark National Historic Trail, the Oregon Pioneer National Historic Trail, the Historic Columbia River Highway (designated as a National Historic District on the National Register of Historic Places, as well as a National Historic Landmark), and the Ice Age Floods National Geological Trail. This is the only project for which multiple other agencies, including the United States Forest Service and the National Park Service, have recommended substantial modifications to the project. This is the only project proposed adjacent to a National Forest. This is the only project that would cause significant adverse impacts in two states (not just Washington). This is the only proposed project surrounded by recreational and cultural resources. And last but certainly not least, this is the only proposed project that would cause significant adverse impacts to a National Scenic Area.

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[1] Friends hereby incorporates by reference all of its previous written and oral comments to the agencies, as well as its submissions to EFSEC through that agency's adjudicative proceeding and land use consistency process. The DEIS does not adequately address many of Friends' previous comments. Friends also incorporates all comments of Save Our Scenic Area.

Because of these unique factors, the agencies must take a special, close look at the impacts. Unfortunately, this Draft Environmental Impact Statement fails to take the hard look required by NEPA and SEPA. The DEIS is fundamentally flawed because it improperly narrows the scope of study, ignores and trivializes the impacts of the project, ignores or summarily dismisses detailed comments from the public and expert agencies, and was largely drafted and/or influenced by the applicant and the applicant's consultants behind closed doors and is therefore extremely biased in favor of the project. The DEIS is so deficient that it cannot be used as the basis for a decision on the project. The proposed project should be denied outright, but if it is to be given further consideration, a supplemental or revised DEIS is required.

BACKGROUND

I. The Columbia River Gorge and the Affected Communities

The Whistling Ridge project would be sited in the heart of the Columbia River Gorge. Many of the proposed turbines would be sited immediately adjacent to and/or highly visible from the Columbia River Gorge National Scenic Area. In addition, portions of the proposed "haul route," along which construction materials and turbine components would be transported, are located within the National Scenic Area.

Established by Congress in 1986, the National Scenic Area is an extraordinary national treasure, an area protected under federal law for its aesthetic, biological, ecological, historic, and recreational values. *See* Columbia River Gorge National Scenic Area Act ("Scenic Area Act"), 16 U.S.C. §§ 544–544p.

The Gorge, under the protection of the Scenic Area Act, offers unfettered scenic and historic views along the Columbia River, site of the final portion of Lewis and Clark's journey across the West. Additionally, the Gorge offers unique recreational opportunities with its many

side-river canyons, ridgetops, and the Columbia River itself. Hiking, bicycling, river rafting, kayaking, skiing, boating, fishing, camping, kiteboarding, windsurfing, birdwatching, and wildflower viewing are all pursued actively by the public throughout the Gorge. The overall character of the surrounding region highly scenic, ranging from wilderness to rural areas with quaint towns and spectacular vistas, rather than industrial or commercial.

In its November/December 2009 issue, *National Geographic Traveler* ranked the Columbia Gorge region #6 internationally, and second in the nation, among "iconic destinations." The Gorge was ranked higher than all of the county's national parks that were surveyed, and higher than Tuscany, Italy; the Serengeti Plains; and Mount Kilimanjaro. A primary reason given by *National Geographic* for the Gorge's high ranking was the Gorge's international reputation for "an incredible job of protecting the views." Another stated reason was the Gorge's "[g]reat potential for 'agritourism and geotourism.'"

The Gorge has long been considered a special area. In 1915, the U.S. Forest Service ("USFS" or "Forest Service") established Eagle Creek as the first Forest Service Recreation Area in the nation. The following year, the Gorge was proposed as a National Park. Continuing development pressures led to the establishment of the National Scenic Area in 1986. Today the Gorge contains hundreds of miles of hiking and bike trails through locales as diverse as misty river canyons and arid grassland plateaus. The Gorge also contains dozens of lakes, parks, campgrounds, and other recreational areas.

The proposed energy project would be highly visible from several urban areas and unincorporated communities in or near the National Scenic Area. These include Underwood, Hood River, Mosier, Mill A, Willard, and White Salmon. Hundreds of residents of these and

other communities are strongly opposed to the project and have expressed their opposition and concerns in comments to the reviewing agencies and to Skamania County.

II. The National Environmental Policy Act

A major purpose of the National Environmental Policy Act ("NEPA") is to ensure that federal agencies conduct fully informed environmental decision-making. NEPA promotes its sweeping commitment to "prevent or eliminate damage to the environment and biosphere" by focusing the attention of federal decision makers and the public on the environmental and other impacts of proposed agency action. 42 U.S.C. § 4321. By focusing agency attention on the environmental and socioeconomic impacts of a proposed action, NEPA ensures that the agency will not act on incomplete information, only to regret its decision once finalized. *See Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989).

To that end, "[t]he sweep of NEPA is extraordinarily broad, compelling consideration of any and all types of environmental impacts of federal action." *Calvert Cliffs' Coordinating Comm. v. U.S. Atomic Energy Comm'n*, 449 F.2d 1109, 1122 (D.C. Cir. 1971). An agency must "take the initiative of considering environmental values at every distinctive and comprehensive stage of the process." *Id.* at 1111.

III. The State Environmental Policy Act

The Washington State Environmental Policy Act ("SEPA") applies to state and local governmental actions and decisions. SEPA's general purpose is to require consideration of environmental factors at the earliest possible stage in order to allow decisions to be based on a complete disclosure of environmental consequences. *See Stempel v. Dept. of Water Resources v. City of Kirkland*, 82 Wn. 2d. 109, 118 (1973). Agencies are required to engage in an open and public study of environmental impacts at the earliest possible time. RCW § 43.21C.030(b); *see*

also WAC § 197-11-300.

Agencies must assess the likely cumulative, direct, indirect, short-term, and long-term impacts to the environment. WAC 197-11-030(2)(b), (2)(g); *see also* State Environmental Policy Act Handbook (SEPA Handbook) at 2 (2003). Agencies must also evaluate alternatives and mitigation measures. WAC 197-11-055(2)(c); *see also* SEPA Handbook at 2. Agencies "shall not limit" consideration only to impacts within the boundaries of the agencies' jurisdiction. WAC 197-11-060(4).

For projects with likely significant impacts, environmental impact statements are required to ensure that government agencies and interested citizens have an opportunity to thoroughly review environmental impacts of proposed actions at the earliest possible stage; the agency must use the EIS in planning actions and making decisions. WAC 197-11-400(4). "The primary purpose of an environmental impact statement is to ensure that SEPA's policies are an integral part of the ongoing programs and actions of state and local government." WAC 197-11-400(1).

The EIS must be *impartial* and must inform decision makers of alternatives and mitigation measures that avoid or minimize impacts of a proposed action. WAC 197-11-400(2). The EIS must not merely rationalize a predetermined outcome. WAC 197-11-402(10). ("EISs shall serve as the means of assessing the environmental impact of proposed agency action, rather than justifying decisions already made.") Rather, the EIS must include sufficient objective analysis to actually inform the agency's decision making process.

The EIS must be completed early enough to serve as a practical contribution to the decision making process. WAC 197-11-406 ("The statement shall be prepared early enough so it can serve practically as an important contribution to the decision making process and will not be used to rationalize or justify decisions already made."); *see also King County v. Boundary*

Review Board, 122 Wn.2d 648, 666, 860 P.2d 1024 (1993); *Barrie v. Kitsap County*, 93 Wn.2d 843, 854, 613 P.2d 1148 (1980); *Mentor v. Kitsap County*, 22 Wn.App. 285, 291, 588 P.2d 1226 (1978).

For projects with potentially significant or serious impacts, SEPA requires the same hard look that NEPA does. "The level of detail shall be commensurate with the importance of the impact," and in the face of any scientific uncertainty, the EIS must disclose the uncertainty and analyze the worst case scenario and the likelihood of its occurrence. WAC 197-11-402(2) and 197-11-080(2), (3).

DISCUSSION

I. The DEIS is Improperly Designed so that the Applicant's Private Economic Interests Unlawfully Dictate the Purpose, Need, Alternatives, and Eventual Outcome for the Proposed Action.

A. The Purpose and Need Statement in the DEIS is Being Improperly Driven by the Applicant's Private Economic Interests.

NEPA requires federal agencies to "rigorously explore and objectively evaluate all reasonable alternatives" to a proposed action. 40 C.F.R. § 1502.14(a). In order to do so, the agency must first reasonably and objectively define the purpose and need of a proposed action. *See Simmons v. United States Army Corps of Eng'rs*, 120 F.3d 664, 666 (7th Cir. 1997) (citing *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 195–96 (D.C. Cir. 1991)). The chosen statement of purpose and need effectively dictates the range of alternatives evaluate in an EIS. *Id.*

"[A]n agency cannot define its objectives in unreasonably narrow terms." *City of Carmel-By-The-Sea v. United States Dep't of Transp.*, 123 F. 3d 1142, 155 (9th Cir. 1997). "An agency may not define the objectives of its action in terms so unreasonably narrow that only one alternative . . . would accomplish the goals of the agency's action, and the EIS would become a

foreordained formality. *Nat'l Parks & Conservation Ass'n v. Bureau of Land Mgmt.*, 606 F.3d 1058, 1070 (9th Cir. 2010). Moreover, an agency may not allow the economic needs and goals of a private applicant to define the purpose and need, and hence the inevitable outcome, of an EIS. *Id.*

Unfortunately, that is exactly what is happening with this EIS. The DEIS lists the applicant's "needs," including the "business needs of the applicant" (such as "diversifying the holdings" of the Applicant) as stated needs for the project, and lists no agency-defined objectives or needs other than complying with applicable laws. The DEIS fails to even acknowledge that the agencies have no obligation or responsibility whatsoever to meet the applicant's needs or desires. As a result, the Applicant-identified needs are defining and driving the characteristics of this project and the alternatives thereto. This approach is inappropriate and unlawful.

Interestingly, some of the Applicant-identified needs are suspect. For instance, the Applicant identifies a need for utilities in Washington State to provide more alternative energy to their customers. DEIS at 1-4–1-6. But nowhere has the Applicant specified or publicly committed to sell the electricity from this project within Washington State. As it stands, well over half of all the wind energy produced in Washington and Oregon is currently being sent to California. If a similar fate occurs with the electricity from the Whistling Ridge project, then the Washington state requirements for alternative energy are wholly irrelevant to the project. The applicant cannot have it both ways. It cannot assert that meeting Washington state renewable portfolio standards is a need for the project, and yet refuse to commit energy from this project to remain in Washington state.

The DEIS repeatedly states or implies that the project would reliably produce between 70 MW and 75 MW of energy. *See, e.g.*, DEIS at I-9, 3-90, 3-271. The DEIS significantly

overvalues the generating potential of the project. Wind energy facilities cannot continually generate energy at their rated capacity. Generally, wind energy facilities generate energy at 30% of capacity. So for this project, the actual energy output would be only 21 MW. Every assertion or implication in the DEIS that the Whistling Ridge project would produce 70 or 75 MW of energy must be corrected to reflect the likely actual production of the facility. This correction must also be reflected in the purported need to produce at least 70 MW of energy for the project to be marketable. In any event, the facility would likely deliver 21 MW of energy to the grid.

Further, the Applicant's purpose and need statement appears to be defined only in terms of conveying power from a wind energy generation facility. This purpose and need is too narrowly limited, and avoids the question of whether there truly is a need for a wind energy project. As a result, the purpose and need statement improperly limits the alternatives considered by the agencies.

As in the *National Parks & Conservation Association* case, the private economic interests of the Applicant are the driving force behind the purpose and need statement, and thus behind the entire DEIS. The narrowly drawn statement unreasonably constrains the possible range of alternatives, because it excludes alternatives that fail to meet the Applicant's specific private objectives, which are to build a wind energy project. The result of such a narrowly driven statement led to only two alternatives to be considered: the proposed action (authorizing construction and operation of the proposed Whistling Ridge Entergy Project and associated components) and the No Action Alternative (not authorizing construction and operation of the proposed project). This extremely narrow range of alternatives is unreasonable, and thus, violates NEPA.

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B. The Stated Purposes Fail to Acknowledge EFSEC's Duty to Protect State or Local Governmental or Community Interests.

One of EFSEC's mandates is to "protect state or local governmental or community interests affected by the construction or operation of the energy facility." WAC 463-64-020. Any site certification agreement must contain conditions to meet this mandate. *Id.*

The DEIS fails to even mention this mandate, let alone apply it. This mandate should be expressly included in the stated purpose and need for action on page 1-3 of the EIS, and should be applied and reflected throughout the DEIS.

C. The Range of Alternatives Considered is Inadequate.

The DEIS discusses only the Proposed Action Alternative (the proposed project) and the No Action Alternative. Such a truncated alternatives analysis violates the agencies' duties under NEPA and SEPA to fully review all reasonable alternatives.

"The purpose of NEPA is to require disclosure of relevant environmental considerations that were given a 'hard look' by the agency, and thereby to permit informed public comment on proposed action and any choices or alternatives that might be pursued with less environmental harm." *Te-Moak Tribe of Western Shoshone of Nevada v. United States Dep't of the Interior*, --- F.3d ---, 2010 WL 2431001 (9th Cir. 2010) (quoting *Lands Council v. Powell,* 395 F.3d 1019, 1027 (9th Cir.2005)); *see also* 42 U.S.C. § 4332(E) (requiring agencies to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources"). Agencies are required to consider alternatives in an EIS and must give full and meaningful consideration to all reasonable alternatives. *Id.; see also* 40 C.F.R. § 1508.9(b). "The existence of a viable but unexamined alternative renders an environmental impact statement inadequate." *Id.* (citing *Idaho Conservation League v. Mumma,* 956 F.2d 1508, 1519 (9th Cir.1992) (quoting *Citizens for*

a Better Henderson v. Hodel, 768 F.2d 1051, 1057 (9th Cir.1985)).

SEPA also requires an EIS to evaluate alternatives. RCW 43.21C.030(2)(c)(i). The applicable guidelines are found at WAC 197-11-440(5). An alternative considered for purposes of an EIS need not be certain or uncontested, it must only be reasonable. *King County v. Central Puget Sound Growth Management Hearings Bd.* 138 Wn.2d 161, 184-85, 979 P.2d 374, 385 (1999). A reasonable alternative is one that could feasibly attain or approximate a proposal's objectives at a lower cost to the environment. *Id.; see also* WAC 197-11-440(5)(b).

According to the applicable federal regulations, an EIS "shall inform decision-makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment." 40 C.F.R. § 1502.1. CEQ clarified the meaning of this requirement in its "Forty Most Asked Questions" policy guidance by defining "reasonable alternatives" as including "those that are *practical or feasible* from the technical and economic standpoint and using common sense, rather than simply *desirable* from the standpoint of the applicant." Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, 46 Fed. Reg. 18,026 (Mar. 23, 1981) (emphasis in original).

When selecting alternatives, an agency may *consider* an applicant's desires, but is not by any means bound or limited by them. It is not appropriate for an agency to rely on the "self-serving statements of the project applicants." *Southern Utah Wilderness Alliance v. Norton,* 237 F. Supp. 2d 48, 53 (D.D.C. 2002). Instead, the action agency must "to the fullest extent possible . . . study, develop and describe appropriate alternatives to recommended courses of action in any proposal which includes unresolved conflicts concerning alternative uses of available resources." *Id.* at 54 (citing 42 U.S.C. § 4332(2)(E)). Moreover, "[o]ther factors [other than the applicant's desires] to be developed during the scoping process—comments received from the public, other

government agencies and institutions, and development of the agency's own environmental data—should certainly be incorporated into the decision of which alternatives to seriously evaluate in the EIS." CEQ, Guidance Regarding NEPA Regulations, 48 Fed. Reg. 34,263, 34,267 (July 28, 1983).

Again, the DEIS analyzes the impacts of only two alternatives: 1) the proposed project, and 2) the no action alternative. These options advance the Applicant's goals, rather than the agencies' goals, to the exclusion of other reasonable alternatives. The DEIS is fatally flawed in its failure to consider an adequate range of reasonable alternatives. *See Muckleshoot Indian Tribe v. USFS,* 177 F.3d 800, 913 (9th Cir. 1999) (agency failed to consider an adequate range of alternatives when an EIS considered only a no action alternative along with two "virtually identical" action alternatives).

Various other alternatives should have been considered. First, at page 1-13 of the DEIS, the BPA did not consider any alternate locations for the wind turbine project other than those owned by the Applicant. Likewise, alternatives for interconnecting the wind project with transmission lines off of the project site were eliminated.

Indeed, under NEPA, the EIS may even have to look at alternatives over which the applicant has no control. *NRDC v. Morton,* 458 F.2d 827, 835 (D.C. Cir. 1972); *NWF v. NMFS,* 235 F. Supp.2d 1143 (W.D. Wash. 2002). Further, it is irrelevant whether an applicant already owns alternative sites for the purposes of NEPA review: "The fact that this applicant does not now own an alternative site is only marginally relevant (if it is relevant at all) to whether feasible alternatives exist to the applicant's proposal." *Van Abbema v. Fornell,* 807 F.2d 633, 638 (7th Cir. 1986).

As stated in the *Van Abbema* case, other alternatives for a project cannot be eliminated as non-feasible simply because the Applicant does not now own the site where an alternative location may exist. Here, SDS and Broughton Lumber own tens of thousands of acres of land in Oregon and Washington that could potentially be available for energy production purposes. The EIS fails to consider those lands, and fails to consider the possibility of applicant purchasing lands in other locations, such as east of the National Scenic Area, for an energy facility.

Similarly, SEPA also requires a discussion of alternate development sites for a proposed project in order to have an adequate discussion of reasonable alternatives. *See Barrie v. Kitsap County*, 93 Wn.2d 843, 855, 613 P.2d 11481155 (1980) (EIS was inadequate because it looked only at the use of the applicant's private property for siting a shopping center, and failed to discuss alternative development sites).

Here, alternate locations could provide comparable energy output. This approach would be consistent with the BPA stated goals of acting consistently with its environmental and social responsibilities and providing for cost and administrative efficiency. Surely other sites with far less impacts could easily be located. Not far to the east of this project site, thousands of wind turbines have been constructed recently, the vast majority of which pose far less resource impacts than the Whistling Ridge site.

Another potential site is immediately north of the proposed project site, on DNR lands. In fact, this property has been designated by WRE as "Phase 2" of the Whistling Ridge project. Although DNR has indefinitely placed on hold consideration of WRE's request for a wind power lease of this property, that does not mean use of the property is forever out of the question. In fact, recent emails by WRE representatives, obtained by Skamania County residents Keith Brown and Teresa Robbins in response to a public records request, indicate that WRE still

wishes to use the DNR property for wind energy. The DEIS fails to analyze the possibility of siting wind turbines on this property rather than on the SDS and Broughton Lumber land.

Second, the BPA did not consider alternate configurations (with fewer wind turbines and/or in different locations) for the project. On page 1-14, the DEIS states that "the project must be capable of producing a minimum of 70 MW" and that the project size "was selected to *optimize* . . . economic feasibility" (emphasis added). There are no financial data or projections provided to support this claim. Moreover, the agencies eliminated any alternatives that would have considered a smaller generation facility, for instance in order to address potential environmental impacts, solely in an effort to "optimize"[2] the applicant's economic wishes. Nor did the agency consider alternative locations for individual turbines that would reduce their impacts. This approach is unlawful and violates the agencies' legal mandates.

Third, the BPA did not consider other potential renewable energy sources in the DEIS. A dismissal of renewable energy sources other than wind energy, such as distributed generation, does not comport with the agencies' stated goal of acting consistently with their environmental and social responsibilities.

Fourth, no conservation alternatives were considered to eliminate the stated "need" for this 70 MW of installed capacity. Conservation alternatives, such as demand response technologies, also should have been included in order to meet the agencies' goals of promoting their environmental and social responsibilities.

Fifth, another reasonable alternative is one that analyzes and considers the future development of the proposal. WAC 197-11-440(5)(c) states that the EIS shall:

> (vii) Discuss the benefits and disadvantages of reserving for some future time the implementation of the proposal, as compared with possible approval at this time. The

[2] The *Webster's Dictionary* definition of "optimize" is "to make as effective, perfect, or useful as possible."

> agency perspective should be that each generation is, in effect, a trustee of the environment for succeeding generations. Particular attention should be given to the possibility of foreclosing future options by implementing the proposal.

The DEIS fails to comply with this requirement, because it fails to consider the possibility of delaying the development of wind energy until a later date, perhaps at a time when the energy grid will be more equipped to handle the addition of new wind energy sources.

The above alternatives were either eliminated from the study, or not considered at all, because the Applicant's economic needs, rather than the stated goals of the agencies, dictated the results of this DEIS. In effect, the agencies are violating their duties to consider all reasonable alternatives.

D. The Applicant and its Consultants Appear to Have Played an Improper Role in the Drafting of the DEIS, Leading to a Biased and Result-Oriented Document.

The agencies' ability to prepare an EIS that would provide a balanced and objective analysis, leading to a decision that addresses the interests of the general community and not just the Applicant, have become further compromised by an apparent decision to allow the same consultants who prepared the application on behalf of the Applicant to also prepare analytical content in the DEIS.[3]

Originally, the agencies stated that the Applicant and its consultants would be preparing the EIS. However, because the public objected to this arrangement and pointed out that it would violate NEPA, the agencies made the following announcement in the DEIS May 21, 2010 cover letter:

> While EFSEC and BPA are the entities that have prepared the Draft EIS, these agencies have worked collaboratively with Whistling Ridge Energy LLC to

[3] These consultants include employees of URS Corporation, West Inc., and others. Although several consultants who prepared the application also are listed in section 6 of the DEIS as "preparers" of the DEIS, none of them noted their role in preparing the application on their disclosure statements in Appendix F.

> obtain necessary information about the project and its potential impacts for the EIS. Initially, EFSEC had intended to allow Whistling Ridge Energy LLC to prepare the EIS, as allowed by SEPA; however, after public concern was raised, EFSEC and BPA decided that the lead agencies would be directly responsible for preparing the EIS. Accordingly, we have used environmental information provided by Whistling Ridge Energy LLC and its consultants in the EIS as appropriate. All such information has been independently evaluated and reviewed for accuracy by the lead agencies, as well as by an independent, third party consultant retained by EFSEC.

This statement invites more questions than it answers. What was the exact nature and extent of the involvement of WRE and its consultants in the preparation the DEIS? Did they simply supply environmental "information," as stated in the cover letter, or did they supply analysis, findings, and/or conclusions for the DEIS? Why does the DEIS adopt lengthy passages from the application verbatim or practically verbatim? If WRE and/or its consultants were allowed to write portions of the DEIS, will the agencies identify which portions? Were the applicant and/or its consultant allowed to review any portions of the EIS before it was made final, and if so, did they make any changes to it?

There is a major difference between the applicant's consultants supplying the agencies with information and data (such as species survey data, photographs, coordinates for turbine locations, etc.) and the applicant's consultants drafting analysis and conclusions to be inserted into the DEIS document. Unfortunately, the DEIS cover letter does not satisfactorily explain which scenario occurred, but the extremely biased nature of the DEIS in favor of the project strongly implies an active role by the Applicant's consultants in its preparation.

An attached May 28, 2010 email string further calls into question whether EFSEC and BPA staff actually wrote the content of the EIS, or allowed the applicant's consultants to write it. The emails show that a landscape architect with the U.S. Forest Service telephoned the EFSEC Site Manager "express[ing] concerns about the quality of the [visual resource] analysis." The

Forest Service employee asked EFSEC "who did the analysis," "what their qualifications were," and "whether or not a Landscape Architect was consulted during development of this section." Apparently not knowing the answer to these questions, the EFSEC Site Manager appears to have referred the questions to the Project Manager with URS Corporation, the Applicant's lead consultants.

As with the agencies' DEIS cover letter, this email string poses a number of questions. If EFSEC and BPA prepared the DEIS, why does it appear that EFSEC had to ask the Applicant's consultants who wrote it? If the agencies were directly responsible for the content of the EIS, why did they not know whether a landscape architect participated in its drafting? And as the Forest Service asked, who in fact "did the analysis," and what were their qualifications?

On the face of the email and the DEIS itself, it certainly appears as if the same people who wrote the application (*i.e.*, the Applicant's consultants) were also allowed to prepare the analysis reviewing the application. In fact, it appears that the entire scenic resources analysis section of the application, including all analysis, findings, and conclusions, was simply lifted from the application and inserted verbatim into the DEIS. Although the agencies claim to have "prepared" the content of the DEIS and independently reviewed and verified any information from the applicant, by all outward appearances this did not occur—at least with major sections of the DEIS. Rather, it appears that the Applicant's consultants were allowed to write major portions of the DEIS. If so, then the Applicant has been allowed to exert undue influence over the content of the DEIS. The predictable outcome is a DEIS that, in effect, serves as an extremely biased and result-oriented prospectus for the proposed project exactly as proposed by the Applicant, instead of the searching and balanced decision-making document required by NEPA and SEPA.

NEPA case law and guidance are clear that an applicant, such as Whistling Ridge Energy, should not be allowed to influence the analytical content of an EIS. *See, e.g., Sierra Club v. Sigler*, 695 F.2d 957, 962 n.3 (5th Cir. 1983) (expressing serious concern over role of private firm in preparation of EIS). An EIS must be an entirely objective analysis intended to aid the decision maker and the public in understanding the consequences of an agency decision. Thus, it is standard practice for action agencies to ensure that applicants for federal action are insulated from all aspects of EIS preparation other than providing information.

Any arrangement that allows the very same consultants who drafted the application to also draft analytical content for the DEIS is improper and cannot be allowed to continue. If in fact the agencies have been relying on the Applicant's consultants (rather than agency employees) to draft analytical content for the DEIS, then the agencies should immediately withdraw the DEIS, and should either retain new consultants unaffiliated with the applicants to prepare a revised DEIS or should ensure that a revised DEIS is drafted by disinterested agency employees. The Applicant and its consultants must not be allowed to continue to play a direct and significant role in the preparation of factual and legal conclusions in the EIS. Such a role is improper and invalidates the DEIS as the basis for further decision-making.

The agencies also state that they have hired a third-party consultant who has been charged with independently verifying the content of the DEIS. However, it is ultimately the agencies' responsibility, and not that of any consultants, to independently verify the DEIS's content. The agencies are "responsible for the independent verification and use of the data, evaluation of the environmental issues, and . . . the scope and content of the environmental assessment." *Save Our Wetlands v. Sands*, 711 F.2d 634, 642 (5th Cir. 1983). Given the

extremely biased nature of this document, Friends questions whether the agencies are meeting this responsibility.

II. The DEIS Does not Demonstrate that EFSEC and BPA Consulted with Agencies with Expertise in the Resources that Would be Affected by the Whistling Ridge Energy Project.

EFSEC must consult with agencies with expertise in the resources that may be impacted by the proposed development. RCW 43.21C.030(2)(d); WAC 197-11-408(2)(a). SEPA requires that the agency "utilize a systematic, interdisciplinary approach" to environmental review. RCW 43.21C030(2)(A). EFSEC's SEPA regulations also require that EFSEC works with interested agencies throughout the preparation of the DEIS. WAC 463-47-140(5).

Similarly, NEPA requires that BPA request comments from federal agencies with special expertise in the resources that would be affected by the proposed development. 40 C.F.R. § 1503.1(a)(1). NEPA requires that the BPA seek comments from state agencies and tribal governments. 40 C.F.R. §1503.1(a)(2). The NEPA regulations also requires that federal agencies respond to requests for comments: "Federal agencies with jurisdiction by law or special expertise with respect to any environmental impact involved and agencies which are authorized to develop and enforce environmental standards shall comment on statements within their jurisdiction, expertise, or authority." 40 C.F.R. § 1503.2. NEPA regulations also require that BPA prepare the DEIS "concurrently with and integrated with" required consultations. 40 C.F.R. § 1502.25(a).

Despite these clear, abundantly sensible requirements, the DEIS fails to show consultation with agencies that have expertise in the resources that would be impacted by the proposal. In fact, comments from expert agencies conveying substantial concerns about significant adverse impacts from the proposal were summarily ignored. These agencies were not

even listed under the "Environmental Consultation" section of the DEIS, nor in the Distribution List for receiving copies of the DEIS after they commented. *See* DEIS at §§ 4.0, 5.0.

EFSEC and BPA are unambiguously required to seek comments from agencies with expertise in the resources that would be impacted. Federal agencies with special expertise have a nondiscretionary obligation to respond to those requests with comments. Agencies with expertise in the resources that would be affected include the USDA Forest Service, which administers portions of the Columbia River Gorge National Scenic Area and the Lower White Salmon Wild and Scenic River Area, and the National Park Service, which administers the Lewis & Clark National Historic Trail, the Oregon Pioneer National Historic Trail, and the newly designated Ice Age Floods National Geologic Trail. As administrators of these areas, both agencies have expertise in evaluating impacts to scenic resources and historically important viewsheds.

Both of these agencies submitted comments during the scoping process. Both comments pointed out that the project would cause significant adverse impacts to scenic resources and recommended mitigation measures, including removal of turbines from Scenic Area viewsheds as seen from designated key viewing areas. These comments have been summarily ignored. The DEIS demonstrates an utter failure of the agencies to follow through with the requirements of NEPA and SEPA, as well as the agencies' duties to protect environmental values and surrounding communities, by responding to these expert agencies' comments.

The scenic resources that would be affected by the proposal are of national significance. This warrants the utmost care in consulting with expert agencies to ensure that the decision-making agencies have impartial and objective analysis of the likely impacts to the environment.

The Forest Service has inventoried and ranked the viewshed that would be directly affected by this project, and has the expertise to measure the impacts of the proposal on this

landscape. Thus, the Forest Service's inventories and conclusions are directly relevant to the scenic resource impacts analysis for the project. Portions of the viewsheds that would be affected have been identified by the Forest Service as having the highest rankings for scenic values. This includes "outstanding" scenic diversity, "primary" landscape significance, and "critical" landscape sensitivity. The Forest Service staff has special expertise in evaluating how the development would impact these landscapes, and must be consulted.

It is of paramount importance that both EFSEC and the BPA address the Forest Service's scoping comments and seek further clarification from the Forest Service regarding the likely project impacts. Given the level of study already performed by the Forest Service with respect to the affected scenic resources, the DEIS does a disservice by not incorporating that information into the environmental review.

Swift v. Island County established the importance of taking expert agency comments into consideration during SEPA review. *Swift v. Island County,* 87 Wash. 2d 348, 552 P.2d 175 (1976) (en banc). In *Swift* the court ruled that an Island County determination of non-significance violated SEPA because the finding conflicted with the comments of other agencies and experts. The agencies and experts included "the United States Department of the Interior, Fish and Wildlife Service; State Parks and Recreation Commission; State Department of Game; State Department of Ecology; the Central Whidbey Island Historic Preservation Advisory Committee" and an authority on birds. 87 Wn. 2d at 355. Just as Island County ignored expert agency comments in *Swift*, EFSEC is completely ignoring expert agency comments in the present matter.

EFSEC and the BPA should also address whether expert agencies have altered or withheld comments due to pressure from elected officials. Documents obtained through public

records requests and submitted by Keith Brown and Teresa Robbins have uncovered e-mail chains evidencing political interference and muzzling of agency experts at the direct request of the applicant. This episode underscores EFSEC's and BPA's legal and moral obligations to ensure that thorough and complete expert agency consultation is obtained regardless of the political connections of the proponent.

The Applicant has asserted that the expert agencies are somehow attempting to improperly assert control over private land outside their jurisdictions. This is entirely inaccurate. Simply put, the agencies have expertise in the resources that would be affected by the proposed development, and therefore must be consulted pursuant to NEPA and SEPA. The consulting agencies simply help the action agencies understand and evaluate the harm to the environment that would result from this proposal. The Applicant apparently fundamentally misunderstands the role of consulting agencies under NEPA and SEPA.

The National Park Service's interest in the affected resources is evidenced by the Management Plan for the Lewis and Clark National Scenic Trail and recent mission statements that accompanied notices that the Park Service will be revising the Lewis and Clark Trail Management Plan: "Certain segments of the Lewis and Clark National Historic Trail *retain characteristics and a sense of place as seen and experienced by the original expedition and continue to provide opportunities for similar experiences today.*" Lewis and Clark Trail Master Planning Newsletter (July 27, 2010) (emphasis added). "Today the Missouri, Clearwater, and Columbia Rivers, their watersheds, and the overland routes across the Rocky Mountains have changed, however, *the natural resources and ecosystems that remain intact are fundamental to the experience of this Trail. These complex resources are critical to providing the context within which modern visitors experience the Trail and the story of Lewis and Clark.*" Lewis and Clark

Trail Master Planning Newsletter (July 27, 2010). The Park Service certainly has the mandate and the expertise to comment on the likely impacts of the project.

EFSEC and BPA should also actively solicit comments from the Oregon Department of Transportation and the Oregon Parks and Recreation Department. These agencies manage the Historic Columbia River Highway, which is listed on the National Register of Historic Places as a National Historic District. The proposal would adversely affect views from the Historic Highway, harming the scenic, recreational, and historical values of the resource. These agencies are also coordinating plans to restore abandoned sections of the Historic Highway as part of the "Milepost 2016 Reconnection Project," which furthers the goals of the Historic Columbia River Highway Master Plan, portions of which are attached hereto. The impacts to these efforts, in terms of impacts to historical interpretation opportunities and scenic resources, must be acknowledged and consulted on.

EFSEC and the BPA must also consult with the Columbia River Gorge Commission, which manages the landscape and regulates land use and development in the immediate vicinity of the project. The DEIS mentions the Columbia River Gorge National Scenic Area Act in the "Environmental Consultation" section, but does not mention consulting with the Gorge Commission. DEIS at 4-9, § 4.11. This section should be revised to accurately reflect the regulatory framework for the National Scenic Area. This section states that the General Management Area of the Scenic Area includes a mixture of "farming, logging, residential, and cattle grazing" land uses. DEIS at 4-9. The section should be revised to state that the General Management Area also includes public recreation and commercial recreation uses along with some of the most sensitive open space areas. EFSEC and the BPA must also consult with the Gorge Commission regarding any regulatory review that would be required to ensure compliance

with Scenic Area Act standards for the portion of the project located within the National Scenic Area—namely, the proposed haul route.

The DEIS at 3-141 and 3-194 also quotes 16 USC § 544*o*(a)(10), which states that the Scenic Area Act does not, "of itself," authorize the creation of any buffer or protective perimeter. This provision does not prohibit expert agencies from using the National Scenic Area's resource inventories and regulatory standards as tools for measuring impacts to the environment.

Agencies with expertise regarding wildlife, including the U.S. Fish and Wildlife Service and Washington State Department of Fish and Wildlife, must be consulted. And the Washington Department of Natural Resources must be consulted regarding compliance with the Washington Forest Practices Act, which regulates the conversion of forested land to non-forestry uses. The Washington DNR must also be consulted regarding the feasibility of alternative siting locations on public land to the north of the current project area.

III. The DEIS Misquotes and Misrepresents the Language and Meaning of the Columbia River Gorge National Scenic Area Act.

The DEIS attempts to rewrite the Columbia River Gorge National Scenic Area Act to effect a dramatically different purpose than intended by Congress. This misrepresentation, if it goes uncorrected, would dramatically hinder EFSEC's and the BPA's ability to protect the public from adverse impacts to important local, state, and national resources. The DEIS includes the following passage that purports to quote the Columbia River Gorge National Scenic Area Act:

> The Act states that "*no protective perimeters or buffer zones shall be established around the scenic area or each special management area. Activities or uses inconsistent with the management directives for the scenic area or special management areas can be seen or heard from these areas shall not, of itself, preclude such activities or uses up to the boundaries of the scenic area or special management areas*" (16 U.S.C. § 544O(a)(10)).

DEIS at 3-194 (emphasis in original).

The above language, reprinted verbatim from the DEIS, seriously misquotes and misrepresents the Act. The actual language in the Act is as follows:

(a) *Nothing in this Act shall . . .*

> (10) Establish protective perimeters or buffer zones around the scenic area or each special management area. The fact that activities or uses inconsistent with the management directives for the scenic area or special management areas can be seen or heard from these areas shall not, of itself, preclude such activities or uses up to the boundaries of the scenic area or special management areas.

16 U.S.C. § 544*o*(a)(10) (emphasis added).

The first sentence of the misquoted Act in the DEIS completely changes the meaning of the statute. The intent to misrepresent is clear. The difference in the meaning of the true wording versus the quoted wording is significant.

The language in 16 U.S.C. § 544*o*(a)(10) provides that *nothing in the Scenic Area Act* shall establish protective perimeters or buffer zones. It does not, as the DEIS language states, outright prohibit protective buffers, for example under operation of some other local, state, or federal law. EFSEC and the BPA must apply numerous other laws in their decision-making, and must protect affected resources and communities. The misquoted language in the DEIS implies that Congress mandated that some other law or factor, independent of the Scenic Area Act, could not result in the protection of lands adjacent to the Scenic Area. This is absolutely incorrect. While the Scenic Area Act does not in and of itself impose buffers, neither does it prevent them under operation of other laws.

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IV. The DEIS Prematurely and Erroneously Concludes That the Project Would Be Consistent With the Applicable Land Use Regulations.

A. The Land Use Consistency Determination in the DEIS is Premature.

The DEIS concludes that "the proposed project would be consistent with the applicable land use regulations." DEIS 3-152. The DEIS further states that "the project would be consistent with the Comprehensive Plan vision and the Conservancy designation in that it would conserve and manage existing natural forest and wind resources to maintain a sustained yield and utilization of both." *Id.* These and all other statements in the DEIS regarding consistency with applicable land use regulations are premature, because EFSEC has not yet concluded its land use consistency process nor issued a determination as to whether the proposed project is consistent and in conformance with the applicable land use plans and zoning ordinances through the process required by WAC 463-26-110 and RCW 80.50.090(2). The DEIS erroneously contains consistency determinations long before the issue of consistency will be adjudicated in the land use process before EFSEC. EFSEC has effectively prejudged the consistency results by including its premature conclusions in the DEIS.

The DEIS should be revised to remove all conclusions as to land use consistency. Instead, the DEIS should state what the potentially applicable regulations are, and then state that EFSEC will reach a conclusion on consistency as part of its adjudicative process, and that the BPA will decide whether it concurs with that determination. At most, the DEIS could summarize the different arguments that have been made to date regarding the applicable regulations. But prejudging consistency long before the consistency process is complete is inappropriate and a violation of Friends' right to a fair and impartial adjudicative hearing.

Contrary to the conclusions in the DEIS, the project is *not* consistent with applicable land use requirements. Friends will continue to address, via EFSEC's adjudicative process, the many

reasons why the project is not consistent with the applicable land use requirements. Rather than restate Friends' arguments at length in the instant comments, Friends relies on its previous submissions to EFSEC, as well as its briefing to the Skamania County Hearing Examiner in the prior administrative appeal involving Skamania County's proposed (now abandoned) energy zoning amendments (County File No. SEP-08-35),[4] except as modified or supplemented below. Friends also adopts and reiterates all arguments of Save Our Scenic Area regarding land use consistency.

B. The Application and DEIS are Inconsistent and Incomplete Regarding the Proposed Haul Route through the National Scenic Area.

The Application and DEIS are internally inconsistent and incomplete regarding the proposed haul route through the National Scenic Area. The specialized trucks for hauling wind energy turbine components for this project are both massive and heavy; these trucks may have trouble navigating certain intersections and bridges. The application and DEIS do not clearly establish which route is proposed through the National Scenic Area, and whether that route would entail any road construction or ground-disturbing activities within the General Management Area of the National Scenic Area. The information that *has* been made available about the haul route is internally inconsistent and does not comply with EFSEC's rules for a complete application.

EFSEC rules require, among other items, the application to include information about traffic and transportation impacts:

> (1) Transportation systems. The application shall identify all permanent transportation facilities impacted by the construction and operation of the energy facilities, the nature of the impacts and the methods to mitigate impacts. Such impact identification, description, and mitigation shall, at least, take into account:

[4] Copies of all the relevant documents from both proceedings are attached hereto as exhibits.

* * *

(b) Access routes for moving heavy loads, construction materials, or equipment;

* * *

(2) Vehicular traffic. The application shall describe existing roads, estimate volume, types, and routes of vehicular traffic which will arise from construction and operation of the facility. The applicant shall indicate the applicable standards to be utilized in improving existing roads and in constructing new permanent or temporary roads or access, and shall indicate the final disposition of new roads or access and identify who will maintain them.

* * *

WAC 463-60-372.

The original application proposed two alternative haul routes through the National Scenic Area, Routes 1 and 2. The amended application adds a third alternative haul route, Route 3. Amended Application at 2.19-3. The DEIS adopts Route 3 as the haul route for the project. DEIS at 1-12.

At page 1-16, the DEIS states that both Routes 1 and 2 have been "eliminated as . . . construction roadway access alternative[s]." However, at page 3-172, the DEIS states that Route 1 (the Ausplund Road Route) "would be used to access the [project site] for construction and maintenance." The agencies need to address this inconsistency, and clarify the extent to which Routes 1 or 2 would be used, if at all, for this project.

Moreover, a number of unanswered questions remain regarding Route 3, and specifically whether this route would involve any road construction or ground-disturbing activities within the General Management Area of the National Scenic Area. This route includes an aging bridge on Cook-Underwood Road across the Little White Salmon River and within the GMA. In the attached November 6, 2009 letter submitted to the Gorge Commission, WRE freely admits that "[t]he County has not yet determined whether any modifications or repair of [this] bridge would

be required" to enable the bridge to be used for the haul route. Furthermore, there is no evidence in the application or in the record, such as engineering schematics or a discussion of the bridge's load-bearing capacity, to establish whether construction work on the bridge will be necessary for this project.

In addition, an intersection of particular concern is the eastern intersection of Cook-Underwood Road and SR-14. WRE's initial application states that road construction, including road widening, "would be required" at this intersection in order to provide a sufficient turning radius for oversized trucks hauling wind turbine components. Original Application at 4.3-13. WRE provided specific numbers for the necessary width of the inside turning radius. *Id.* According to WRE, "[w]idening would include removal of guardrail and an engineered fill section on the inside of the turn, and an engineered fill section and a possible embankment cut section." *Id.* In addition, "[t]he engineered fill and embankment cut sections . . . would require an all-weather driving surface." *Id.* Finally, "[r]ight of way ownership and easement determination would be required." *Id.*

Then, after Appellants filed an appeal with the Gorge Commission of the County's decision on the initial application, WRE abruptly made a 180-degree reversal on whether road construction is required at this intersection. Even though WRE still proposes to use this intersection as part of its preferred haul route, WRE in the amended application has deleted all language discussing the necessary road work and replaced it with language summarily concluding that no road construction will be necessary along the haul route. Amended Application at 4.3-14. When asked to explain the rationale behind these discrepancies, WRE merely stated in its November 6, 2009 letter that "[n]o roadway improvements *have been identified* as being needed at either the west or east intersection of SR-14 and Cook-Underwood

Road." (emphasis added). This unhelpful statement completely ignores, and is in fact contradicted by, WRE's previous statements that road improvements at the east intersection "*would be required.*" Original Application at 4.3-7 (emphasis added).

The western intersection of Cook-Underwood Road and State Route 14 is also important. The Applicant has proposed to use this intersection as part of the haul route, but has also not shown that road improvements at this intersection would not be necessary.

These distinctions are important, because if this project does in fact involve road construction or ground-disturbing activities within the GMA, such activities must be reviewed by Skamania County under the Scenic Area laws and rules for whether they are allowed and for the protection of resources. SCC § 22.06.010.

The agencies need to require better information about the proposed haul route, and resolve whether any road work would in fact be necessary. If so, Scenic Area review and a decision by Skamania County will be required.

V. The Environmental Impact Analysis in the DEIS is Seriously Deficient.

A. The DEIS Fails to Give Adequate Consideration to Cumulative Effects.

The consideration of cumulative effects in the DEIS is inadequate. A cumulative impact is the "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions." 40 C.F.R. § 1508.7. NEPA requires that an EIS assess cumulative impacts in sufficient detail to be "useful to a decision maker in deciding whether, or how, to alter the program to lessen cumulative impacts." *City of Carmel-By-The-Sea v. U.S. Dep't. of Transp.*, 123 F.3d 1142, 1160 (9th Cir. 1997). The cumulative impacts analysis for a proposed project must examine past, present, and proposed/reasonably foreseeable actions in the same area. 40 C.F.R. §§ 1508.7, 1508.25, 1508.27(b)(7); *Tomac v. Norton*, 433 F.3d 852, 864 (D.C. Cir. 2006).

Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. 40 C.F.R. § 1508.7. "To consider cumulative effects, some quantified or detailed information is required. Without such information, neither the courts nor the public, in reviewing [an action agency's] decisions, can be assured that the [agency] provided the hard look that it is required to provide." *Neighbors of Cuddy Mountain v. U.S. Forest Service*, 137 F.3d 1372, 1379 (9th Cir. 1998). The cumulative effects of the proposed action, combined with the cumulative effects of other proposed actions, must be described in detail. *Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 810 (9th Cir. 1999). Broad and general statements "devoid of specific, reasoned conclusions" are not sufficient; neither are one-sided cumulative impact statements. *Id.* at 811.

As an initial matter, the geographic scope used in the DEIS to examine cumulative impacts is internally inconsistent and arbitrary and capricious. On the very same page (1-36), the DEIS contains two different geographic standards for measuring cumulative impacts. First, under Existing Development, the DEIS properly sets the geographic scope for wind power development as extending from Cascade Locks to the intersection of I-84 and I-82. Then, on the very same page, under Reasonably Foreseeable Future Development, the DEIS arbitrarily limits itself to projects within 20 miles from the Whistling Ridge project site. This internal inconsistency is arbitrary. Many of the existing wind projects more than 20 miles away contribute to adverse cumulative effects in conjunction with the proposed Whistling Ridge project. For instance, these existing wind projects can be seen in same viewshed as the Whistling Ridge site, as viewed from locations within the Gifford Pinchot National Forest such as Little Huckleberry Mountain. The arbitrary limit of 20 miles also means that certain pending projects such as Windy Flats West, which may have similar impacts on the National Scenic Area to those

of Whistling Ridge, but which is 26 miles away, are being improperly excluded from the impacts analysis.

The attempt in the DEIS at identifying and evaluating the cumulative impacts is sorely lacking. The DEIS fails to consider adequately the past, present, and reasonably foreseeable future impacts of other projects in the area. First, the DEIS does not adequately catalogue or discuss the impacts of past projects on the area, as it is required to do under NEPA. *City of Carmel,* 123 F.3d at 1160. Rather, it arbitrarily limits itself to considering only other wind projects, and even then relies on a rough and incomplete list of existing wind projects that discusses generalities, without providing the information necessary to complete the reasoned analysis that NEPA requires. Second, the DEIS fails to catalogue or analyze the impact of numerous planned or ongoing development projects, including wind projects and other types of projects.

For example, the DEIS fails to consider the cumulative impacts of the proposal in relation to the following planned and ongoing projects:

- The DEIS, at pages I-36 and 3-265–266, relies only on a wind power map and list found at http://www.nwcouncil.org/maps/power/Default.asp. The map relied on by the DEIS is severely incomplete, missing multiple wind energy projects within the project study area, including but not limited to Windy Flats West, Windy Flats, Windy Point II, Miller Ranch, Hoctor Ridge, Imrie, Linden Ranch, Miller North, Windtricity, Harvest Wind, School Section, Golden Hills, Golden Hills Addition, Golden Hills 2, Golden Hills 3, Biglow Canyon 2, Biglow Canyon 3, Nook Wind, Star Point, Shepherds Flat, Shepherds Flats 2, Shepherds Flat 3, Shepherds Flat 4, Shepherds Flat 5, Pebble Springs, Willow Creek, Montague I,

Montague II, Condon Wind, Summit Ridge, Baseline, Saddle Butte, Echo Wind, and PáTu. The DEIS fails to consult multiple other maps and lists of wind projects in the region, let alone the documents pertaining to those projects such as environmental impact statements. As a result, the cumulative impacts of this project in conjunction with other wind projects in the region is grossly underestimated. Maps and lists of other wind projects can be found at http://www.klickitatcounty.org/planning/FilesHtml/windprojects.pdf, http://www.oregon.gov/ENERGY/SITING/review.shtml, and http://www.transmission.bpa.gov/PlanProj/Wind/documents/BPA_wind_map_2010.pdf and are being filed as Exhibits herewith.

- The applicant here, Whistling Ridge Energy, desires to construct an additional 35 turbines on DNR lands immediately adjacent to the north of this project. This project, known as "Saddleback" or "Whistling Ridge Phase II," has been placed on hold by the DNR, but that hold could be removed at any time. The DEIS states that "use of these lands for project turbines was rejected from further consideration." DEIS at 1-14. However, recent public records requests have uncovered new evidence that the use of DNR lands is still contemplated by WRE. Specifically, the attached April 9, 2010 email shows that WRE was evaluating whether a temporary FAA moratorium on certain wind projects would prohibit expansion onto the DNR lands. The DEIS fails to sufficiently address the likelihood of Phase II of this project going forward, and fails to address the cumulative impacts of expanding the scope of this project onto the adjacent land. All phases and portions of a project must be evaluated at the outset during

environmental review of the first phase. *See Merkel v. Port of Brownsville*, 8 Wn. App. 844, 850–51, 509 P. 2d 390, 395 (1973); *Indian Trail Property Owner's Ass'n v. City of Spokane*, 76 Wn. App. 430, 443, 886 P.2d 209 (Wn. App. 1994).

- The Broughton Lumber Company has proposed a 250-unit housing development and recreation resort at the site of its defunct lumber mill in Skamania County, Washington. The site is in the same viewshed as the proposed Whistling Ridge Project.
- A casino is proposed in Cascade Locks, Oregon. If built, it would induce unprecedented amounts of traffic through the National Scenic Area. The cumulative impacts of this project, including the high volumes of casino traffic in conjunction with the heavy and oversized load truck traffic potentially travelling along I-84 for the Whistling Ridge project, was not considered.
- Every year, multiple residential dwellings are approved in the same viewshed as the proposed Whistling Ridge Energy Project. This cumulative scenic impact is not even mentioned, let alone estimated, by the DEIS.
- The DEIS acknowledges that the footprint of the project is within working timber lands, but fails to discuss the cumulative impacts of clearcuting forest in conjunction with permanently converting forest land for industrial use. Washington DNR Forest Practice applications in the vicinity of the project include FPA 2702000, FPA 2702622, FPA 2702784, FPA 2702862, FPA 2703252, and FPA 2704427. The DEIS does not address the cumulative impacts of the massive clearcutting that has occurred or the impacts of those forest practices in conjunction with converting forest land to non-forest use.

- In addition to the forest practices in the immediate vicinity of the project, the DEIS must include evaluation of impacts of the project in conjunction with forest practices in the region. To date the northern spotted owl habitat conservation plan is not succeeding in recovering northern spotted owl populations. Since this project would permanently convert forest land within a Spotted Owl Special Emphasis Area (SOSEA) to non-forestry use, the DEIS must undertake additional analysis of how the industrialization of portions of the SOSEA will affect spotted owl populations within the entire SOSEA and the region.
- The Blue Bridge Pipeline has been proposed to be constructed in the vicinity of the project. This proposal is currently under review by the Federal Energy Regulatory Commission under Docket No. PF09-10-000. The project could involve permanent linear clearcuts in the vicinity of the project.
- Three towns in the Columbia River Gorge National Scenic Area have proposed expansions of their urban area boundaries into Scenic Area lands. These are Hood River, The Dalles, and Lyle. If approved, these urban expansions would result in population growth, more traffic, loss of farm land, forest land, open spaces, and likely adverse effects to scenic, natural, cultural and recreation resources.

These projects and others not analyzed in the DEIS will have cumulative impacts on environmental and socioeconomic factors. In order to adequately evaluate the impacts of the proposed project, the DEIS must consider these current projects. Failure to do so means that the DEIS lacks sufficient detail to allow a decision maker to meaningfully evaluate the full impacts of the proposed project or to decide how to alter the proposal to lessen cumulative effects.

Also, as explained in the attached expert analysis by Dr. Shawn Smallwood, the cumulative impacts analysis in section 3.14.3.5 of the DEIS is methodologically flawed and the conclusions are misleading. Similarly, the cumulative impacts analysis of visual resources in section 3.14.3.10 of the DEIS is methodologically flawed and the conclusions are in error. Landscape architect and expert in visual resource assessment methodologies Dean Apostol has analyzed the DEIS and found the visual analysis woefully lacking and not up to professional standards. For example, the scenic resources cumulative impacts analysis evaluates only impacts to travelers on Interstate 84. While it underestimated the impacts to these views, it completely ignores the impacts to travelers on the Historic Columbia River Highway, the Columbia River, and other recreational resources in the vicinity. The cumulative impacts portions of the EIS are woefully inadequate and do not meet NEPA's or SEPA's requirements to conduct a rigorous and thorough analysis of cumulative impacts.

B. The DEIS fails to consider the direct and cumulative impacts of the proposed development on the energy grid and its infrastructure, and resulting impacts to natural resources.

Under SEPA, the elements of the environment include the built environment, which in turn includes public services and utilities. WAC 197-11-444(2)(d). The energy grid is part of the built environment and impacts to the grid must be considered during the SEPA process. The DEIS failed to adequately analyze impacts to the grid.

The DEIS discusses the need for the project to interconnect to the BPA transmission system, but fails to analyze the indirect and cumulative effects of new wind energy development on the grid and the need for new transmission facilities. DEIS at 3-87—92, 3-278. The DEIS states that the "proposed project would not be expected to affect the operation of the BPA's

transmission system." DEIS at 3-92. The cumulative impacts section of the DEIS makes no mention of the grid or how the project would affect demand for new transmission facilities.

Wind energy production in the region will ultimately be limited by the capacity of the Bonneville Power Administration to integrate new wind energy resources into the BPA electricity grid. Recently, BPA expressed concern about how it will reliably integrate over 6,000 MW of wind energy by 2013. Northwest Power and Conservation Council, Sixth Power Plan, at 12-11 (available at http://www.nwcouncil.org/energy/powerplan/6/default.htm). By adding more energy to the grid, the project increases the need for more capacity and more transmission lines and other infrastructure.

In response to the rapid development of wind energy in the region in recent years the BPA has proposed several new transmission projects. These projects are necessary to integrate the intermittent nature of wind energy and to ensure sufficient transmission capacity to transmit energy to the region and markets in other regions. BPA's own development plans demonstrate that the Whistling Ridge Energy Project would contribute to demand for transmission facilities and contribute to significant adverse impacts to the environment.

The BPA's own documents, some of which are attached hereto as exhibits, explain that the McNary-John Day transmission project and the Big Eddy-Knight transmission project are needed to respond to the demands that new wind energy facilities place on the grid.

To respond to the increased demand for interconnections to the grid, the BPA conducts annual Network Open Seasons where prospective energy producers can submit Transmission Service Requests (TSRs) to BPA. From these requests the BPA offers eligible producers Preferred Transmission Service Agreements (PTSAs). Based on these agreements the BPA calculates the demand for transmission services and the need for any new transmission facilities.

As shown in the attached exhibits, in response to the 2008 Network Open Season, the BPA signed PTSAs securing 6,410 MW of transmission capacity. And in response to the 2009 Network Open Season the BPA signed PTSAs securing 1,553 MW of transmission capacity. In 2010 alone the BPA received TSRs for 4,456 MW of wind energy development that would be eligible to sign PTSAs. If all eligible PTSA are signed and completed, the total new services provided by BPA will total over 12,000 MW, generate the need for hundreds of miles of new transmission lines, and the expenditure of millions of dollars in public funds. The Whistling Ridge Energy Project Project would directly contribute to these impacts. The DEIS must acknowledge and evaluate these impacts and the further impacts that flow from them.

The BPA must include actual data on the grid's capacity to accommodate new sources of intermittent wind energy. As stated above, the BPA has previously expressed concern about how it will reliably integrate over 6,000 MW of wind energy by 2013. Northwest Power and Conservation Council, Sixth Power Plan, at 12-11. The DEIS must include some analysis of how much wind energy the grid can accommodate over the long-term and whether wind integration capacity will limit the amount of wind energy development that can occur in the region. If integration capacity will limit generation potential, then the DEIS must address why the Whistling Ridge Energy Project should take priority over potential development in other locations that would have reduced environmental impacts.

Importantly, the BPA has failed to undertake comprehensive review of the impacts of its transmission system. The BPA's last comprehensive review of the transmission system was in 1995. BPA Business Plan Final Environmental Impact Statement (DOE/EIS-0183) (hereinafter "BPA BP EIS"). That review noted that wind energy could cause adverse impacts to wildlife and scenic resources, but did not undertake any detailed review of how providing access to the

transmission system would lead to impacts from the explosion of wind energy development throughout the region. BPA BP EIS at 4-42, Section 4.3.1. The BPA BP EIS also does not address how much wind energy can be integrated into the grid.

In 2007, the BPA undertook a supplemental analysis of the Business Plan EIS, but declined to undertake further environmental review. Supplemental Analysis of the Business Plan EIS (DOE/EIS-0183) (April 6, 2007). The supplement stated that "continued consideration of a comprehensive policy for BPA's transmission business is not in the best interests of the agency at this time." The supplemental analysis was based on four wind projects totaling 750 MW of wind energy that had been connected to the BPA grid at that time. *Id.* at 42. The analysis did not discuss impacts to wildlife from this development. *Id.* at 46. The analysis did not include a section on scenic impacts, much less how wind energy development enabled by the BPA has transformed scenic landscapes. The supplemental review also failed to acknowledge the ongoing impacts to cultural resources from the development that has been enabled by BPA transmission project. *Id.* at 48—49.

Since the BPA's last review of the environmental impacts associated with the transmission system and the energy production that system allows, an unprecedented level of new wind energy development was occurring throughout the region. Currently over 3,000 MW of wind energy has been interconnected to the grid. The BPA has signed PTSAs for as much as 12,000 additional MW of new generating capacity.

The impacts of this development have dramatically changed landscapes throughout thousands of acres of rural Washington and Oregon along with countless scenic vistas. This development is also killing or displacing an unknown number of birds and ongoing damage to cultural resources is occurring from the excessive ground disturbance and road building. Another

type of impact not anticipated or reviewed in the EIS is the potential overloading of the energy grid as a result of the dramatic increase in wind energy in the region, which can in turn affect fish populations by requiring an excess spilling of water over the region's hydroelectric dams in order to balance out unexpected surges in wind energy production.

This rapid expansion in wind energy has occurred without any programmatic review of the impacts of the generating sources, the existing transmission system, or the demands for new transmission lines. This has also occurred without an adequate understanding of how much wind energy development the grid can accommodate and how projects could be prioritized for grid access based on environmental impacts. These significant changes warrant preparation of a comprehensive cumulative impacts analysis. The DEIS must be substantially revised to reflect the project's contributions to the regional impacts of wind energy development.

C. The DEIS Fails to Adequately Evaluate and Address the Impacts of the Proposed Development on Scenic Resources.

SEPA requires that the environmental analysis include discussion of impacts to sensitive areas. The SEPA official "shall" consider whether a "proposal may to a significant degree . . . [a]dversely affect environmentally sensitive or special areas, such as loss or destruction of historic, scientific, and cultural resources, parks, prime farmlands, wetlands, wild and scenic rivers, or wilderness." WAC 197-11-330(3)(e)(I). SEPA also requires analysis of impacts to scenic resources. WAC 197-11-440(1)(e)(iv).

The current proposal is for a major industrial development towering over ridgelines on the perimeter of the Columbia River Gorge National Scenic Area, overlooking important segments of the Lewis and Clark National Historic Trail and the Historic Columbia River Highway, adjacent to the Gifford Pinchot National Forest, and adjacent to recreational trails on Washington Department of Natural Resources land. The proposed facility would overlook miles

of National Scenic Area viewsheds that have been inventoried as some of the highest quality scenic landscapes in the Gorge.

Unfortunately, the DEIS grossly mischaracterizes the likely impacts of the Whistling Ridge Energy Project on scenic resources. Instead of following SEPA's mandate to provide an unbiased and objective assessment of likely impacts, the DEIS blatantly misapplies established principles of landscape management to conceal the likely impacts of the proposed action. The analysis also violates NEPA's requirement that "[a]gencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements." 40 C.F.R. 1502.24. The DEIS does not list a single landscape architect, much less a landscape architect with training in scenic resource analysis methodologies, in the list of preparers. DEIS at Section 6.0. The lack of professional and scientific integrity is plainly evident through the scenic impacts analysis. The analysis is fundamentally flawed and violates both NEPA and SEPA.

As explained in the attached comments of Dean Apostol, the analysis completely misinterprets and misapplies the Federal Highway Administration's visual assessment system and the Forest Service's Scenery Management System. In addition, the analysis fails to consider impacts to several critical viewpoints and view corridors, reaches erroneous conclusions regarding the potential impacts on scenic resources, and fails to consider viable mitigation measures. Mr. Apostol concludes that the likely scenic impacts of the project would be significant because the project would highly contrast with an intact, high quality scenic landscape that is viewed by substantial number of viewers with high expectations for scenic quality. The project would break the skyline and/or be highly visible from multiple public vantage points and it is impossible to "blend in" wind turbines more than 400 feet tall into this

landscape. The DEIS also erroneously ties scenic sensitivity to distance zones. DEIS at 3-159. Low, moderate, and high impacts can occur in any distance zone depending on the impacts analysis.

The environmental review failed to sufficiently analyze the visual impact of the project as viewed from linear viewing areas such as Interstate 84, the Columbia River, the Historic Columbia River Highway, the Lewis and Clark National Historic Trail, and State Route 141. For some of these scenic corridors basic information such as the distance along linear viewing areas from which the project would be visible, an estimate of the amount of time the project would be visible when traveling along these view corridors, and a simulation of the most visible portion of the project as viewed from these viewing areas is missing from the analysis. Of particular concern is the complete absence of any analysis of views from the Columbia River and the Historic Columbia River Highway.

The DEIS also fails to supply sufficient information to understand and review potential impacts from lights on the proposed wind turbines—particularly nighttime impacts. DEIS at 3-161, 3-173, & 3-195. While FAA lighting standards may be required, compliance with federal regulations does not obviate the duty to comply with state law requiring full disclosure of all environmental impacts. The applicant must document how many lights would be visible from within the National Scenic Area viewshed. The applicant needs to provide additional information regarding what type of lighting would be installed, and which turbines would likely contain lighting. Without this information, it is impossible to accurately evaluate the scenic impacts of the project.

The DEIS also fails to include a detailed explanation of both the methodology used to create the visual simulations and the proper technique for viewing the simulations. To begin

with, all visual simulations should be accompanied by substantial disclaimers regarding their ability to depict real-world impacts. Two dimensional renderings can never accurately simulate the experience of real-world views. Nonetheless, visual simulations do have value in evaluating aesthetic impacts if best practices are used in preparing the simulations and proper qualifications are noted. Lens size, field of view, the format of the image in the simulations, and the viewer's distance from the image all play critical roles in presenting an accurate depiction of aesthetic impacts. For example, the wider the angle of view of a camera lens, the further away an object appears, and the narrower the angle of view, the nearer an object appears. If digital cameras were used, image distortions would need to be factored in when preparing the image. Similarly, the size of the simulation image and the viewer's distance from the image can dramatically alter the perceived impacts of development. EFSEC and the BPA must require clarification on these points to ensure that the inherent flaws in visual simulations are explained.

EFSEC and the BPA should also consider the National Academy of Sciences' recent document entitled, Environmental Impacts of Wind-Energy Projects (National Academies Press, 2007), which includes methodology for analyzing possible impacts from wind development on aesthetic resources. The DEIS should be revised to include discussion of the various standards described in this resource, which was cited and applied in other sections of the DEIS.

The DEIS argues that the visual impacts from roads and electric lines would be negligible. DEIS at 3-173–3-174. However, road and power lines have direct visual impacts and also contribute to the cumulative impacts of a project. As such, they must be included in the visual simulation and analysis. In particular, road and electric lines would likely be highly visible when viewed from recreational areas to the north of the project. These include recreational trails in the Gifford Pinchot National Forest and on land owned by the Washington Department of

National Resources. Particular recreational areas of concern include the Nestor Peak, Little Buck Creek Trail, Grassy Knoll, Little Huckleberry Mountain, and Cook Hill.

The conclusions regarding scenic impacts in the application are clearly in error. The project would have high scenic impacts, given viewer expectations, and the quality of the views that would be impacted. The proposed development would dominate the middleground and background views from multiple important viewpoints.

Not only did the DEIS fail to adequately review scenic impacts, it also failed to propose any mitigation or discuss any unmitigated adverse impacts that would occur. Measures and conditions that should have been, but were not, evaluated include alternate designs and siting to reduce visibility.

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1. The DEIS Fails to Acknowledge Existing Scenic Resource Inventories and Visual Quality Objectives for the Affected Landscape.

The DEIS analysis of scenic impacts states that visual quality objectives (VQOs) have not been established for the landscape that would be affected by the proposed development. DEIS at 3-156. This assertion is demonstrably false. The Forest Service and Gorge Commission have established VQOs for the landscapes that would be affected by the proposed development. These VQOs are based on some of the most extensive and complete scenic resource inventories in the country. These VQOs must be used to measure the impact to viewsheds that would be altered by the proposed development.

In preparing the Management Plan for the National Scenic Area, the Gorge Commission and the Forest Service were required to inventory scenic resources of the National Scenic Area. *See* 16 USC 544d.(a)(1)(A). Pursuant to that mandate the Forest Service and Gorge Commission completed a scenic resource inventory using the Forest Service's Visual Management System

("VMS"), which is the scenic resource management methodology provided in the Forest Service's "National Forests Landscape Management Vol. 2" (Agriculture Handbook 462).[5]

All viewsheds visible from primary key viewing areas were inventoried. These inventories served as the basis for all scenic resource management policies and guidelines in the CRGNSA Management Plan. The original scenic resource inventory includes the following elements: Visual Attributes, Landscape Diversity, Landscape Significance, Seen Areas from Key Viewing Areas, Visual Absorption Capability, and Landscape Sensitivity. The 1991 CRGNSA Management Plan described the inventories:

> Six maps were developed in the process of inventorying scenic resources. These maps are based on the Forest Service Visual Management System. They have been used to develop policies and guidelines that respond to the various levels of visual significance and sensitivity within the Gorge, and that highlight protection of landscapes seen by large numbers of people.
>
> The first inventory map created, "Visual Attributes," identifies 12 predominant landscape types found in the Gorge, ranging from rural townscapes to cliffs.
>
> The "Landscape Diversity" map gauges the variety of visual features in the landscape. A basic premise of the visual management system is that visual diversity is a key element of those landscapes people find most visually appealing and interesting. Much of the Gorge, with it steep landforms, forested slopes, waterfalls, pastoral areas, and rural townscapes, has outstanding visual diversity.
>
> A "Seen Areas" map shows which areas are visible from key viewing areas. The key viewing areas are important public vantage points from which Gorge landscapes are viewed. Scenic protection of lands seen from these vantage points has been emphasized since the inception of the Scenic Area planning process. The Management Plan continues this direction.
>
> The "Landscape Significance" map combines the "Seen Areas" and "Landscape Diversity" maps, based on the concept that the most significant landscapes are those that are both visually diverse and seen from important viewpoints. The "Visual Absorption Capability" map displays the relative ability of different Gorge landscapes to absorb change (through new development) without

[5] The Visual Management System has since been superseded by a revised methodology, the Scenery Management System ("SMS"). The methodology for the SMS is described in "Landscape Aesthetics: A Handbook for Scenery Management." (Agriculture Handbook 701).

> diminishing their scenic qualities. It is based primarily on the degree of slope and amount of vegetative cover.
>
> "Landscape Sensitivity," the last of the six inventory maps, combines "Landscape Significance" with "Visual Absorption Capability," based on the assumption that the most visually sensitive lands are those that are both highly significant and most vulnerable to visual impacts from new development.

CRGNSA Management Plan 1991, at I-1—2. Copies of the inventory maps of the affected landscape are attached to these comments. The CRGNSA Management Plan policies and guidelines that were based on these inventories include the land use designations and landscape setting designations that serve as VQOs.

This background is critical to evaluating the impacts of the proposed development on scenic resources. As seen from the Columbia River, Interstate 84, and the Historic Columbia River Highway the project would break the skyline within viewsheds composed of both SMA Open Space and GMA Open Space land use designations that are also assigned the landscape setting of Gorge Walls, Canyon Lands, and Wildlands. For the SMA viewsheds the applicable VQO is retention, the highest level of scenic protection afforded any landscape in the Gorge. For the GMA viewsheds the applicable VQO is partial retention, with the added protection essentially creating a VQO of retention.

The view from Interstate 84, the Columbia River, and the Historic Columbia River Highway between Starvation Creek State Park and Viento State Park looking north and northeast is dominated by the Dog Mountain SMA and the Underwood Bluff Open Space.[6] The proposed facility would be visible just to the east of the Dog Mountain SMA and north of the Underwood Bluff Open Space area. The attention of visitors traveling along these three scenic corridors would be drawn to the spinning blades and/or blinking lights of numerous wind turbines

[6] Both Starvation Creek State Park and Viento State Park are also designated under the Lewis and Clark National Historic Trail Management Plan.

protruding above the skyline to the northeast. This would obviously detract from the integrity of the viewshed and completely frustrate the purpose of the extensive inventories and protections for this viewshed.

Stationary viewers at Mitchell Point would also be confronted with a dramatic change to the landscape. The view from the Mitchell Point area looks directly north at the Underwood Bluff Open Space area. The original scenic resource inventories assigned Underwood Bluff as "outstanding" landscape diversity, "primary" landscape significance, and "critical" landscape sensitivity. These are some of the highest valued lands inventoried in the Columbia River Gorge and justified a VQO that is essentially retention, the highest standard for protection. The ridgeline of Underwood Bluff forms the skyline from this viewpoint. The contours of Chemawa Hill undulate immediately behind the skyline and are nearly indistinguishable from the Underwood Bluff skyline. Underwood Bluff and its highest rated scenic resources, with Chemawa Hill immediately behind it, dominate the middleground views from this location. The southernmost turbines of the proposed facility would be sited at the top of Chemewa Hill and would break the skyline of views from the Columbia River, Interstate 84, and the Historic Columbia River Highway at this location. Once again, viewers' attention would be drawn to giant spinning blades and/or flashing lights in middleground views of some of the most scenically sensitive views in the Columbia River Gorge.

The DEIS completely failed to acknowledge the robust and complete inventory of the scenic landscapes that would be affected by the proposed development. The existing resource inventories and established VQOs must be used to measure the impacts that would be caused by the proposed development. Based on this information, it is undeniable that the proposed development would cause significant adverse impacts to critically important scenic landscapes.

In addition, the DEIS failed to state whether the project would impact views from the Gifford Pinchot National Forest that have established VQOs.

2. The Scenic Impacts Analysis Deviates from BPA's Past Practices in Evaluating Scenic Impacts.

The application and environmental review diverges from the BPA's analyses of scenic impact for other energy projects in the region. The BPA's Draft EIS for the Central Ferry-Lower Monumental 500-kilovolt Transmission Line Project concluded that construction of a 200-foot-tall transmission line within viewsheds as viewed from the Lewis and Clark National Scenic Trail and the Lewis and Clark Scenic Byway would have "high" impacts to scenic resources. Central Ferry-Lower Monumental 500-kilovolt Transmission Line Project DEIS (July 2010) Section 3.7, p 3-91 to 3-104 (hereinafter Central Ferry DEIS). The Central Ferry transmission lines would be 104 to 189 feet tall and would have no moving parts and no lights. Central Ferry DEIS at 2-5. The BPA acknowledged that the transmission line would be visible from the Lewis and Clark National Historic Trail and scenic byways.

The Central Ferry DEIS described the affected landscape as "Typical view[s] of rolling hills and rural landscape adjacent to scenic by way." Table 3-22. The analysis explained that the transmission line would be 1.6 miles (middleground view) from the Lewis and Clark National Historic Trail at its closest point. Central Ferry DEIS at 3-98. The analysis also acknowledged that the transmission lines would create a skyline effect and break up the continuity of the skyline and open terrain, and that the project would introduce structures into a natural landscape. Central Ferry DEIS at 3-98. "The proposed towers and conductors would be a conspicuous change to the relatively natural and rural landscape and would disrupt the continuity of visual resources in the landscape." Central Ferry DEIS at 3-98. The project would be visible from "popular recreation areas and a frequently traveled roadway." Central Ferry DEIS at 3-98.

In comparison to the Central Ferry to Monument Transmission Project, the Whistling Ridge proposal would be located in a higher quality scenic landscape, with more state and federal designations for scenic, recreational, and historic importance. The project would be viewed by vastly more people with higher expectations for scenic quality. Whistling Ridge would be of comparable distance from important viewpoints, but would be over twice as large (over 430 feet tall compared to 104 to 198 feet tall), have more visible mass, include giant moving parts, include flashing lights, and would be painted white. The Whistling Ridge project would obviously contrast more with the landscape than the Central Ferry project. While the Central Ferry DEIS concluded that impacts would be high, the Whistling Ridge DEIS concludes that impacts to scenic resources would be moderate at worst.

It is abundantly clear that this project has not been reviewed under the same standard as previous projects under BPA review. This evidences an obvious attempt to thwart the purposes of SEPA and NEPA with environmental review that seeks to conceal impacts rather than objectively analyze impacts.

The adverse impacts of energy development, transmission lines in particular, were also acknowledged in the BPA's Business Plan EIS. BPA Business Plan Final Environmental Impact Statement (DOE/EIS-0183) (hereinafter BPA BP EIS). The Whistling Ridge would include transmission lines and analysis of impacts from transmission lines is equally applicable to scenic impacts analysis for industrial wind energy development. The Business Plan EIS stated:

> In areas used for recreation, particularly in undeveloped places, studies show that many users find transmission lines to be an unwelcome visual intrusion. Also, many citizens feel strongly that transmission lines near their homes are visually intrusive, and that some property values may be reduced. Adverse visual effects may be perceived up to several kilometers from the line. Transmission lines may be more compatible with industrial areas. The effectiveness of potential mitigation measures depends on the site, and some measures may substantially increase the cost of the project. Possible measures include darkened towers in

> forested areas; different tower designs more compatible with a particular environment; non-specular (nonshiny) conductor; and locations that avoid visually sensitive areas.

BPA BP EIS at 4-52, Section 4.3.2.6. The Business Plan EIS also explained that one of the main environmental risks of wind energy development is visual impacts. BPA Business Plan EIS at 4-42, Section 4.3.1. The BPA has previously relied on this environmental review when approving interconnections to the grid. How the BPA can acknowledge adverse impacts from transmission lines, but ignore adverse impacts from wind energy facilities, is inexplicable.

3. Views from the Lewis and Clark National Historic Trail would be adversely affected.

The Lewis and Clark National Scenic Trail was created to "stimulate Federal, State, and local agencies and individuals to identify, mark, and preserve for public inspiration and enjoyment the routes traveled by the Lewis and Clark Expedition." Lewis and Clark Trail Management Plan at 1. The Management Plan for the trail recognizes that many of the historic and cultural resources have been altered or lost and the Expedition left scant traces of their passing. However, "In a very real sense, many of the historic resources are the *landmarks*, *vistas*, flora, and fauna that make up the Trail's natural resources. It is virtually impossible to find either historic or natural resources along the Expedition route, which have not been altered in some way by man or nature." Lewis and Clark Trail Management Plan at 4 & 13. Thus, the scenic vistas and natural resources of the Expedition route are critical to appreciating the trail. Locations where those vistas and natural resources are intact are exceedingly rare, and warrant the greatest attention during SEPA and NEPA review.

The Columbia River segment, which includes the portions of the Trail that would be affected by the Whistling Ridge project, was designated for three types of trail development: a water trail, a land trail, and a motor route. The Columbia River, Interstate 84 and Washington

State Route 14 are designated routes. The Management Plan notes that there was a "nearly continuous string of recreation sites along this segment." Lewis and Clark Trail Management Plan at 70. Individual sites within sight of the Whistling Ridge Energy Project include Viento State Park, which is directly across the Columbia River from where the Lewis and Clark Expedition camped on October 29, 1805 and April 13, 1806, and Starvation Creek State Park. L & C Management Plan at 74.

The DEIS fails to acknowledge adverse scenic impacts to the Lewis and Clark National Scenic Trail. Locations along the route with intact scenic vistas that retain some of the same views that the Lewis and Clark Expedition experienced are critical important resources for the trail system. The views from I-84, the Columbia River, Viento State Park, and Starvation Creek State Park are largely intact as evidenced by the Forest Service's resource inventories. The project would dramatically alter these views causing significant adverse impacts to the trail. This conclusion was clearly expressed by the National Park Service in at least two separate letters to the BPA and EFSEC. This conclusion is also supported by the BPA's previous environmental analysis of other projects that would have similar, although less severe, impacts on the Lewis and Clark National Historic Trail. The egregious failure to acknowledge significant adverse impacts to the Lewis and Clark National Historic Trail must be corrected.

D. The DEIS Fails to Adequately Review the Likely Impacts of the Proposed Development on Natural Resources.

The Whistling Ridge project is likely to cause significant adverse impacts to natural resources, including the direct impacts of mortality to wildlife, as well as indirect effects from habitat destruction, displacement, and species avoidance of the project area after construction. Avian species often collide with wind turbines, and bats often die from internal hemorrhaging caused by the massive changes in air pressure near the spinning blades of a wind turbine, a

process known as "barotrauma." Also, components of the industrial development, including collector lines, transfer stations, and access roads, can displace wildlife and fragment habitat. The DEIS failed to adequately analyze the likely impacts to wildlife and other natural resources.

In addition, as demonstrated in the written testimony of Dr. K. Shawn Smallwood (attached herein), the underlying data and environmental analysis relied upon in the DEIS is severely flawed. For example, without any scientific support the DEIS states that the clearcut project area is poor habitat for wildlife. However, Dr. Smallwood points out that "[b]ird species diversity is much greater at Whistling Ridge than at the Altamont Pass, where bird fatalities caused by wind turbines are notoriously high." Whistling Ridge surveys found more than 1 species per hour of searching, whereas surveys at Altamont found 0.036 species per hour. The proponents' ploy to clearcut the land and present a devastated ecosystem immediately before applying for an industrial energy facility is misleading and results in biased conclusions in the DEIS. As Dr. Smallwood concluded, based on independent analysis of the proponent's own surveys, "Whistling Ridge exhibits a very high level of ecological integrity." This is likely a result of the projects locattion within a largely intact ecoregion where species diversity remains high. This is also why the Klickitat County Energy Overlay Zone excluded forested areas.

Dr. Smallwood also points out contradictions between foundational statements and the conclusions in the DEIS. For both Keen's myotis and Townsend's big-eared bat, the DEIS states that the analysts had insufficient knowledge of the species, but nonetheless concluded that it was unlikely that they would occur at the site. DEIS at 3-59–60. It is plainly inappropriate to base conclusions on insufficient information. At best, the DEIS should say that impacts to bat species are unknown and then analyze the worst case scenario given that uncertainty..

The DEIS seriously underestimates the potential impacts of this project, both on an individual basis and when considered cumulatively with other wind energy projects. Dr. Smallwood has determined that the baseline studies to assess impacts were cursory and inadequate, the likely impacts to raptors are significant, the cumulative impacts analysis was biased and unrealistic, and the mitigation measures are inadequate.

The DEIS also failed to ensure the protection of wildlife and has failed to adequately review impacts to natural resources in a number of other ways, as described below.

1. The DEIS Fails to Include Best Available Science in the Analysis.

The avian impacts analysis is inadequate and not based on the Best Available Science. The baseline surveys were too cursory to support a scientifically credible baseline assessment. Failings include an inadequate sample and an inadequate amount of time dedicated to surveys. Avian utilization of a site can vary greatly from year to year, so the limited time span of these baseline surveys introduces large uncertainty into the resulting utilization rates. The sample sizes were grossly inadequate for what is needed for comparing bird utilization among project sites or for guiding wind turbine locations to minimize collision rates. Numerous other methodological errors in the analysis introduce additional biases that undermine the SEPA and NEPA review.

Wildlife surveys should be conducted using current state-of-the-art field and analysis protocol. At the least, surveys must take into account survey bias including, but not limited to, searcher efficiency, carcass "life expectancy" or persistence, and scavenger removal. The entire site should be surveyed before and after construction. Both pre-development survey and post-development monitoring should take into account the episodic nature of some bird migrations and nocturnal bird migrations. For example, long or inappropriately timed intervals between searches may miss a significant avian presence. The DEIS fails to account for these factors.

2. The DEIS Fails to Adequately Consider Displacement Effects on Avian Populations.

The DEIS failed to adequately consider displacement effects on avian populations. Impacts of wind projects on birds are not limited to collisions. When a landscape is industrialized by strings of giant machines, birds and other animals may be driven away rather than killed. And when multiple such strings are concentrated in one area, the impacts on species populations can be substantial. The environmental analysis is incomplete and must be supplemented with specific assessments of cumulative displacement impacts.

3. The DEIS Fails to Ensure Compliance with the Federal Endangered Species Act of 1973 ("ESA"), 16 U.S.C. §§ 1531–1544.

Under the ESA, "take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." 16 U.S.C. § 1532(19). Section 9 of the ESA prohibits both acts that would "take" a species, as well as acts that would cause an act that constitutes a "taking." The Ninth Circuit has held that "a habitat modification which significantly impairs the breeding and sheltering of a protected species amounts to 'harm' under the ESA." *Marbled Murrelet v. Babbit*, 83 F.3d 1060, 1067 (9th Cir. 1996). The DEIS failed to demonstrate that the project will be in compliance with Section 9 of the ESA.

The DEIS does state that there has been ongoing consultation with U.S. Fish and Wildlife Service. DEIS at 1-20. Pursuant to NEPA regulations the BPA is supposed to perform this consultation requirement "concurrently with and integrated with" preparation of the Draft EIS, not after the Draft EIS is complete. 40 C.F.R. § 1502.25. The results of this consultation process should have been included in the DEIS.

In Section 2.20.2.2 of the Amended Application, the Applicant states that a Biological Assessment will be prepared. The DEIS fails to make good on this promise. BPA and EFSEC

must ensure that a biological assessment is prepared, to better inform the agencies about potential adverse impacts to threatened and endangered species.

4. The DEIS Fails to Ensure Compliance with the Bald Eagle Protection Act, RCW Chapter 77.12, and Regulations Promulgated Pursuant Thereto, Located at WAC 232-12-292.

The DEIS fails to ensure compliance with the state Bald Eagle Protection Act, despite the presence of bald eagles and their habitat within and near the project site. There is no evidence that the Washington Department of Fish and Wildlife has been consulted pursuant to the Bald Eagle Protection regulations.

5. The DEIS Fails to Ensure Compliance with the Federal Bald and Golden Eagle Protection Act, 16 USC § 668–668d.

The DEIS fails to ensure compliance with the federal Bald and Golden Eagle Protection Act ("BGEPA"), again despite the presence of bald eagles and their habitat within and near the project site. The BGEPA prohibits any person, association, partnership or corporation from taking a bald or golden eagle at any time or by any manner without a permit. 16 USC § 668(a). A permit may be issued only if the taking would be compatible with the preservation of the species. *Id.* § 668a.

6. The DEIS Fails to Ensure Compliance with the Federal Migratory Bird Treaty Act, 16 U.S.C. §§ 703–712.

The Migratory Bird Treaty Act ("MBTA") requires that the U.S. Fish and Wildlife Service (USFWS) enforce the MBTA against "any person, association, partnership, or corporation" that "by any means or in any manner," pursues, hunts, takes, captures, kills or attempts to take, capture or kill a migratory bird or any part, nest or eggs of any migratory bird. 16 U.S.C. §§ 703, 707. Under the MBTA, a person may take or kill migratory birds only as permitted under USFWS regulations and based on the USFWS's determination that the take or

kill is compatible with the migratory bird treaties. *Id.* §§ 703, 704. The USFWS's determination must take into account scientific factors such as species abundance and distribution, migratory patterns, and breeding habits, as well as the economic value of birds. Id. § 704. The killing of a single migratory bird is sufficient to create criminal liability. *United States v. Corbin Farm Service*, 444 F.Supp. 510 (E.D. Cal), *aff'd*, 578 F.2d 259 (9th Cir. 1978). The killing of a migratory bird does not need to be intentional and the killing can occur "by any means or in any manner." *United States v. Moon Lake Electric Ass'n, Inc.*, 45 F.Supp. 2d 1070, 1075–79 (D. Col. 1999) (upholding the prosecution of a utility for unintentionally electrocuting and killing seventeen birds). The DEIS fails to ensure compliance with the MBTA.

7. Inadequate review of impacts to northern spotted owl populations.

The DEIS states that construction of the proposed facility will not directly impact spotted owl habitat. However, the DEIS fails to address whether the project will adversely affect dispersal habitat and migration corridors that are essential to sustaining genetic diversity of owl populations. For example, the Columbia River Gorge is a likely crossing location for owls moving north and south between Oregon and Washington. The project could also affect the east-west movement of spotted owls between valleys. The DEIS fails to adequately address whether a major industrial energy facility sited within spotted owl territory will adversely affect the species.

The DEIS also fails to address the permanent loss of forested lands within the White Salmon Spotted Owl Special Emphasis Area (SOSEA). The DEIS claims that the project would meet Washington state standards for the retention of sufficient habitat within the SOSEA, but it does not adequately review the impacts of *permanently* converting forest land to an industrial

use, and how that permanent conversion would affect the longterm viability of spotted owl habitat within the SOSEA.

8. Failure to demonstrate sufficient protections for non-avian wildlife and insects.

The application and threshold determination fail to demonstrate sufficient protections for sensitive and rare wildlife species, including a number of sensitive and rare species that the application notes have been observed within the project site. The DEIS also fails to evaluate potential impacts on insects such as butterflies. Here, the impacts are typically not from direct turbine strikes, but rather from habitat disruption or destruction. There are several species of butterflies of particular concern in this area, particularly the rare Western Oak Dusky Wing (*Propertius duskywing*).

9. The DEIS fails to include adequate mitigation measures.

The decisions fail to include adequate mitigation measures to protect wildlife. For example, the DEIS include discussion relating to future surveying for wildlife impacts, but fail to include any conditions that would require any concrete actions in response to actual wildlife impacts.

10. The DEIS misrepesents the climate change and air quality impacts of the project and of the no-action alternative.

The DEIS repeatedly asserts that if the Whistling Ridge Energy Project is not built, then adverse impacts to climate change and air quality would necessarily result. For example, the DEIS states that "[i]f the No Action Alternative is selected, the growing electricity needs of the region would continue to be met through a combination of other renewable development and a combination of additional fossil fuels." DEIS at 3-21–3-22. This completely false dilemma, in various forms, is repeated throughout the DEIS without any factual support.

In fact, the regional energy system will reduce greenhouse gas emissions and air pollutants regardless of whether this individual project is built, and primarily through conservation measures. The Northwest Power Planning Council's Sixth Power Plan, which will dictate the portfolio of energy production sources for the foreseeable future, has planned to meet 85% of new demand with conservation and efficiency measures over the next 20 years. Sixth Northwest Power Plan Overview at 1. The remaining 15% of new demand would be met with renewables. Notably, this would be achieved even while the Boardman coal-fired power plant is taken offline by 2020.

The Bright Future Report also provides some broader context for the supply and demand aspects of the regional energy grid. Bright Future Report, NW Energy Coalitions, Original Edition, March 2009 – Update 1, July 2009. The Bright Future Report analyzes how the region will meet its energy needs through 2050, factoring in the loss of the Boardman coal-fired power plant, the removal or reduced use of hydropower projects on the lower Snake River, and picking up that lost energy supply through conservation, efficiency, and clean new sources of energy. The Report's bottom line conclusions are that "[t]he region has enough renewable potential to more than meet all current and future power needs" and that the potential for affordable clean energy "[d]warfs" the need. Bright Future Update at 14, 15. Thus, foregoing the 21 average MW of production capacity that would result if the Whistling Ridge project is not constructed would be essentially irrelevant to the overall supply of alternative energy. Furthermore, there is absolutely no evidence in the record showing that the alternative to this particular wind project is continued use of fossil-fuel generation sources or new fossil-fuel generation sources. The real choice is between this particular wind facility and siting other wind facilities in alternative locations with fewer environmental impacts.

Thus, it is inappropriate for the DEIS to compare the likely impacts of a wind energy development to the impacts of fossil-fuel generation sources. The region's climate change goals and air quality goals will be achieved regardless of whether the Whistling Ridge project is constructed. Every statement asserting the false dichotomy between constructing the project and a future with higher carbon emissions and air quality problems must be removed from the DEIS.

E. The DEIS Fails to Adequately Review the Likely Impacts of the Proposed Development on Cultural Resources.

1. The DEIS Fails to Analyze Impacts to Cultural Resources and Fails to Integrate Adequate Consultation with Tribal governments.

The DEIS acknowledges that the BPA has an obligation under Section 106 of the National Historic Preservation Act ("NHPA"), 16 USC 470 et seq., to consult with Tribal governments about the likely impacts of the proposal. DEIS at 4-6. The BPA also explains that the "BPA's 1996 government-to-government agreement with the 13 federally-recognized Native American Tribes of the Columbia basin provides the guidance for the Section 106 consultation process with the Tribes." DEIS at 4-6. The Draft EIS explains that the BPA will conduct formal government-to-government consultation. DEIS at 3-204. The DEIS fails to acknowledge that NEPA regulations also require that the BPA must prepare the Draft EIS "concurrently with and integrated with" the required consultation under the NHPA. 40 C.F.R. § 1502.25(a).

SEPA requires EFSEC to consult with the Yakama Nation as well. Under SEPA, EFSEC is required to consider the likely impacts to cultural resources. "Cultural preservation" is an element of the environment that must be addressed through the SEPA process. WAC 197-11-444. In addition, the environmental checklist, which must be prepared for proposed actions, requires consideration of impacts to cultural resources. WAC 197-11-315; WAC 197-11-960. SEPA also requires that EFSEC consult with agencies with expertise in the impacted

environment. RCW 43.21C.030(2)(d); WAC 197-11-408(2)(a). EFSEC's SEPA regulations also require that EFSEC works with interested agencies throughout the preparation of the DEIS. WAC 463-47-140(5). The Yakama Nation's Cultural Resources Program is an agency with expertise in Yakama Nation cultural resources. Finally, the 1989 Centennial Accord between the State of Washington and federally recognized tribes mandates that EFSEC undertake government-to-government consultation with representatives of the Yakama Nation regarding the measures necessary for adequate environmental review and appropriate mitigation measures.

Based on the above-referenced sources of law, both EFSEC and BPA must engage in direct government-to-government consultation with the Yakama Nation. The BPA has already failed to comply with the NEPA requirements to integrate this consultation into preparation of the DEIS. *See* 40 C.F.R. § 1502.25(a). This consultation should have occurred months ago. Both EFSEC and the BPA have heard testimony from the Yakama Nation explaining that a cultural resources report was submitted in December 2009. There is no legitimate explanation for why this information was not included in the DEIS, which was issued in May 2010, or why government-to-government consultation was not undertaken concurrently with the environmental review process.

Industrial wind energy development in Klickitat County that has proceeded without adequate consultation and review for impacts to cultural resources has led to irreparable harm to cultural resources. This harm is evidenced by a media report in the *Yakima Herald-Republic* on the destruction of cultural resources during the construction of the Windy Point Wind Energy Facility in neighboring Klickitat County, a copy of which is attached hereto. EFSEC and the BPA must not allow this type of mistake to repeat itself. The agencies must perform adequate

consultation, analyze likely impacts, and ensure that Yakama Nation cultural resources would not be adversely impacted by the proposal.

2. The DEIS Fails to Demonstrate Compliance With the National Historic Preservation Act.

The project would be highly visible from the Historic Columbia River Highway ("HCRH" or "Historic Highway"). This invaluable historic treasure, built between 1913 and 1922, was the first road planned as a scenic highway in the United States. Today, the Historic Highway is listed on the National Register of Historic Places, as a Historic District, as a Scenic Byway, and as a National Historic Civil Engineering Landmark by the American Society of Civil Engineers. Even more significantly, the Historic Highway has been designated by the Secretary of the Interior as a National Historic Landmark for its "exceptional value as commemorating or illustrating the history of the United States." More than other historic places on the National Register, National Historic Landmarks are granted special protection against impacts caused by federal action. Indeed, section 110(f) of the National Historic Preservation Act ("NHPA") requires federal agencies to undertake, "to the maximum extent possible," such planning and actions as may be necessary to minimize harm to these properties.

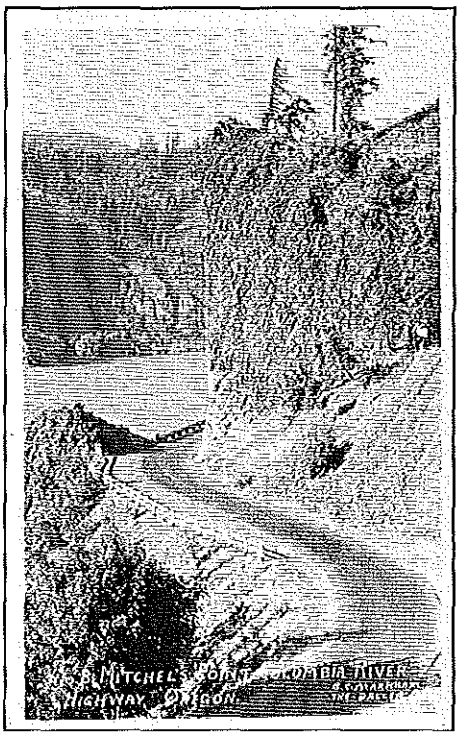
Portions of the Historic Highway are being restored by the Oregon Parks and Recreation Department ("OPRD") and the Oregon Department of Transportation ("ODOT") as part of the Historic Columbia River Highway State Trail. Acting on a 1987 directive by the Oregon Legislature to preserve and restore the Historic Highway, ODOT and OPRD are creating a series of long, narrow parks in the Columbia River Gorge that will be open to pedestrians, bicyclists, children, and people in wheelchairs, and closed to all motor vehicle traffic. More detailed information on the HCRH can be found in the "Historic Columbia River Highway Master Plan: HCRH Segments," a copy of which is attached to these comments.

It is important to note that the BPA is under special obligations with regard to protecting this National Historic Landmark. Section 110(f) of the NHPA provides as follows:

> Prior to the approval of any Federal undertaking which may directly and adversely affect any National Historic Landmark, the head of the responsible Federal agency shall, to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to such landmark, and shall afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking.

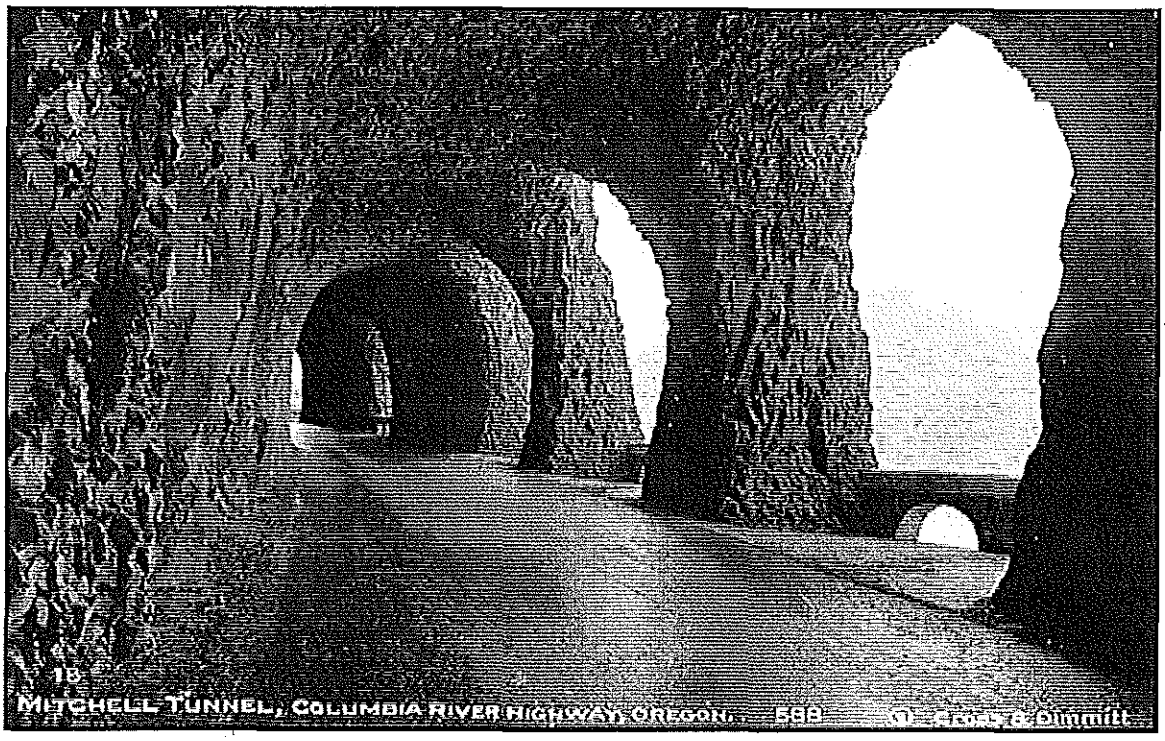
16 U.S.C. § 470h-2(F).

Section 106 of the NHPA and its implementing regulations adopted by the Advisory Council on Historic Preservation entitled "Protection of Historic Properties" (36 C.F.R. Part 800), describe agency responsibilities when an undertaking will affect properties listed in the National Register of Historic Places, including National Historic Landmarks.



The Whistling Ridge project would adversely affect views from the Historic Columbia River Highway. The HCRH was built as a scenic highway. Its historic features include design elements that accentuate views of the remarkable scenic landscapes of the Columbia River Gorge. Curves and pullouts in the HCRH were designed to focus the traveling public's attention on scenic landscapes. The highway includes substantial tunneling in numerous places, with tunnels designed to optimize views. The Mitchell Point Tunnel, known as the "Tunnel of Many Vistas," included multiple windows that presented views of the Columbia River, Underwood Bluff, Dog Mountain, the mouth of the Little White Salmon River,

and the diverse array of vegetative and geologic textures on these landforms. East of Mitchell Point, the HCRH traversed parallel to Underwood Bluff and crosses Ruthton Point, where the curve of the road presents spectacular views of the Columbia River, Underwood Bluff, and Dog Mountain, along with rural pastoral land above Underwood Bluff.



Other important segments of the HCRH include the segment between Starvation Creek and Viento State Park, which have the added importance of being part of the Lewis and Clark National Historic Trail. The HCRH segments from Hood River heading east include the Hood River Loops and the Mark O. Hatfield West Trailhead. This segment also includes spectacular views of the Gorge, particularly Underwood Bluff, Chemewa Hill, and Underwood Mountain to the north and northwest. To the east of the Mark O. Hatfield West Trailhead is the fully restored Hood River to Mosier segment of the HCRH. Several tunnels along this stretch have been reopened, fulfilling the plans of the HCRH Master Plan and setting an example for the ultimate

goal of restoring the entire Highway for recreation and historical interpretation. While the views from the West Trailhead to Mosier become more distant from the project the views are nonetheless highly important to the HCRH. Impacts from these locations are also likely to be high.

While the "Tunnel of Many Vistas" was destroyed during the construction of Interstate 84, segments of the original HCRH are present through this area. The sections that were lost are currently being restored and recreated through ongoing efforts of ODOT, the Oregon State Parks and Recreation Department, and Friends of the Historic Columbia River Highway. The "Tunnel of Many Vistas" will likely be re-created within the next ten years. If the Whistling Ridge Energy Project is constructed, the view from the "Many Vistas" would not include a historically intact landscape. Rather, the vistas would be transformed to include an industrialized skyline with moving parts and flashing lights less than 3 miles away.

The impacts to opportunities for historic interpretation and impacts to this National Historic Landmark were not analyzed in the DEIS. The proposed development would directly impact these views and undermine opportunities for historic interpretation. This constitutes a major adverse impact to the environment that needs to be reviewed and addressed.

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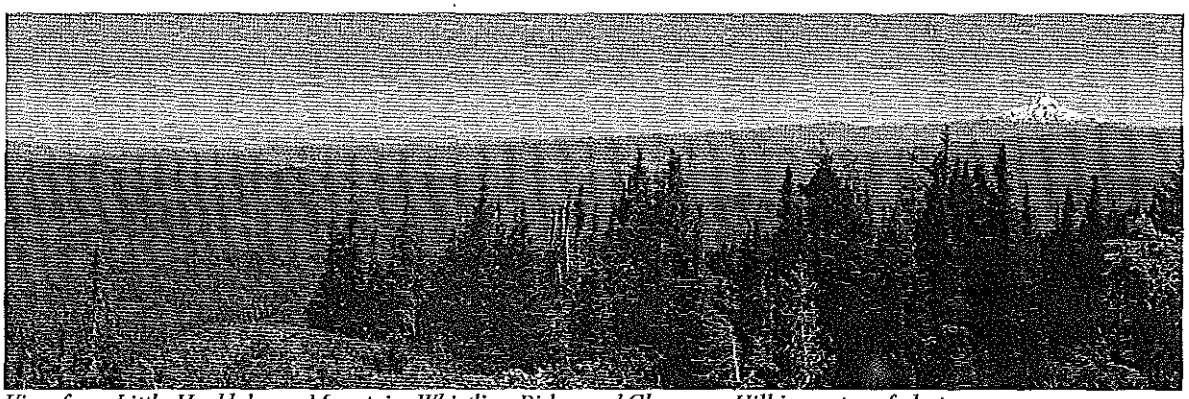
F. The DEIS Fails to Adequately Review the Likely Impacts of the Proposed Development on Recreational Resources.

The DEIS fails to adequately review the likely impacts to recreational resources. The project site is centered within a wide array of significant recreational resources, ranging from internationally recognized landmarks to local hikes with epic views. The DEIS fails to inventory all of the recreation resources in the vicinity and fails to adequately analyze the likely impacts to those resources.

The recreation resources in the vicinity include numerous locations to the south including the Columbia River Gorge National Scenic Area, The Lewis and Clark National Historic Trail, the Oregon Pioneer National Historic Trail, the Ice Age Floods National Historic Trail, the Historic Columbia River Highway Trail, Starvation Creek State Park, Viento State Park, Spring Creek Hatchery State Park, the Columbia River, the Mitchell Point Trail, Indian Head, and hiking along the Lower White Salmon River near the confluence with the Columbia. Locations to the north include the Lower White Salmon Wild and Scenic River, the Little White Salmon River, Nestor Peak, the Little Buck Creek Trail, the Grassy Knoll Trail, Cook Hill, Little Huckleberry Mountain, and numerous other hiking trails and drive-up viewpoints in and near the Gifford Pinchot National Forest. The DEIS fails to adequately inventory these resources.



View from Little Huckleberry Mountain. Whistling Ridge and Chemawa Hill in center of photo. Photo by Jozsef Urmos.

As explained above, the Lewis and Clark National Scenic Trail includes the Columbia River, State Route 14, Interstate 84, Starvation Creek State Park, and Viento State Park. The DEIS fails to acknowledge these components of the National Historic Trail. The DEIS fails to acknowledge that Starvation Creek State Park and Viento State Park also provide river access for wind surfing, kite boarding, motor boating, canoeing and other water activities. The DEIS also fails to acknowledge that the City of Hood River is an international hub for windsurfing and that the project would be visible from multiple windsurfing locations. The DEIS also fails to

recognize that the Little White Salmon River and the White Salmon River are internationally known in whitewater kayaking communities.

The DEIS states that "[o]n the Oregon side of the Columbia River, land use within the Scenic Area is predominately commercial timber production and residential." DEIS at 3-265. This is one of the more absurd errors in the DEIS. The Forest Service owns thousands of acres of public land within the Scenic Area on the Oregon side of the Columbia that is managed to protect natural resources and provide recreation opportunities, not for timber production. The leading land uses on the Oregon side of the Gorge, excluding urban areas, are conservation and recreation.

The DEIS states that "no parks or recreation facilities are planned within a 5-mile radius of the site, either as part of the Skamania County Parks and Recreation Master Plan or the Columbia River Gorge National Scenic Area Management Plan." DEIS at 3-139. This statement is patently wrong and ignores plans to restore and develop facilities at Mitchell Point as part of the Historic Columbia River Highway. While Mitchell Point is already owned by Oregon State Parks, the development proposals are certainly new and warrant acknowledgement.

The DEIS failed to give proper consideration to impacts to recreational resources, including a failure to analyze whether the project would be consistent with the Management Plan for the Lewis and Clark National Historic Trail and the Historic Columbia River Highway Master Plan, or the recreation resource provisions of the CRGNSA Management Plan. While these plans do not have direct regulatory authority over the project (assuming no ground disturbance would occur in the National Scenic Area), the goals and policies could be frustrated by the project. There needs to be at least a discussion of the potential impacts.

Project construction activities would generate traffic delays that would adversely affect recreational users. Countless residents in the gorge hike, windsurf, or kayak every day of the week and use the roads that would be used as a haul route for this project to access these recreational spots. Industrial traffic and associated delays would have an adverse impact on these resources. For example, use of the east access for Cook-Underwood Road for this project would block access to a recreational trail along the White Salmon River. Similarly, the west access for Cook-Underwood Road is regularly used by whitewater kayakers to access the lower three miles of Little White Salmon River, which has achieved legendary status due to the challenging rapids and consistent water flows. By failing to fully acknowledge such impacts and prepare a traffic mitigation plan for public review, EFSEC and the BPA have foreclosed the opportunity to evaluate the project's true impacts and inform the public of these impacts.

Project operation would also affect recreation. The DEIS section that addresses direct impacts of project development fails to mention recreation resources. DEIS at 3-153. Similarly, the cumulative effects section of the DEIS does not identify a single impact to recreational resources. DEIS at 3-279–3-280. The DEIS does acknowledge low to moderate impacts to views, but fails to acknowledge that scenery is typically a central part of outdoor recreation. As stated above, the scenic resource analysis was grossly inadequate.

Recreation resources that were not acknowledged through the scenic resource assessment include Little Huckleberry Mountain, Nestor Peak, and Cook Hill. These hiking areas provide dramatic panoramic views of Mount Hood and Washington's southern Cascades. Impacts to these resources were completely ignored.

The proposed development would be located in the heart of one of the greatest recreational destinations in the world. Windsurfers, kiteboarders, kayakers, and hikers come

from around the world to this area, and the Gorge itself is recognized as a national recreational treasure. Beyond the international and national fame, the area surrounding the project is home to people who hike, boat, bird, view wildflowers, and explore mountains and forests as a primary recreational pursuit. The project would be located in the middle of many of these activities. The recreational impacts analysis warrants substantial revision to reflect the actual impacts to recreational resources.

G. The DEIS Fails to Adequately Analyze the Likely Impacts to Agricultural Tourism.

The DEIS's analysis of potential impacts to agritourism is limited to a superficial comparison to wind energy development that has occurred in area between Walla Walla and Kennewick. DEIS at 3-151. The DEIS merely states that "[w]ind power and winery tourism already co-exist in the Columbia River Area. For example, four wind power facilities are located between Walla Walla and Kennewick (Canyon, Stateline, Vansycle, Combine Hills). This area is home to a thriving wind industry with over 60 wineries." DEIS at 3-151.

The DEIS provides no analysis of whether industrial wind development has caused any adverse impacts to wineries in that area, or whether the landscape and proximity of the two uses is even remotely comparable to the proposed Whistling Ridge project and existing agritourism activities in the area.

For example, the DEIS does not explain how close any of the wind facilities are to the 60 referenced wineries. For Whistling Ridge, the project would be within a mile of existing wineries, would dominate views, and may also be heard. Importantly, the DEIS does not even attempt to quantify the number of agritourism businesses in the Underwood community, nor how close they might be to the proposed Whistling Ridge project.

The DEIS fails to explain how many of the 60 wineries are open to the public, and thus how many support agritourism. Wineries in the Underwood area have tasting rooms and host commercial events.

The DEIS fails to provide any economic data evidencing business trends and property values for the 60 wineries before and after wind energy facilities were constructed in that region. Even if 60 wineries coexist with the wind industry in that region, that does not mean the agritourism industry in that region has not been affected by the wind industry.

In sum, the analysis of potential impacts to agritourism fails to provide any meaningful substantive analysis that can inform decision makers on the likely impacts of the proposed development.

H. The Transportation Impacts Analysis is Inadequate and Must be Revised to Include Alternatives that Avoid and/or Mitigate Impacts to the Underwood Community.

The DEIS must adequately review the likely impacts to the local and regional transportation system. The proposed development would generate thousands of vehicle trips through areas that are predominately used for recreation, agriculture, rural residential, and forest uses. Industrial development and land uses are prohibited in the areas that the proposed haul route would travel through. The transportation impacts would likely be substantial. Impacts would include significant delays due to increased traffic and the size of vehicles associated with the use. The vehicles associated with the proposal would also be incompatible with local uses.

Whistling Ridge would make thousands of vehicular trips across the proposed haul route, including the hauling of heavy construction materials and equipment exceeding the Washington State Department of Transportation's legal load limit of 52.75 tons. *See* RCW 46.44.041. There would be more than 1,700 trips using specialized over-sized trucks designed specifically for the

industrial purpose of hauling the enormous turbine components. These specialized trucks are up to 150 feet long, 17.5 feet high, and 14.5 feet wide. Since October 11, 2007, trucks longer than 125 feet in length have been prohibited on Washington SR-14 along the haul route.

In addition to the specialized trucks, other large and oversized trucks would be needed to haul construction equipment, plus three pilot vehicles for each truck wider than 10 feet, and construction worker vehicles. Although WRE has not yet proposed a total number for all vehicular trips along the haul route, the total number would likely exceed 10,000 trips. The specialized trucks and their frequent, heavy loads are expected to damage the roads along the haul route. Thus, WRE proposes to repair road damage resulting from the industrial hauling.

This massive intrusion of industrial construction equipment would run through rural residential, agricultural, and recreational areas. Given the impact to the community, EFSEC and the BPA should study alternative routes that would preclude or minimize the use of Cook-Underwood Road as it runs through the National Scenic Area.

In addition, the DEIS provides internally inconsistent information about the true extent of the traffic impact. At pages 1-29 and 3-233, the DEIS states that traffic flow could be restricted for up to 20 minutes during the construction phase. But at page 3-228, the DEIS states that traffic delays would increase by only six seconds as a result of this project. The agencies should explain the inconsistency.

I. The DEIS Fails to Adequately Analyze and Address the Potential Health Impacts from Wind Energy Facility Operation.

The nearest residence would be within one-half mile of the proposed facility. Numerous other residences would be in similarly close proximity. EFSEC and BPA must ensure that the DEIS includes adequate review of the likely impacts on neighboring properties.

Recent studies have shown a potential for wind energy facilities to cause adverse impacts to human health. Adverse health impacts could occur from low-frequency noise that interferes with inner ear functions resulting in dizziness, nausea, and loss of sleep. While the research is not conclusive, the uncertainty regarding health impacts of wind development warrant a precautionary approach to siting wind facilities near residential structures. The DEIS should include analysis of a variety of sources on the health impacts of wind energy development. EFSEC and the BPA should require that the facility be set back at least 1 mile from the nearest residence.

Friends also incorporates the comments of Keith Brown and Teresa Robbins regarding the potential noise and human health impacts of the proposed project.

CONCLUSION

The Draft Environmental Impact Statement for the Whistling Ridge Energy Project is grossly inadequate and fails to comply with the requirements of SEPA, NEPA, and other applicable laws. The DEIS has been heavily influenced by the preferences and biases of the Applicant to rationalize a predetermined outcome, not to provide an impartial and informed analysis of environmental impacts. The flawed document cannot be used as a basis for decision making and must be substantially revised before any conclusions on environmental impacts can be drawn.

The Whistling Ridge Energy Project is easily the most controversial and problematic wind energy facility proposed to date in Washington State. The project would cause significant adverse impacts to unique resources in both Washington and Oregon, including scenic, natural, cultural, and recreational resources. The affected resources include the Columbia River Gorge National Scenic Area, the Historic Columbia River Highway, the Lewis and Clark National

Historic Trail, the Oregon Pioneer National Historic Trail, sensitive wildlife species such as the federally listed northern spotted owl, sensitive Native American cultural resources, and multiple hiking trails and other recreational resources.

Because of these unique factors, the environmental review must be of the highest integrity. Unfortunately, this DEIS fails to take the hard look required by NEPA and SEPA. The DEIS is improperly designed so that the applicant's private economic interests unlawfully dictate the purpose, need, alternatives, and eventual outcome for the proposed action. The DEIS does not demonstrate that EFSEC and BPA consulted with agencies with expertise in the resources that would be affected by the project. The DEIS also misquotes and misrepresents the language and meaning of the Columbia River Gorge National Scenic Area Act, and prematurely and erroneously concludes that the project would be consistent with the applicable land use regulations. Finally, the DEIS fails to adequately evaluate the direct, indirect, and cumulative impacts of the proposed project.

The DEIS is so deficient that it cannot be used as the basis for a decision on the project. The proposed project should be denied outright, but if it is to be given further consideration, a supplemental or revised DEIS is required.

To: Bonneville Power Administration and Washington State Energy Facility Site Evaluation Council
Re: Draft Environmental Impact Statement for the Whistling Ridge Energy Project (DOE/EIS - 0419)
Date: August 19, 2010

This memo is intended to provide an independent professional evaluation of the Draft Environmental Impact Statement for the Whistling Ridge Energy Project, proposed to be located in the central part of the Columbia River Gorge near White Salmon, Washington. The memo is provided at the request of Friends of the Columbia Gorge.

Background

I am a professional landscape architect with over 31 years experience. I am currently employed as a Senior Landscape Architect by MIG Inc., a multi-disciplinary planning and design firm with over 100 staff in California and Oregon. My areas of professional emphasis include scenic resource assessment, natural resource planning, landscape ecology and ecological restoration. My clients have included the Oregon Department of Transportation, the U.S. Forest Service, the National Park Service, the Washington Forest Law Center, the Forest Stewardship Council, Metro, Friends of the Columbia Gorge, Western Resource Advocates and several private landowners located within the Columbia River Gorge National Scenic Area. Prior to entering private practice, I was chief landscape architect at the Mt. Hood National Forest. My work included having the lead role for management of scenic resources, and design of several projects within the Columbia River Gorge. I have included a more complete resume as an attachment.

I have reviewed the sections of the Draft Environmental Impact Statement (DEIS) that address scenic impacts, including maps, drawings, photos and simulations, and will focus my comments on scenic impacts. I am familiar with the general area from previous work in the Gorge.

Project Description

The proposal is to construct a wind energy project in the southeast portion of Skamania County, Washington, north and west of Underwood Mountain. Up to 50 commercial-scale wind turbines are proposed on forested land owned by SDS and Broughton Lumber Companies. According to the DEIS, the total land area involved is 1,152 acres, of which about 384 acres would be developed with turbines and associated facilities and roads. The proposed towers would each be over 400 feet tall, including three blades each up to 150 feet long. Analysis by the proponent demonstrates that most of the proposed turbines would be visible from multiple key viewing areas (KVAs) within the Columbia River Gorge National Scenic Area, as well as from other public and private viewpoints.

The project site lies within the Cascade Range, and is at the western edge of the Columbia Plateau. The landscape topography includes a series of ridges west of White Salmon that orient generally northwest to southeast and overlook the Columbia River and Hood River, Oregon. Current land use is commercial timber. The surrounding landscape is a patchwork of forest, brushfields, and meadows in varying stages of regeneration from timber harvest, as well as dramatic mountain vistas, steep rocky cliffs, pastoral lands, and the Columbia River. Landforms in the vicinity are steep, complex and dissected by deep ravines.

Wind Facilities and Aesthetic Impacts

Wind energy is still a relatively new type of land development, both in the Pacific Northwest and nationally. The first large-scale commercial wind energy project in the United States appeared at San Gorgonio Pass near Palm Springs, California in the early 1980s. This project and others in California (Altamont and Tehachapi passes) were and still are controversial, with aesthetic impacts often noted as a serious issue. The past few years have seen a significant number of proposals for wind energy development. Parts of the region, most notably the Columbia Basin, have already been visually transformed by the sheer number of turbines installed. Wind energy projects are land extensive, with single turbines needing 50 or more acres of free space around them. If present trends continue, hundreds of thousands of acres in Oregon and Washington will be developed with wind turbines within the next decade.

The fundamental aesthetic problem of commercial wind energy development is that it introduces very large-scale, modern, industrial structures into rural, semi-natural, or even wild landscapes. Due to their large scale and unique appearance, *modern wind turbines by their very nature result in high visual contrast to most landscapes.* High contrast normally results in high impacts to scenery. Wind turbines challenge conventional approaches to scenic resource conservation, which rely on eliminating or reducing the contrast of built facilities or landscape alterations. In most cases modern wind turbines cannot reasonably be "visually blended" into natural or cultural landscapes. They are inherently visually dominant due to their huge scale, unique appearance, high color contrast, moving parts and the need for continuous lighting for air safety.

Key factors in assessing the visual impact of wind turbines include:

- The number of visible turbines and the extent to which they dominate vertically and horizontally.
- The visual coherence or sense of order they present. Because they tend to be so prominent, turbines have to "make sense" within the view.
- Wind turbines look best in simple, open, low relief landscapes like farm, prairie or rangeland. They fit uncomfortably in highly complex landscapes with lots of vertical relief and diverse vegetation patterns, like the Columbia Gorge.
- Roads and power lines serving turbines can add substantially to visual impacts of wind energy developments.
- Turbine placement may include other landscape disruptions, particularly land clearing and ground disturbance.

There is little question that the vertical and horizontal scale of modern wind turbines has the power to transform entire landscapes. The huge size of individual towers and the horizontal scale of large projects can create substantial impacts even when viewed from distances of 10 miles or more.

Page 3-172 of the DEIS states: "wind turbines are relatively large." Commercial wind turbines are *very* large, out of scale with anything in the landscape around Underwood. They are nearly as tall as the tallest buildings in downtown Portland, and they do not look like any rural building or structure in existence. Modern wind towers and blades are nothing like the historic, small-scale, vernacular windmills of the Netherlands, Crete and Portugal. They feature sleek, industrial designs. They are large enough, different enough, and high contrast enough, to transform the surrounding landscape from predominantly natural or rural into an industrial scene.

Wind turbines are not designed to be place-sensitive. Energy companies are focused on maximizing productivity and minimizing costs. Thus, a one size fits all approach is used, and custom design is almost never considered. Wind facilities are context-free, meaning they look the same anywhere. And while they may be perfectly appropriate as an expression of their own function, they do not aesthetically fit in many landscapes.

Every landscape includes the basic elements of form, line, color and texture that provide visual identity. Forms result from large and small scale elements interacting to create spaces. They can be regular or irregular, curvilinear or geometric. Lines are linear features, like roads or the edge of a clearing. Natural colors tend to include greens, browns, tans and blues. Textures can be rough, smooth, fine or coarse grained. To the extent that landscape changes or new objects repeat these elements, contrast is reduced between the proposed development and natural landscape character. This in turn results in less of a visual impact. Large arrays of modern wind turbines easily dominate over the form, line, color and texture of scenic natural and cultural landscapes. It is extremely difficult to relate them to existing landforms, vegetation patterns, and natural lines in ways that reinforce or harmonize. They introduce strong vertical lines and have a color and texture unlike anything that is found in most natural landscapes.

Ridgelines are places where the land meets the sky, and where the viewer's eye is easily drawn. Wind turbines, including those proposed for the Whistling Ridge Energy Project, are often located on high, visually prominent topographic points, causing them to extend far above the horizon and create "skyline" impacts that accentuate their visibility. This detracts from surrounding landforms. One reason wind turbines look more at home on flat or gently rolling topography is the absence of conflict with prominent land forms, such as those found around the project area. The rotating blades of wind turbines are another unique feature that attracts additional attention. Lighting (including both nighttime and daytime lighting) accentuates visual impacts and extends them to all hours.

Flawed Methodologies

On 3-155 of the DEIS: "It assesses the potential for visual impacts using accepted methods of evaluating landscape quality and predicts the type and degree of effects the project likely would have on those attributes." Two methods were used: The U.S. Forest Service Landscape Aesthetics Handbook and the Federal Highway Administration (FHWA) process for visual impact assessment.

In my opinion, the FHWA method is not a suitable method for evaluating the visual impacts of wind energy projects in general, and this project in particular. This system was designed to be used only for assessing impacts from highway related development. It contains no process or method for assessing the visual contrast presented by wind turbines or related energy facilities (such as power lines). This is stated in the very title of the FHWA manual: *Visual Impact Assessment for Highway Projects*, and is explicitly noted in the opening sentence on page one: "This field guide is intended to help those who prepare or review the coverage of visual impacts in environmental assessments *for highway projects*" (emphasis added). Unlike the Forest Service and BLM methods, the FHWA process is not a flexible method that can easily be adapted to different project types. The mere fact that other wind projects have used it in the past does not justify its continued misuse.

Like all visual impact assessment methods, the FHWA contains terminology, approaches and ideas that can be borrowed or used elsewhere, but the proponent seems to have gone beyond mere borrowing and has assumed this method is more adaptable than it is. The decision to use this method seems based on a single factor, that it is used in lands that do not have assigned visual quality objectives. The flaws and

limitations of the FHWA method have been overlooked. Moreover, visual quality objectives for viewpoints within the Scenic Area exist. Although the Scenic Area Act does not apply these VQOs outside the Scenic Area, they are a useful way of measuring the scenic impacts of the project on the affected landscape pursuant to NEPA and SEPA.

Both the Forest Service and BLM visual assessment methods were designed and have been gradually adapted and refined to address numerous impact types. Though neither method anticipated giant commercial wind turbines, both have been used to review utilities, dams, mining and other energy related infrastructure. The BLM visual contrast method in particular has proven to be very useful and adaptable to assessing wind turbine development.

Yet on page 3-156 of the DEIS the project proponents dismiss the BLM visual contrast method due to the absence of pre-existing "visual resource objectives" (even though as stated earlier, these exist for the affected key viewing areas). The assumption appears to be that visual contrast cannot be determined unless one first establishes resource objectives. But visual contrast is a useful way of measuring impacts regardless of whether a resource management objective has been established, because it relies on simple and time tested analytical standards, summarized below from BLM Manual 8431, Visual Contrast Rating:

Degree of Contrast	**Criteria**
None	The element (wind turbines) contrast is not visible or perceived
Weak	The element contrast can be seen but does not attract attention
Moderate	The element contrast begins to attract attention and begins to dominate
Strong	The element contrast demands attention, will not be overlooked, and is dominant

In the BLM method, an objective measurement of contrast is combined with viewer sensitivity to determine the level of impact. A number of factors are considered, including distance, view angle, view duration, project size, atmospheric conditions and motion (i.e. spinning blades).The Forest Service method (Landscape Aesthetics, A Handbook for Scenery Management) has similar applicability, but substitutes the terms Retention (no contrast), Partial Retention (weak contrast), Modification (moderate contrast) and Unacceptable modification (strong contrast). Either of these methods would be appropriate for use on the Whistling Ridge project.

A second flaw in methodology is the failure of the DEIS to analyze the landscape character of the project site and its vicinity. Only a general description of the regional landscape and local surroundings is presented on pages 3-161 to 3-163. The DEIS fails to recognize the visual prominence of the series of landforms and water bodies that comprise the surrounding landscape, including Whistling Ridge, Saddleback Mountain, Underwood Mountain, Underwood Bluff, Chemawa Hill, Dog Mountain, and the mouth of the Little White Salmon River. These are prominent and important focal features. The visual integrity of some of these landforms has already been somewhat compromised due to timber harvest and utility line construction, but that does not make these visually complex landforms any less important or less visible. On the contrary, it argues for being careful to not introduce additional impacts that increase cumulative effects.

The DEIS's failure to analyze the impacted area's landscape character is an important omission, because landscape character is the baseline from which changes or contrasts are determined. Natural and cultural landscapes have identifiable form, line, color and texture characteristics that can be documented and

described. The extent to which a development either blends or contrasts with these characteristics is a key basis for understanding impacts.

Scenic Quality Ratings and Viewer Sensitivity

Page 3-157 of the DEIS states that "Scenic quality ratings were based on observations in the field, photographs of the affected area, methods for assessing visual quality, *and research on public perceptions of the environment*…" (emphasis added). It needs to be noted that wind project proposals in scenic landscapes tend to generate a lot of public concern and opposition, while proposals in less scenic areas (i.e. the prairie and plains states) generate very little opposition. For example, Cape Wind (off Cape Cod) several wind projects in New England and upstate New York, previous projects along the Columbia River Gorge National Scenic Area, including the abandoned Cascade Wind proposal not far from this site in Wasco County, projects proposed near the Wallowa and Steens Mountains in Oregon, and those in coastal areas have raised significant public opposition.

In contrast, multiple projects proposed and built in the open range and farm land of the Columbia Basin have generated very little opposition based on aesthetic impact. This experience suggests that much if not most of the public is uncomfortable with the scenic impacts of commercial-scale wind energy projects in landscapes valued for their scenic qualities.

The Columbia River Gorge is clearly valued for its scenic qualities, both natural and cultural. It is a federally protected national scenic area. It has a unique bi-state commission that plans, regulates, and monitors to protect scenic quality. The American Society of Landscape Architects included the Columbia River Gorge as one of the 100 most outstanding landscapes in the United States, ranking it along with Yosemite, Yellowstone and other national icons. Clearly, the public has already weighed in on the issue of whether the Gorge is scenic and merits conservation, and the answer is "yes."

Another flaw in the DEIS is the way the scenic quality ratings were created. Page 3-158 includes a table (3.9-1) that describes scenic quality ratings 1 (low) through 6 (outstanding). It states that "each viewpoint is assigned a final rating based on this scale." A landscape is either scenic or it isn't based on its intrinsic qualities. Every landscape region has places that are more inherently scenic than other places. In the Washington Cascade Mountains, steep, rugged, complex and diverse landscapes, especially those with water features rank higher on scenic quality scales than do areas with gentle terrain, bland vegetation cover and no visible water. This is true regardless of where the observer happens to be standing. Both the BLM and Forest Service methods are useful in assessing the intrinsic scenic quality of landscapes. These sources and materials should be used, so that scenic impacts can be properly evaluated.

Pages 3-159 contains questionable statements and assumptions on viewer sensitivity. Given that the project borders on a federally protected national scenic area and that key viewing areas and visual quality objectives have already been established for this landscape, there seems little need to create new assumptions about sensitivity from these viewpoints. *All KVAs are by definition high sensitivity*. Viewer sensitivity from KVAs is high based on the very definition the proponent uses on page 3-159:

> "**High**. Residential, recreational and viewers congregating in public viewing areas (churches, schools, *designated scenic viewpoints*, etc) are considered to have comparatively high visual sensitivity." (emphasis added).

Additionally, contrary to the statements on page 3-159, sensitivity is not related to distance. A KVA. by definition, is a high sensitivity viewpoint, regardless of the distance to the object viewed. What changes is the degree of contrast experienced. At greater distances contrast is reduced and thus visual impacts normally decrease. Sensitivity, which is related to the observer, does not diminish with distance.

On page 3-163, the DEIS states: "The local landscape visual appearance is of moderate visual quality *with a moderate level of sensitivity*." (emphasis added). For reasons stated above, there is no analytical basis for making this determination. The landscape surrounding the proposed turbines may be of low, moderate or high quality scenically. But *viewer sensitivity* is inherently high from designated scenic viewpoints such as key viewing areas.

For viewpoints outside of the Scenic Area (i.e. Husum) some analysis on sensitivity may be useful.

The selection and analysis of viewpoints in the DEIS is flawed. On page 3-164, the DEIS states: "Each viewpoint was assessed for its scenic quality and viewer sensitivity, and a rating was applied to provide an overall average for the area." This sentence makes no sense. The scenic quality of the viewpoints is not an issue. The scenic quality of the project site and how this would change under the proposal is the issue. Viewer sensitivity, as previously stated, should be presumed to be high from any KVA. That is exactly why they were designated KVAs in the first place. There is no such thing as an "overall average" with respect to scenic quality. One cannot average the scenic quality or impacts among differing viewpoints. Each must be assessed on its own merits.

Viewshed and Viewpoint Analysis

Figures 3.9-1 and 3.9-2 are useful in assessing the potential visibility of proposed turbines from within the National Scenic area and elsewhere. But they fail to note the full extent to which the turbines would be exposed to key viewing areas. The analysis treats the scenic impact problem as a *viewpoint impact* as opposed to a *view corridor* impact, but several of the affected KVAs are corridors, not points. These corridors include designated scenic roads and the Columbia River. The DEIS should be revised to analyze the distance along the entire length of these KVAs from which the project would be visible and to simulate views from multiple points along these KVAs in order to identify where the greatest impacts are likely to occur.

As it stands, the viewpoints chosen for analysis may not be truly representative: I-84, the Columbia River and the Historic Columbia River Highway all have multiple possible view locations that may experience greater impacts than the single locations chosen by the applicant. Each of these view corridors come within 3 miles of the project, yet all sample viewpoints are more than 4 miles from the project. Additional views along these three KVAs should be analyzed. For example, a simulation from the Historic Columbia River Highway at Mitchell Point, directly across the Columbia River from the project, is critical.

The visibility maps (Figures 3.91 and 3.92) illustrate that a huge area covering thousands of acres is potentially within line of site of one or more turbines. Given the high visibility of the project, additional viewpoints need to be selected to help analyze visual impacts. For example, the analysis failed to consider the impact from certain KVAs, including Tom McCall Point

Finally, there is a need to identify which turbines are visible from which viewpoints. This will aid the applicant, reviewing agencies, and the public in understanding both the extent of impact and in identifying potential mitigation measures.

Photomontages
The applicant is relying heavily on the small number of selected viewpoints and photomontages to determine the level of impact. Regulatory reviewers of this proposal, as well as concerned members of the public, need to understand the inherent limits of what these photomontages can represent.

First, the choice of viewpoints is critical. Are the viewpoints chosen truly representative of the views available in the area? For reasons mentioned, I do not believe this has been shown to be the case. Given the scale of this project and the number of viewpoints potentially affected, additional viewpoints should be analyzed.

Second, photomontages are not, and cannot, be true to life representations and should not be viewed as such. The inherent limitations of photomontages should be discussed in the DEIS. Two-dimensional photo images can never replicate a three-dimensional world because people see stereoscopically, and will view real life turbines from within three-dimensional space, not as if they were painted upon a flat plane. Real world resolution is also much greater than what can be portrayed on a photo. *Brightness ratio* is a measure of contrast between the lightest and darkest elements in any given view. On a clear day, a viewer might experience a 1,000 to 1 brightness ratio. The same image on a computer monitor provides a 100 to 1, or at best 400 to 1 brightness ratio. If this image is printed, the brightness ratio is cut in half or less. What this means is that a photographic image is inherently much lower contrast than what one would see in the real light of day.

Additionally, the size of the image one looks at and the distance from which one views that image are crucial. Page 3-160 of the DEIS states that "Visual simulations were developed using photographs taken with a 35 mm digital SLR camera. Various focal lengths from 40-70mm were used with the intent to capture the maximum pixels and resolution for the simulation." A 50mm focal length approximates what the human eye sees. A 40mm length shows a wider angle, and pushes an image farther away, while a 70mm length brings it closer to the viewer. Most people will view the photomontages either on a computer monitor or on a printed page. Research indicates that to get a realistic sense of scale and distance, the original photo should be taken with a 70mm focal length and the image should be printed or viewed at a full page size, either 8 x 11 or 11 x 17 depending on the extent of the area being shown. This is because most people need to hold an image 15-20 inches away from their eyes in order to be focused. Viewing a photo of an object several miles distant, and moving that photo a few inches away adds miles to the effective visual distance. Also, by clipping images together to create panoramas, the photomontages effectively make the turbines recede farther into the background than they would appear in reality.

It is nearly impossible for people to judge the true scale of wind turbines when looking at photos of them taken from a distance of several miles. The problem is there is usually no clear frame of reference within the photo to measure the size of a turbine against. Unless there is something of known size near the turbines, a house or barn for example, one cannot tell if the turbines are 100 or several hundred feet tall.

In short, the images provided are too few and otherwise limited to be able to accurately assess the potential visual impacts of the proposal.

The images included in the DEIS vary greatly in scale. For example, the turbines appear much larger in the simulation for viewpoint 3, a distance of 7.6 kilometers, than they do for viewpoint 1, a distance of 6.4 kilometers. How can this be? The turbines should appear larger in the closer view. The answer must be that the reproduced image provided, no matter what focal length was used, does not reflect the

distance. This is also evident in comparing viewpoints 11 and 12, which are similar view angles. The turbines in the simulation for viewpoint 12 appear smaller and farther away than those for viewpoint 11, even though the former is 3 kilometers nearer according to the data provided on the image.

Lastly, even if the photo images were perfect representations of the wind turbines, they would fail to capture the added impacts due to the motion of spinning blades. Blade motion would attract the eye and add to visibility. Simulations that include motion (animations) should be provided by the applicant to properly assess impacts.

Specific viewpoints
I have selected a few viewpoints to illustrate the magnitude of impacts that may result from this project as designed.

Viewpoint 11: I-84 Westbound
As viewed from this viewpoint, the 25 turbines with visible hubs clearly are visually dominant over the natural form, line, color, and texture of the existing landscape. They are high contrast, even with the inherent brightness ratio limitations of the photomontages. They have a strong skyline presence that draws attention to them. Spinning blades would only increase their obvious visual dominance. A key problem from this viewpoint is the chaotic, jumbled appearance of the turbines. They are bunched up and overlap each other, creating too much visual density, with too little space between individual turbines and clusters. The turbines viewed from this vantage point present a *very high contrast*. Given the huge number of viewers, long view duration, and high sensitivity, the visual impact from the I-84 KVA and the adjacent Columbia River KVA in this area is very high.

Viewpoint 12: Koberg Beach State Park
Impacts from viewpoint 12 are high, but not as high as from viewpoint 11. The angle of view is similar to the previous one, but because the distance is shorter, some of the turbines have ducked behind the horizon. The result is a bit better visual composition and thus somewhat less impact. The turbines are still visually dominant, but their horizontal scale is less, and the array is more coherent. Taking these two images together, one can conclude that the impacts might be even greater when viewed from further east. This is supported by the viewpoint map, which indicates that more turbines are visible from further east.

Viewpoint 13: I-84 Eastbound
The photomontage included in the DEIS is suspiciously low contrast. Given the much shorter view distance as compared with the previous two viewpoints, and taking the wireframe into account, the 12 turbines seen from here would be visually dominant. The skyline effect is strong, but the horizontal scale is modest. The biggest impact is from the dense cluster of turbines at the high point in the center of the image, best viewed on the wireline (Figure 3.9-10). Again, in looking at the viewpoint map, it appears that the turbines would be visible from along I-84 stretching 2 miles to the west and several miles to the east. This means a long duration view, and possibly more visible turbines. The composition of the turbines from this viewpoint is problematic. There are two areas of overlapping rotors, which create some visual incoherence. Impacts from this viewpoint are high.

Viewpoint 14: Viento State Park
This is a very misleading photomontage. The image is very faint, and the size does not correspond to the relatively short view distance of 6.4 kilometers (4 miles). The wireframe view indicates that the 18 turbines seen from this viewpoint would be very high contrast and would have high impacts, similar to

those discussed under Viewpoint 11. All 18 turbines break the skyline, there are overlapping rotors and a jumbled, chaotic composition. The turbines located at the high point in the center of the image are particularly strong impact. The turbines would be framed by Dog Mountain, seen on the left side of the photo, and a portion of Underwood Bluff, seen on the right side of the photo (Figure 3.9-11). These are very natural, highly intact landforms, exacerbating the contrast that the turbines would introduce. Existing development prohibitions on these landforms, which lie within the National Scenic Area, are at the highest protection level, allowing no visual contrast. This illustrates the high sensitivity of the viewshed.

Viewpoint 19: Historic Columbia River Highway
This is also a visually misleading photomontage that most likely vastly understates the visibility and contrast of the 11 turbines in view. The image is much too hazy, and the white clouds behind the turbines provide a convenient low contrast backdrop for white turbines. By viewing the wireframe, I conclude that the turbines would be moderate to high contrast, and would be co-dominant to dominant. Impacts would be at least moderate, and possibly high. One visual advantage is that from this angle the turbine composition is reasonably coherent and the horizontal scale (along the horizon) is not great. The location of the turbines at a low point along the ridge presents lower impacts than noted in the previous photos. My concern is that the Historic Columbia River Highway runs within 3 miles of the project boundary west of this site. Selecting a single viewpoint over 7 miles from the project probably does not fully reflect the actual impacts to this Key Viewing Area.

Unknowns
The analysis in the DEIS leaves some unanswered questions in addition to the ones already raised. First, what will be the extent of short-term and permanent forest clearings around the turbines? Typically wind turbines need a lot of free space around them to reduce turbulence and blade interference. How far will this clearing extend from each turbine? Has this forest clearing been incorporated into the photomontages? It does not appear to have been..

Second, the DEIS mentions new and improved roads, but no roads are shown in the photomontages. Has the proponent determined that these roads will not be visible, or have they simply been left out of the picture? Since the turbines are along prominent, narrow ridges, it is possible that roads will have to be cut into the sideslopes in order to be at an appropriate grade. If this is the case, the road cuts could be visible from some viewpoints.

Third, what turbines will be used and how large will they be? The scale of commercial turbines continues to increase year by year. Taller turbines than the ones depicted would be even more visible and higher contrast.

Fourth, the analysis does not include an evaluation of impacts from lighting (both daytime and nighttime). Lighting can cause a high contrast with surrounding landforms, dramatically increasing the impacts of development, both during the day and at night. The DEIS does not even attempt to estimate the extent of lighting, instead merely providing general guidance regarding the placement of lights and stating that the FAA will require lighting later. The DEIS needs to be revised to estimate the extent of lighting for this project and its impacts within the affected landscapes.

Findings
The visual impact analysis provided in the DEIS is faulty and incomplete. In addition, the DEIS's conclusions that visual sensitivity is only low to moderate and that impacts would be low to moderate

from most viewpoints (Table 3.9-2) are not supported by the facts. The project as presented would have substantial adverse impacts to scenic resources.

- Given the project location adjacent to the National Scenic Area, and its high visibility, the potential scenic impacts of the Whistling Ridge Energy Project are clearly high.
- The proposed project is located on visually prominent, complex topographic features. Research and experience shows that it is difficult to successfully "blend" large-scale industrial commercial wind turbines with complex, forested landforms like those that make up the proposed site.
- It may be technically difficult or impractical to rearrange the turbines in arrays that appear orderly and coherent. The proponent has made no attempt to do so in any event.
- Visual impacts from key viewing areas within the Columbia River Gorge National Scenic Area are moderate to very high from several of the viewpoints selected by the proponent for analysis.
- Additional affected viewpoints and key viewing areas have not been, but need to be, analyzed to get a better sense of the extent of impacts.
- Duration of view, particularly along KVA corridors, needs to be fully analyzed. Indications are that the view duration will be long from I-84, the Columbia River, and the Historic Columbia River Highway, further exacerbating impacts.
- The proposed turbines contribute to adverse cumulative impacts when added to existing clearcuts and transmission line corridors on the project site.
- Given that there are additional wind energy facilities currently proposed along the National Scenic Area boundary east of this project, there is a real potential for increased cumulative impacts from multiple key viewing areas. By approving projects one at a time, we could someday in the not-distant-future reach a point where wind turbines are in view from Hood River all the way to the eastern boundary of the National Scenic Area.
- The photomontage images in the DEIS are flawed. The scale and distance appear to be inconsistent. Atmospheric conditions on some photos are hazy. Use of a white cloud background reduces apparent color contrast of turbines skylined on visually prominent ridges.
- From several viewpoints, the array of turbines in view is chaotic and incoherent. Rotors frequently overlap. Research is clear that, because modern commercial turbines are so large and inherently contrasting, good design that is visually coherent is crucial to mitigating visual impacts.
- The photomontages provided do not appear to take account of additional visual impacts from tree removal and roads associated with the turbines.
- The analysis fails to account for nighttime lighting visual impacts. Turbine lighting will be required by the FAA.
- The analysis fails to account for the additional visual impacts due to blade motion.
- The proponent has not offered any meaningful mitigation for visual impacts that will result from this project. The visual impacts are treated as "unavoidable," even though no effort has been made to avoid them.

Recommendations

Provision of renewable energy is an important goal, but that does not mean areas immediately adjacent to and highly visible from the Columbia River Gorge National Scenic Area are suitable locations for commercial-scale wind energy. If this project moves forward, the following steps should be required:

- The proponent should go back to the drawing board and test different turbine locations and sizes to reduce visual impacts. Turbines that are visible from key viewing areas within the national

scenic area should be moved or removed. It may be possible to build a smaller number of turbines, carefully located, in such a way as to avoid adverse impacts.

- The analysis should expand the number of viewpoints and should include view duration. Specific turbines that are most visible from the most viewpoints should be identified.
- Photomontages should be re-done to include likely impacts from permanent forest clearing and road construction.
- Photomontages should be redone to reflect the clear sky atmospheric conditions under which the turbines would be most visible.
- Photomontages should be created from initial images shot with a 70mm focal length and reproduced at a full single sheet size that correctly depicts the scale as one would see it in reality.
- Photomontages should include a note describing the ideal distance the viewer should be from the image to best approximate the actual scale.
- Reviewers should note that the images provided, no matter how good, are not reality. The real-world experience of viewing large turbines in three dimensions and much higher brightness will be different, and likely stronger, than can be depicted.
- The proposed development should be required to use newly available radar-activated lights to reduce the scenic impacts of the turbines at night.
- Alternative turbine colors should be considered that may reduce visual contrast. For example, in Scotland light gray turbines have less visual contrast than white ones seen against the sky.

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Landscape Architect

References:

Agriculture Handbook 701. Landscape Aesthetics: A Handbook for Scenery Management. USDA Forest Service. 1995.

U.S. Department of Interior Bureau of Land Management. BLM Manual 8400. Visual Resource Management

U.S. Department of Interior Bureau of Land Management. BLM Manual H-8410-1. Guidelines for Visual Resource Inventory.

U.S. Department of Interior Bureau of Land Management. The Final Wind Energy Development Programmatic EIS. http://windeis.anl.gov/eis/index.cfm

U.S. Department of Transportation Federal Highways Administration. Visual Impact Assessment for Highway Projects.

Scottish Natural Heritage. Visual Representation of Wind farms Good Practice Guidance. 2006.

Scottish Natural Heritage. Siting and Designing Wind Farms in the Landscape. Version 1. 2009.

Scottish Natural Heritage. Guidance, Cumulative Effects of Wind Farms. Version 2, Revised 2005.

Ozimec Powell et al. Digital Analysis of Aspects of Wind Farms in Southeast Poland.

Architect Animation Studios. The Visual Issue: an investigation into the techniques and methodology used in windfarm computer visualizations. 2007.

Bureau of Land Management Powerpoint Presentation. State of the Art in Wind Siting Seminar. 2007.

University of Wyoming. Wind Energy and Scenic Considerations in Wyoming. Workshop Report. 2009.

Phadke, Roopali. Wind Energy - Visual Impacts and Public Perceptions. Available at http://www.macalester.edu/windvisual/index.html. Revised 2009.

Pasqualetti, Martin, et al, Wind Power In View. Energy Landscapes in a Crowded World. Academic Press. 2001.

Bell, Simon. Elements of Visual Design in the Landscape. E & F Spon. 1993.

The Landscape Institute. Guidelines for Landscape and Visual Assessment. Spon Press. 2002.

KEY PERSONNEL - MIG

Dean Apostol

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Education

Bachelor of Science, Landscape Architecture, Iowa State Univ.

Graduate coursework, Geography, Portland State University

License

Landscape Architect: Oregon, #173

Qualifications

Dean Apostol has over 30 years of experience in scenic impact analysis, landscape design and ecological restoration. He is a regional and national expert on scenic resource analysis and conservation, and has served as an expert witness on several projects.

Prior to joining MIG, Mr. Apostol managed a sole-proprietorship practice. Some of Mr. Apostol's previous projects include the evaluation of scenic impacts from forest practices in Washington, wind energy proposals in the Columbia Gore National Scenic Area, scenic character analysis for new communities, and mitigation of scenic impacts from highway development. He was also a landscape architect for Mount Hood National Forest for 11 years, where he developed management plans for scenic byways, historic trails, and wild and scenic rivers. In addition, Mr. Apostol helped develop a Natural Resource Management Plan for the Quinalt Nation in Washington State and worked with the Warm Springs Nation on various projects.

While at the Forest Service Mr. Apostol published Forest Landscape Analysis and Design, a book that describes a method for integrating planning and ecology over large forested areas. He managed multiple scenic resource conservation projects, from wild and scenic rivers to ski areas. Mr. Apostol has also published *Restoring the Pacific Northwest: The Art and Science of Ecological Restoration* in Cascadia in 2006, the leading text on the practice of ecological restoration in the Northwest region. He co-authored chapters on landscape scale and riparian restoration, and co-authored *Designing Sustainable Forest Landscapes* (Taylor and Francis Press, 2008). This text integrates conservation of forest scenery with forest ecology for temperate regions. Mr. Apostol continues to write, lecture and teach at the University of Oregon and Portland State University on natural resource management and ecological restoration topics.

Selected Experience

- City of Damascus Scenic Inventory and Town Plan, *Damascus Oregon**
- State Highway 35 Scenic Viewshed Plan, *Mount Hood National Forest, Oregon**
- Blue Ridge Pipeline Scenic Impact Assessment, *Columbia River Gorge, Oregon*
- Forest Park and Powell Butte Wildfire Risk Reduction Project, *Portland, Oregon*
- Skamania County Energy Ordinance Expert Testimony, *Stevenson, Washington*
- Windy Flats Wind Farm Scenic Impact Review and Recommendations, *Columbia River Gorge, Washington*
- Whistling Ridge Wind Development Environmental Review
- Washington Forest Scenic Impact Analysis, *Washington State**
- San Luis Valley Transmission Corridor Scenic Impact Review, *Colorado*
- Clackamas River Hydro Re-Licensing Project Scenic Assessment, *Mount Hood National Forest, Oregon**
- Clackamas Wild and Scenic River Plan, *Mount Hood National Forest, Oregon**
- West Linn Solar Highway Visual Impact Analysis, *West Linn, Oregon*

**Work performed prior to joining MIG.*

Comments on the Whistling Ridge Wind Energy Power Project DEIS
Skamania County, Washington

K. Shawn Smallwood, Ph.D.

27 August 2010

Friends of the Columbia Gorge asked me to prepare an expert comment letter on the Whistling Ridge Wind Energy Project DEIS.[1] I reviewed this document and its appendices. My comments will mostly address the baseline data used to assess impacts and proposed mitigation measures. A summary of my comments appears on page 24.

I am an ecologist with 25 years of research and consulting experience on issues related to wildlife management and conservation problems. My qualifications for preparing this declaration are summarized in my curriculum vitae, which is attached. I received a Ph.D. degree in ecology from the University of California at Davis in 1990. Following four years of post-graduate research in the Agronomy and Range Science Department at UCD, I have worked for citizen groups, businesses, attorneys, and government agencies, largely on solving problems affecting wildlife, especially on special-status species.

I have eleven years of experience with the biological impacts caused by wind turbines. I performed multiple monitoring and research programs in the Altamont Pass Wind Resources Area (APWRA), and I senior authored many reports that followed, most of which were peer-reviewed. I consulted for the California Energy Commission on matters related to wind farm development. I also consulted to wind power companies, and helped project applicants obtain permits to repower a portion of the APWRA. My contribution to wind energy development has been to produce research-based solutions to avoiding, minimizing, and reducing bird collisions with wind turbines.[2]

ESTIMATES OF PROJECT IMPACTS – WIND TURBINE COLLISIONS

WEST, Inc. appeared to have relied on several types of empirical evidence to predict wind turbine-caused impacts at the proposed 75 MW Whistling Ridge wind energy project. These lines of evidence included a model based on fatality rates regressed on utilization rates, comparisons of exposure index values among species seen at the site, and a comparison of raptor nest density to nesting densities at other wind project sites. However, these approaches have consistently led to inaccurate predictions of project impacts at other locations (see below), and therefore should be examined carefully before relying on them yet again.

Predicted Collision Rates

Not only have most predictions of raptor fatality rates at wind projects been proven wrong after the project was developed and monitored for fatalities, but some of the wrong predictions have been very wrong (Table 1). Following construction and monitoring, raptor fatalities were estimated to be twice as high as predicted at Stateline, nearly 5 times higher than predicted at

Hopkins Ridge, 3 times higher than predicted at Wild Horse, 6.9 times higher than predicted at Shiloh I, at least 11 times higher than predicted at Klondike II, and about 14 times higher than predicted at Big Horn. Even in the scientific field of wildlife biology, prediction errors of these magnitudes would be considered gross failures. Prediction failures are caused by fundamental shortfalls in the assumptions and methodology used to make the predictions.[3] The repeat failures to predict wind project impacts should prompt the States of Washington and Oregon to demand a review of the methods used, and to require new standards, including consequences for wind projects exceeding predicted fatality levels by more than 50%.

Table 1. *Predictions of raptor fatality rates at proposed wind projects, and compared to estimated fatality rates following project development. Reported estimates were those appearing in fatality monitoring reports provided by consultants, and the Smallwood estimates were those made by me, using a common set of methods and assumptions, including search detection and scavenger removal rates reported in Smallwood (2007).*

	Raptor fatalities / MW / Year			How fatality rates compared to predicted rates
Project	**Predicted**	**Reported estimate**	**Smallwood estimate**	
Klondike I	0.029 - 0.044	0.000	0.000	Lower
Combine Hills	0.00-0.02	0.000	0.000	Accurate
Buena Vista[a]	0.331-0.581	0.605	0.544	Accurate
Klondike II	~0	0.11	0.062	≥11 times higher
Stateline	0.061	0.091	0.130	1.5 to 2.1 × higher
Big Horn	0.015 – 0.020	0.150	0.243	8.6 to 13.9 × higher
Shiloh I	0.109	0.820	0.756	6.9 to 7.5 × higher
Wild Horse	0.007-0.074	0.090	0.251	2.2 to 3.1 × higher
Hopkins Ridge	0.020-0.040	0.139	0.172	4.6 to 5.7 × higher

[a] I co-authored the report that presented the predicted fatality rates for Buena Vista.

Fatality rates regressed on utilization rates

WEST, Inc. relied on a regression relationship (*Figure 8* in App. C-4) that regularly appears in their environmental documentation in support of wind energy projects, and which I have commented on before (see Figure 1, below). Affirming its reliance on the WEST, Inc. approach to assessing potential project impacts, the DEIS (page 3-63) stated, "*Mean overall bird use in the study area was low compared to these other wind resource areas studied: ranking 19th compared to 24 other wind resource areas…*" and, "*Mean annual raptor use was 0.28 raptors per plot per 20-minute survey, which is a standardized way to measure use in order to compare results to avian use at other sites.*" However, this approach was inappropriate for use as a predictive tool due to multiple fundamental flaws, which are addressed in the following paragraphs.

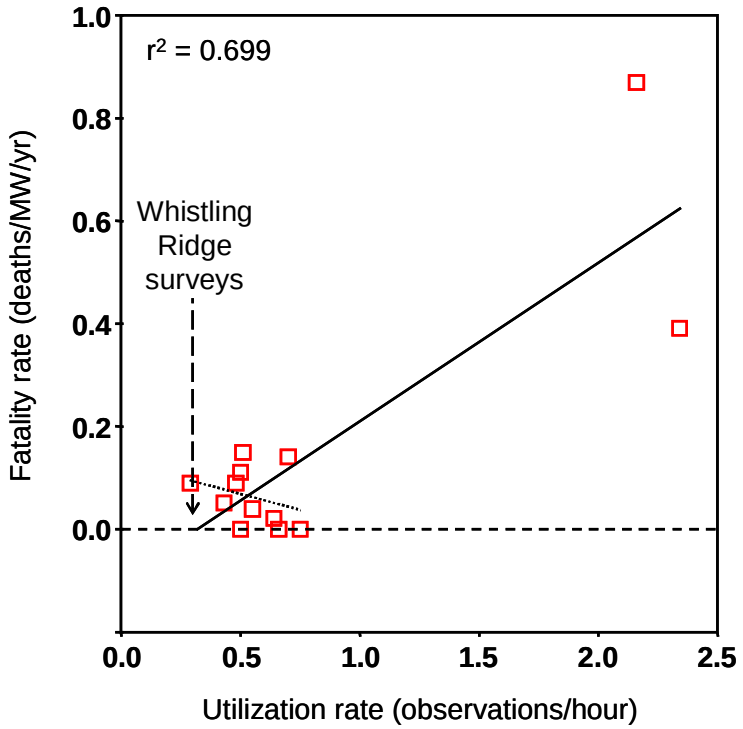

Figure 1. *Fatality rate as a function of utilization rate, according to WEST, Inc., Figure 8 in Appendix C-4. The dotted line fitting the clump of data points at the lower left represents an alternative regression relationship if data from the two California WRAs in the upper right aspect of the graph were omitted. The regression relationship was pseudoreplicated.*

Sufficiency of survey effort.—The vertical dashed arrow in Figure 1 represents the utilization rate that WEST, Inc. estimated for raptors at the Whistling Ridge project site. Although a non-biologist might be impressed with the number of bird surveys performed at the Whistling Ridge project site, totaling 261 surveys, biologists familiar with utilization surveys at wind project sites have cause for concern regarding conclusions drawn from the level of effort devoted to Whistling Ridge. The 261 surveys lasted 20 minutes each, so totaled 87 hours. Eighty-seven hours was insufficient time to detect multiple raptor species and many other bird species, especially considering the high levels of visual occlusion due to forest cover surrounding observation stations at Whistling Ridge, along with the large volumes of airspace that would have been occluded due to mountainous terrain and cloudiness.

Even the large amount of survey time invested in the Altamont Pass WRA -- where no forest occluded views -- failed to detect multiple species that are killed by APWRA wind turbines, including threatened and endangered species such as brown pelican and peregrine falcon, and many hours were needed to detect only one individual of many species. For example, 774 hours of survey at Vasco Caves Regional Preserve in the Altamont Pass WRA[4] failed to detect peregrine falcon even though this species was twice documented as killed by Altamont Pass wind turbines. At Vasco Caves, it took 387 hours per merlin observation, even though this species is killed by Altamont Pass wind turbines. It took all 774 hours to detect one red-shouldered hawk, and it took 70 hours per Cooper's hawk observation and 55 hours per Swainson's hawk observation, even though members of these species have been killed in the

Altamont Pass. Just because a species goes undetected in the minimal survey efforts that have been directed to birds at wind project sites does not mean that that species will avoid collisions with wind turbines.

An earlier study in a different part of the Altamont Pass WRA involved 980 hours of bird surveys.[5] In that study the number of hours required per observation was 490 for Cooper's hawk, 980 for white-tailed kite, 163 for rough-legged hawk, 7 for loggerhead shrike (a commonly killed species), 43 for cliff swallow (another commonly killed species), and 2 for golden eagle. Even though in the Altamont Pass we invested more than 11 times the hours committed to Whistling Ridge, we were unable to detect any significant relationships between fatality rates and utilization rates among rows or larger plots of wind turbines.[6] My colleagues and I concluded that not only were relatively small sample sizes an impediment to detecting a relationship between fatality rates and utilization rates, but there was the interference of a substantial bias caused by declining survey detection rates with increasing distance from the observer, especially for smaller-bodied bird species. The survey effort at Whistling Ridge was grossly insufficient for informing decision-makers about the impacts of the project that will be caused by wind turbine collisions with birds.

The surveys were diurnal.—The utilization surveys at Whistling Ridge did not record any birds flying at dawn, dusk, or at night, so they inadequately characterized the suite of bird species that uses the project area. (Utilization surveys are different from protocol-level call-back surveys used to detect northern spotted owls, and the data are recorded differently and used differently, including for wind turbine siting.) No nocturnal owl species would have been detected unless an owl flushed in daylight hours for some reason, and multiple other species would have been missed if they flew at night. This shortfall can be applied to most survey efforts that have been performed at wind project sites throughout the USA, so it was not unique to Whistling Ridge. This shortfall should be acknowledged and the level of uncertainty attributed to conclusions of impacts should be increased.

Variation in visibility of surveyed airspace.—Survey observation stations are typically located on prominent aspects of the study area so that the observers can scan for birds in as much of the airspace as possible. The surveyed airspace is that airspace between the observer and the maximum survey radius (a maximum distance from the observer), and between the ground and to whatever elevation above the ground (ceiling) the surveyor is scanning for birds. WEST, Inc. routinely uses an 800-m maximum survey radius. However, at least some of the airspace between the observer and the maximum survey radius is usually hidden from the observer, due to hills, the slope of the hill upon which the observer stands, trees, and the prevalence of fog or clouds. In hilly or mountainous terrain, observers stationed on prominent locations might be able to see a smaller proportion of the available airspace between 40 and 100 m away due to the slope dropping away from the observer. These observers might be able to survey a larger volume of airspace between 100 and 250 m away because those distances overlap canyon bottoms into which the observer might be able to see and over which there is more airspace due to a larger elevation range extending from below the observer (canyon bottom) to whatever elevation ceiling the observations might extend (assuming there is a ceiling). In other words, prominent locations tend to provide surveyors with variable volumes and proportions of volumes of

airspace as functions of distance from the observer, due to the manner in which the ground surface slopes away from the observation station.

The ground surface area of a flat circle within 800 m of the observer at a single station equals 2.01 km^2. Assuming the WEST, Inc. survey team can see birds as high as they seem to think they can see them in distance, the volume of airspace surveyed on perfectly flat and unobstructed landscapes would be 1.61 km^3, which in my opinion is a huge volume of airspace in which to expect to see more than a small fraction of the available birds In the Altamont Pass my colleagues and I did not believe we could reliably detect most birds flying as high as 800 m, so we selected a ceiling of 140 m above the elevation of the observer, excluding birds above that ceiling from utilization rate estimates. This 140-m ceiling above flat terrain would have the surveyors searching 0.28 km^3, which is still a volume I consider unmanageable, but which is much smaller than within an 800-m ceiling.

However, flat ground is rarely where bird surveys are performed in WRAs, especially in the Pacific Northwest. From station to station, and from project site to project site across the US, the visible volume of airspace surveyed will vary greatly due to variability in topography and forest cover surrounding each station. To illustrate the influence of this variability, Lee Neher and I constructed a digital elevation model (DEM) of the Vasco Caves Regional Preserve in the Altamont Pass and we calculated the volume of airspace visible from each of 15 observation stations (Figure 2). Our results demonstrated that bird observations need to be related to visible volumes of airspace to avoid confounding any comparison that would be made of utilization rates among observation stations or wind project sites.

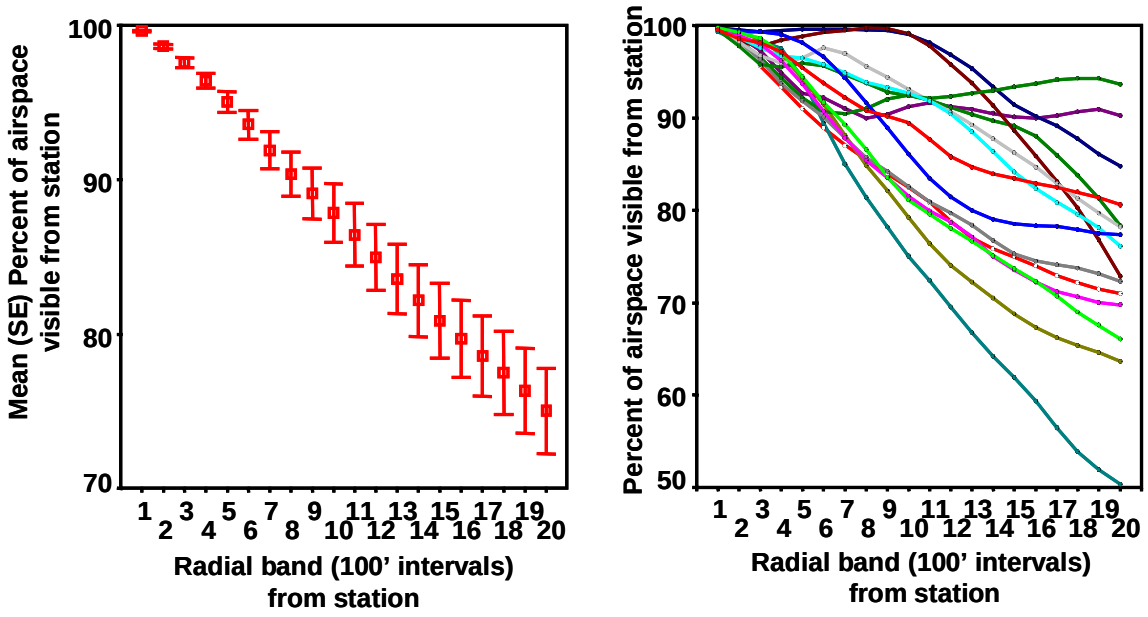

Figure 2. *Change in mean (left graph) and station-specific (right graph) percentage of visible volume of airspace within 140-m ceiling and within specific radial bands from the observer (x-axis) among 15 observation stations at Vasco Caves Regional Preserve in the Altamont Pass.*

Note that our maximum survey radius was 2009 feet, or 600 m, whereas WEST, Inc. uses a maximum survey radius of 800 m, including at Whistling Ridge. Projecting the trends in this Figure to 800 m, we might expect a mean of 60% of the airspace to be visible, ranging about 20% to 94% among the stations, and this variation did not include airspace hidden by forest surrounding observation stations at Whistling Ridge. Without accounting for this source of variation in utilization rates, comparing utilization among sites within a project area could be misleading, and comparing utilization rates among wind project sites across the US might qualify as very misleading.

800 m maximum survey radius was too far.--Lee Neher and I quantified the effect of variable distances of birds from the observer, using our DEM of a project area in the Altamont Pass (Figures 3 and 4). We calculated detection functions from the patterns depicted in Figures 3 and 4 (see Table 2), enabling me to project our detection rates to visible volumes of airspace within the maximum survey radii used by other investigators. Raptor utilization rates within an 800 m maximum survey radius would be reported at about 81% of the rate within a 600 m maximum survey radius, at 60% of the rate within a 400 m survey radius, and 22% of the rate within a 100 m survey radius. Without accounting for the effect of distance from the observer, utilization rates cannot be compared among wind projects, nor can utilization rates be compared appropriately among species.

Table 2. *First detections/hr/km^3 of visible airspace regressed on distance from observer within radial boundary increased from 30 m to 600 m at Vasco Caves Regional Preserve, California.*

		Model parameters				
Species/Group	**Model**	**a**	**b**	**r^2**	**SE**	**P**
Golden eagle	Power	12.6915	-0.7430	0.97	0.10	0.001
Red-tailed hawk	Power	90.0736	-0.6041	0.96	0.10	0.001
Turkey vulture	Power	66.4367	-0.7159	0.97	0.11	0.001
Northern harrier	Logarithmic	11.0526	-3.2695	0.95	0.63	0.001
Prairie falcon	Power	21.8581	-1.1817	0.98	0.14	0.001
American kestrel	Power	75.5038	-1.0143	0.94	0.21	0.001
Raptors	Power	281.1493	-0.7349	0.97	0.10	0.001
Common raven	Power	306.0222	-0.7777	0.97	0.12	0.001

Pseudoreplication.--The regression relationship in *Figure 8* of App. C-4 likely exemplifies psuedoreplication in correlation analysis, which is a fundamental experimental design flaw that is routinely warned against in statistics textbooks.[7] The regression is based on two clusters of data, one from wind projects located mostly in the Pacific Northwest and the other from two projects located nearby each other in California. If the variation in the graph was more representative of the two regions -- Washington/Oregon versus Central California – than of the individual project sites, then the sampling units were really the regions and not the project sites. In presenting their graph, Johnson and Erickson (2008, 2010) presented a value for the coefficient of determination, r^2, but they neglected to present an error term. Furthermore, they presented the relationship as significant, and the DEIS repeated that conclusion along with the prediction, based on the regression, that 0 raptors would be killed by Whistling Ridge wind turbines (page 3-79).

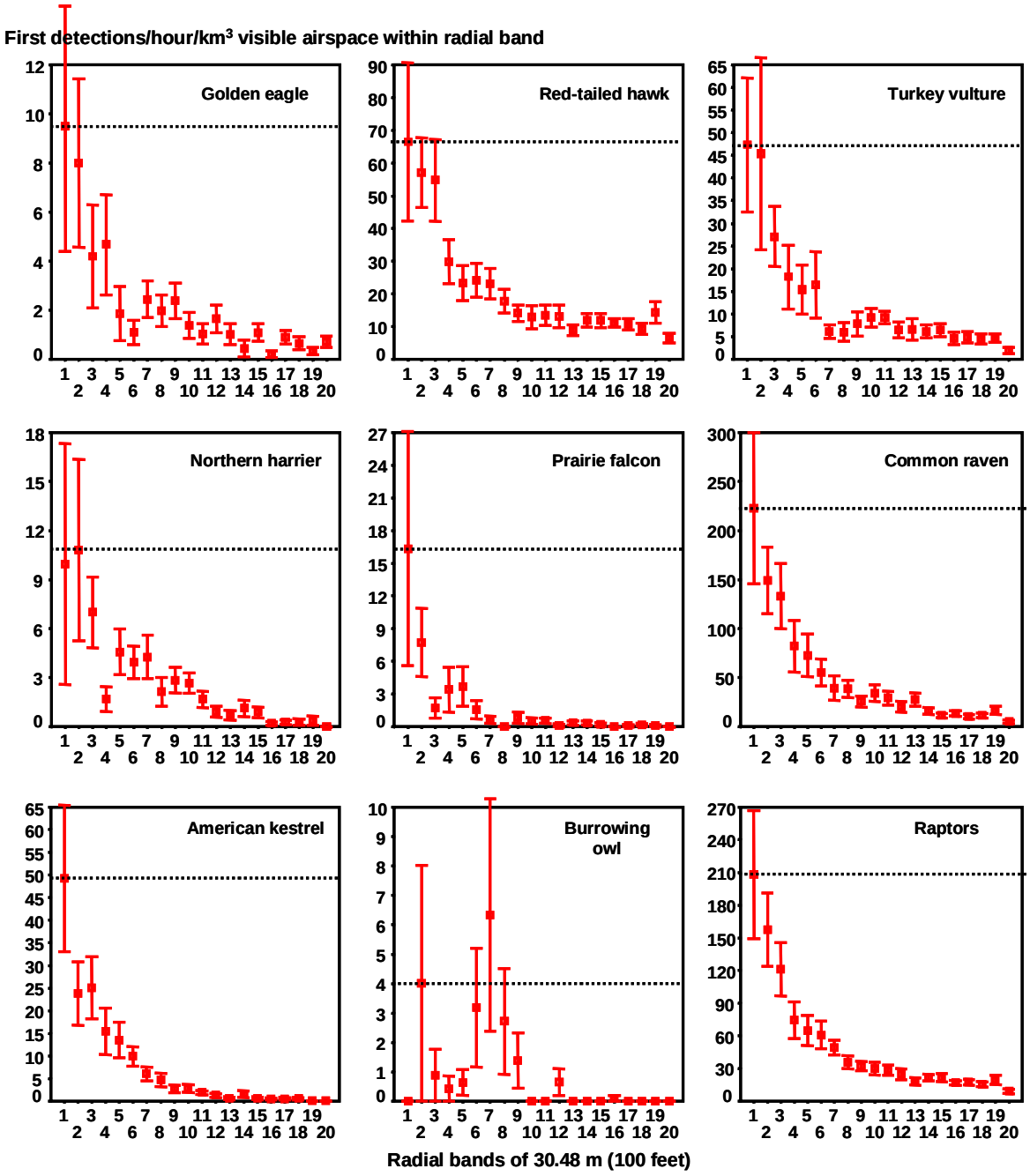

Figure 3. *Within specific 100-foot radial bands, mean first detections/hour/km^3 of visible airspace decreased with increasing distance from the observer for golden eagle, red-tailed hawk, turkey vulture, northern harrier, prairie falcon, common raven, American kestrel, burrowing owl, and all raptors as a group in Vasco Caves Regional Preserve, 2006-2007. Horizontal dashed lines represented detection rates expected of each species assuming spatial distributions were most accurate within the closest 100 or 200 feet to the observer.*

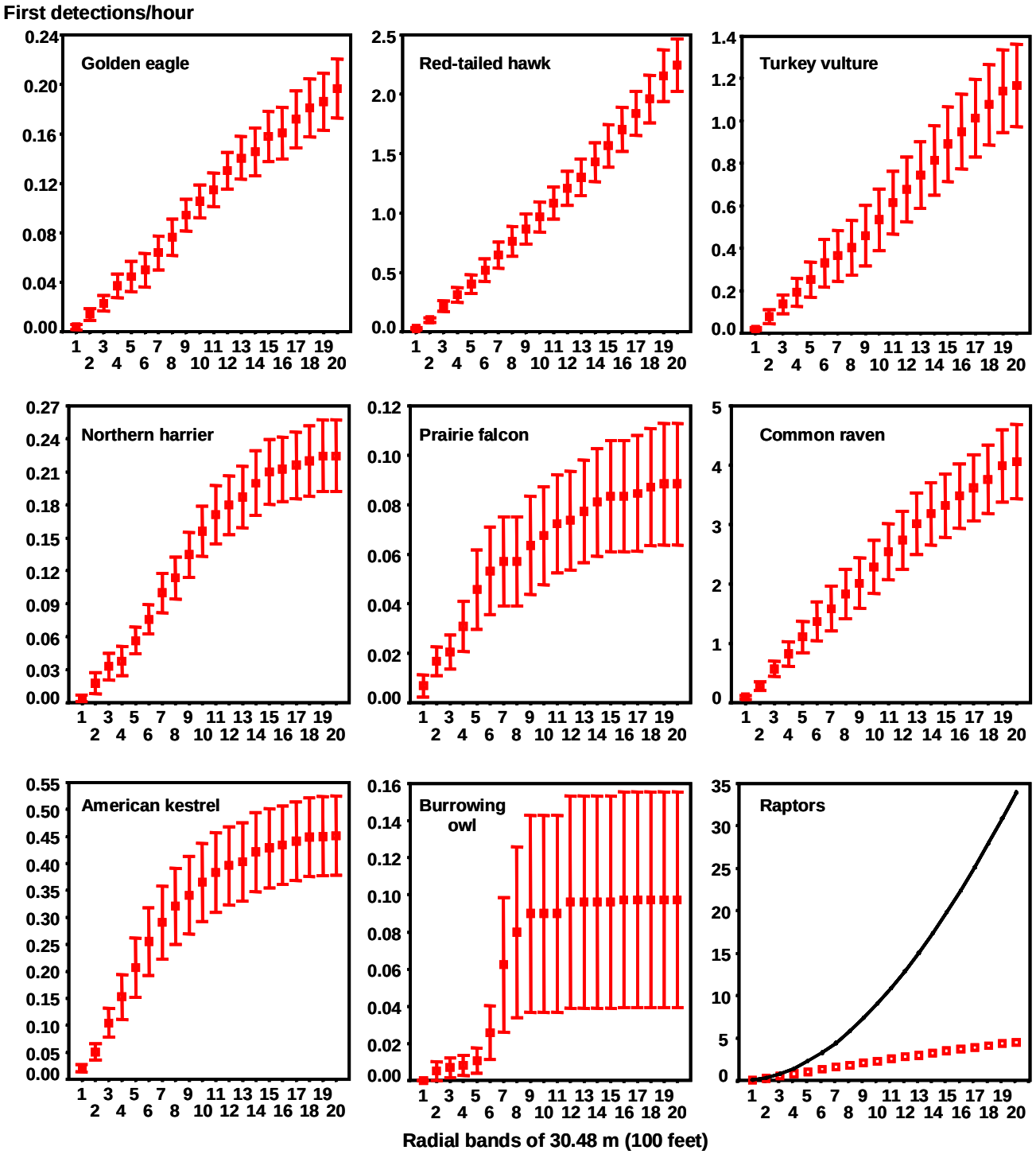

Figure 4. *Cumulative mean first detections/hour increased with increasing distance from the observer for golden eagle, red-tailed hawk, turkey vulture, northern harrier, prairie falcon, common raven, American kestrel, burrowing owl, and all raptors as a group in Vasco Caves Regional Preserve, 2006-2007. The solid line in the lower right graph depicts the exponential increase in cumulative detections of raptors, assuming the spatial distribution of raptors was unaffected by the locations of observation stations and detection rate was most accurate within the closest 100 feet.*

The coefficient of determination is an index of both response and precision, but the reader must be familiar with regression analysis to visually assess the degrees to which variability or precision contributed to r^2. A more direct measure of precision is the root mean square error (RMSE) of the regression, otherwise known as standard error. In my experience, RMSE can serve as a diagnostic tool for deciding whether r^2 was influenced more by leveraging from outliers or from psuedoreplication. Another diagnostic test is to omit data from one of the clusters to learn whether the regression slope would change significantly. In fact, omitting the two data points from Central California project sites converted a strongly positive slope to a negative slope (see dotted line in Figure 1), and the revised regression line was a better fit to the data, based on RMSE (RMSE = 0.0567, which was a third of the value for the pseudoreplicated regression slope). In cases like this, when two data points determine whether an estimated regression slope is strongly positive or negative, the analyst should not use the regression equation to make predictions. It was inappropriate for the DEIS to predict that 0 raptors would be killed by Whistling Ridge.

Accuracy of fatality rates.—Where able, and in the time I had before preparing this comment letter, I used data available in reports to independently estimate fatality rates at project sites across the western USA. My estimates averaged 2.44 times higher than reported for all birds as a group (N = 23 reports), 1.34 times higher for all raptors as a group (N = 23), and 2 times higher for all bats (N = 20). Probably the principal reason for my higher estimates was the difference in fatality estimator. Most of the monitoring reports I reviewed had utilized the following estimator of fatalities per MW per year, F_A:

$$F_A = \frac{F_U}{\left(\frac{\bar{t} \times p}{I}\right) \cdot \left(\frac{e^{I/\bar{t}} - 1}{e^{I/\bar{t}} - 1 + p}\right)}, \qquad \text{eqn. 1}$$

where F_U is unadjusted average number of carcasses observed per MW per year, $\bar{t}$ is mean number of days until carcass removal, and is estimated by scavenger removal trials, p is proportion of carcasses found by fatality searchers during searcher detection trials, and I is average search interval in days. The other estimator in use, and the one I use, is derived from the Horvitz and Thompson (1952)[8] estimator:

$$F_A = \frac{F_U}{R_C \times p}, \qquad \text{eqn. 2}$$

where R_C is the average proportion of carcasses remaining since the last fatality search and is estimated by scavenger removal trials. I assume carcasses are deposited at a steady rate from wind turbines, so I take the average proportion of carcasses remaining each sequential day between searches:

$$R_C = \frac{\sum_{i=1}^{I} R_i}{I}, \qquad \text{eqn. 3}$$

where R_i is proportion of carcasses remaining by the *i*th day following the initiation of a scavenger removal trial. Thus, the expected proportion of carcasses remaining by the next fatality search should be R_C corresponding with the fatality search interval, *I*.

A key difference between the two estimators is the use of $\bar{t}$ in eqn. 1 and the use of R_C in eqn. 2. The sample size of placed carcasses contributing to R_C never changes from start to finish of a removal trial, as none of the carcasses need to be censored. On the other hand, the sample size contributing to $\bar{t}$ starts small and increases quickly as the trial grows longer (Figure 5, left graph). If 10 carcasses were placed to obtain R_C, then 10 carcasses will contribute to R_C after 1 day, 10 days, or 30 days. If 10 carcasses are placed to obtain $\bar{t}$, then it may be that none of them will contribute to $\bar{t}$ after a day because none had been removed by then, and so all had to be censored from the calculation. If 4 carcasses were removed after 10 days, then only these 4 would contribute to the calculation of $\bar{t}$. If 7 carcasses were removed after 30 days, then only these 7 would contribute to the calculation of $\bar{t}$. Thus, $\bar{t}$ increases exponentially with the sample size used to calculate $\bar{t}$ because the increasingly large sample is also composed of carcasses that have persisted longer into the trial (Figure 5, right graph). Furthermore, $\bar{t}$ increases nonlinearly with number of days into a trial (Figure 6), indicating a bias. Perhaps the main bias, however, is the use of $\bar{t}$, which is derived from a time period that is necessarily much longer than the average search interval of the fatality monitoring (see text that follows).

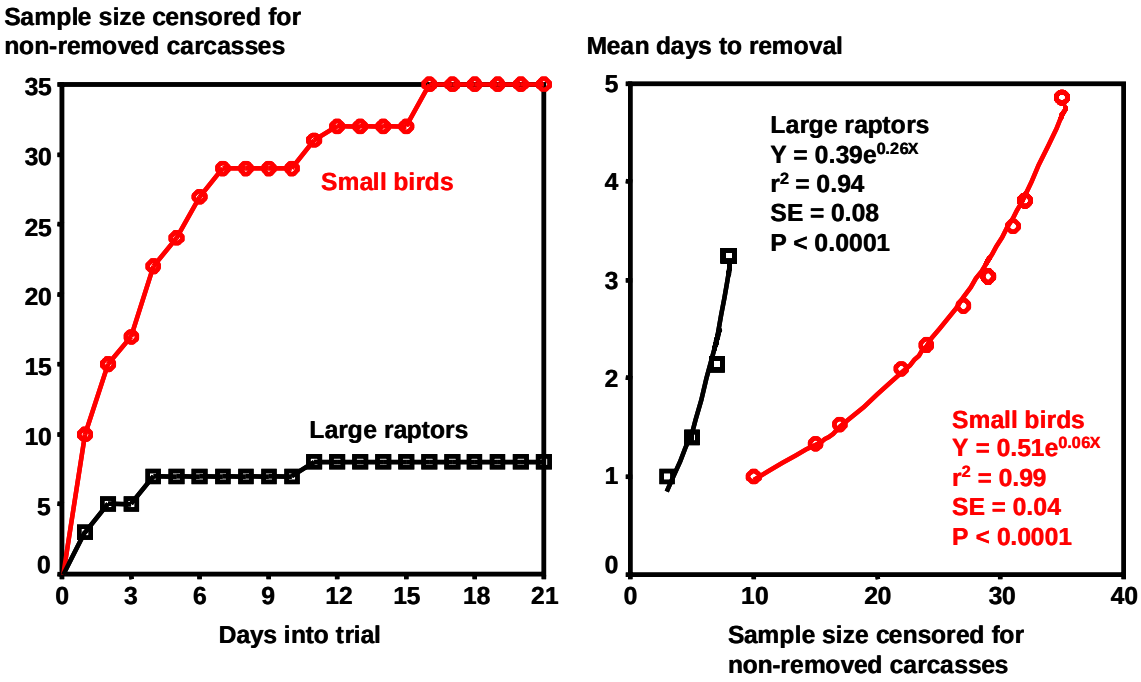

Figure 5. *Sample sizes used to calculate mean days to carcass removal decline with shorter trial duration (left graph), and mean days to removal increases exponentially with sample size (right graph) at Vasco Caves Regional Preserve, Altamont Pass, California.*

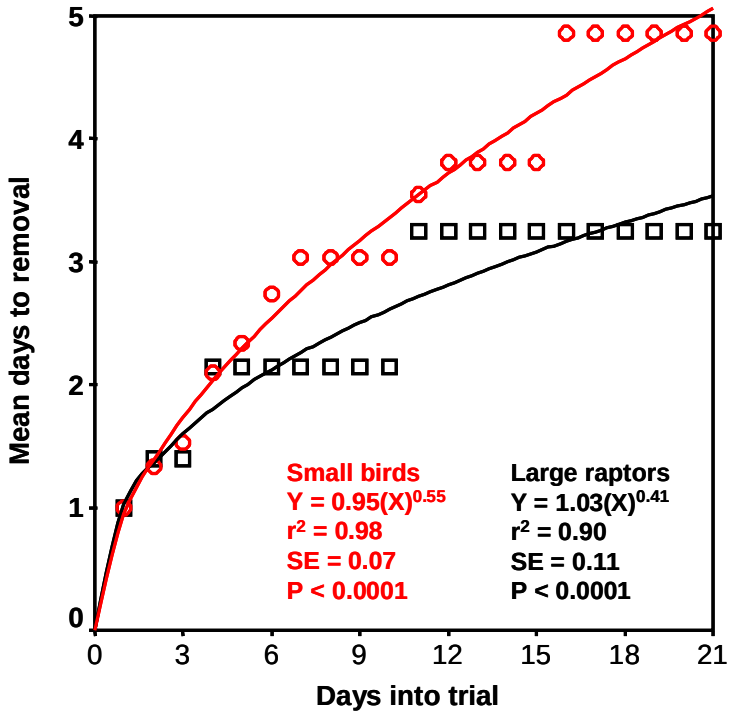

Figure 6. *Mean days to carcass removal increases with longer duration of the carcass removal trial at Vasco Caves Regional Preserve, Altamont Pass, California.*

When censoring remaining carcasses, $\bar{t}$ cannot be calculated unless at least one carcass has been removed. If no carcasses are removed during a trial, then $\bar{t}$ will be undefined, whereas R_C would equal 1 and the fatality rate could still be estimated. To prevent a trial result in which no carcasses are removed, and hence $\bar{t}$ cannot be calculated, investigators can place larger numbers of carcasses or they can perform longer trials. Placing larger numbers of carcasses can potentially swamp the vertebrate scavengers, thereby increasing mean days to removal. The option to perform longer trials might help explain why many of the trials intended to obtain $\bar{t}$ have been conducted for 40 to 64 days, or from nearly twice as long to more than four times longer than the average search interval used in the corresponding fatality monitoring. Values of $\bar{t}$ derived from such long trials will be larger than those derived from trials lasting no longer than the fatality search interval (Figure 5), and the fatality rates will be underestimated.

I must also point out that my estimates, relying on eqn. 1, remain conservative because I have yet to account for declining searcher detection rates as the search interval increases (searcher detection trials are based on a search interval of less or equal to one day). I also have not accounted for crippling bias – the non-detection of mortally wounded birds that leave the search area on their own volition before perishing – because there is no means to account for this bias. Underestimates of fatality rates in the Pacific Northwest might be partly caused by reliance on mean days to carcass removal as an adjustment for scavenger removal rates (Smallwood 2007), but some of the scavenger removal trials were sufficiently flawed that I had to replace their results with national averages in Smallwood (2007). Under-estimated fatality rates have been used to predict fatality rates of planned projects, which may be one reason why predicted fatality rates have so often been wrong (Table 1). The regression analysis appearing in *Figure 8* of App. C-4 was based on inaccurate fatality rate estimates.

Accounting for inter-annual variation.—The data presented in *Figure 8* of App. C-4 were derived mostly from one-year monitoring programs. However, inter-annual variation in fatality rates and utilization rates can be very high at a given project site. For example, fatality rates varied 5.7-fold from low to high over 8 years within a 10-year period in the Altamont Pass WRA (Figure 7). They varied nearly 2-fold over a 3-year period at Foote Creek Rim[9] and nearly 3-fold over a 4-year period at Buffalo Ridge.[10] Given this range of variation, single-year estimates are mere snapshots of fatality rates and unlikely to reveal meaningful relationships between fatality rates and utilization rates among wind projects.

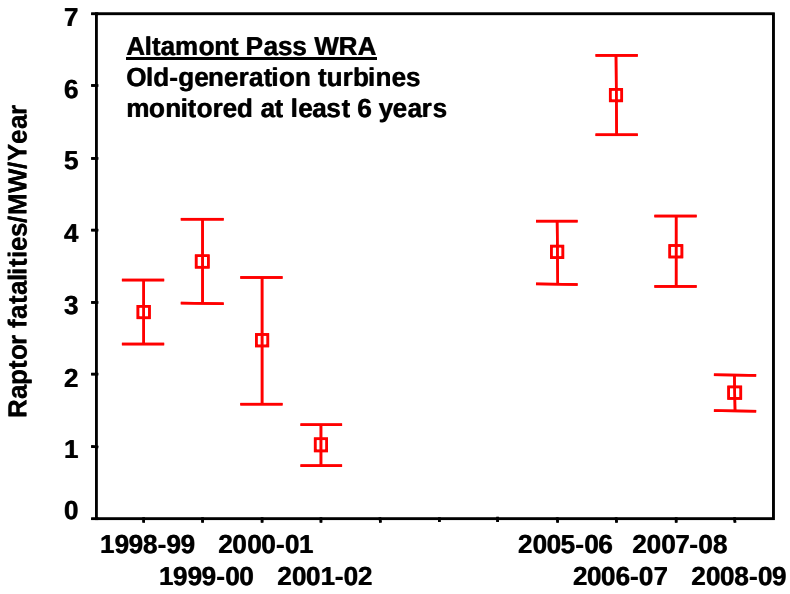

Figure 7. *Inter-annual estimates of raptor fatality rates in the Altamont Pass WRA.*

Regression relationship based on selective inclusion of data.—*Figure 8* of App. C-4 was based on only some of the wind projects for which there exists fatality rate and utilization rate estimates. Including more of the estimates available, the regression slope reported by Johnson et al. in the Whistling Ridge DEIS no longer applies (Figure 8).

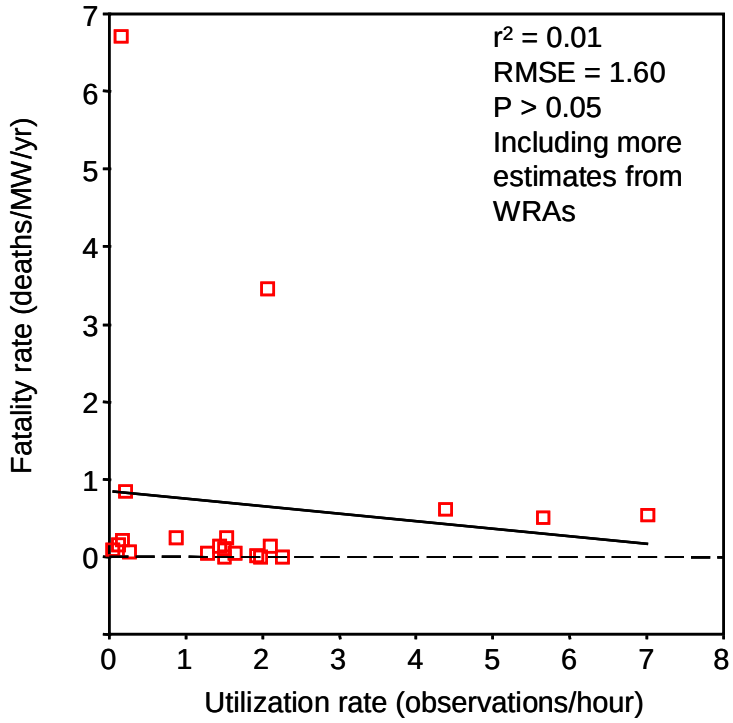

Figure 8. *Fatality rate estimates regressed on utilization rate estimates after including data from additional WRAs to those used by WEST, Inc.*

Consistency of regression relationship.—WEST, Inc. has been inconsistent in its utilization rates and fatality rates used to construct the regression model in *Figure 8* of App. C-4. For example, in the environmental review documents prepared for Windy Point, Windy Flats, and Hatchet Ridge, data representing the two extreme California wind projects (Diablo Winds and High Winds) indicated 30% higher utilization rates than depicted in the Whistling Ridge DEIS. Also, the fatality rate representing Diablo Winds was half as great in the Windy point, Windy Flats, and Hatchet Ridge documents compared to the Whistling Ridge DEIS. Compared to the regression model presented in the environmental review documents for Windy Point, Windy Flats, and Hatchet Ridge, the regression slope was more than twice as steep in the model presented for Whistling Ridge. These inconsistencies should be explained.

Fitted regression line intercepts 0 fatalities before it intercepts Y-axis.—The DEIS (page 3-79) predicted that Whistling Ridge will cause 0 raptor fatalities because its estimated utilization rate appeared to the left of the Y-axis 0-intercept in *Figure 8* of App. C-4. This prediction was unrealistic and inconsistent with the very data that contributed to the estimated regression line. In fact, one of the wind projects that contributed to Johnson et al.'s regression model also appeared to the left of the Y-axis 0-intercept, but it was represented as having killed 0.09 raptors/MW/year (my estimate of the fatality rate of this project was twice as high, however). In addition to this inconsistency in the use of the regression, omitting the two Central California wind projects from the analysis flips the regression slope from positive to negative, potentially leading to an opposite conclusion – that Whistling Ridge will kill more raptors than any other wind project in Washington or Oregon. However, for multiple reasons discussed below, I advise against using my revised regression line or the Johnson et al.'s regression line for predicting fatality rates.

Calculation of utilization rates.—Utilization rates contributing to the regression model were often calculated as means among seasonal totals, rather than annual total observations per year or weighted averages. Weighted averages should be used if surveys were performed regularly across all seasons, where the weightings are based on duration of each season. Without weighting, simple averaging among seasonal total utilization rates likely under-represents the contributions of longer seasons with higher bird use.

Summary of fatality rates regressed on utilization rates

The consultants who prepared the supporting documents for the DEIS have been unable to accurately predict raptor fatality rates, as demonstrated above. In fact, their predictions have been much too low, and the same problem can be demonstrated for bats and other bird species. Upon examination, the methods used to predict fatality rates appear to be ineffective, as raptor fatality rates failed to correlate with nesting densities, utilization rates, and exposure index values. The methods used by the consultants simply do not work. The predictions of fatality rates in the Whistling Ridge DEIS cannot be relied upon.

Exposure index values

On page 3-77, the DEIS summarizes the calculation of the exposure index (also see App. C-4), which it said was used to assess the risk of collision of each bird species. In fact, on the same page and on subsequent pages the DEIS did just that – it offered conclusions about the likelihoods of collision-caused fatalities based on values of the exposure index. However, I have never seen a test of the relationship between fatality rates and exposure index. Based on my own experience attempting to relate fatality rates to variables similar to the exposure index, I am skeptical that WEST, Inc. has actually generated a hypothesis test result that would support the use of the exposure index as a predictive tool. Therefore, I tested for a relationship using data from the Big Horn and Wild Horse Wind Projects (Figure 7).

I found no hint that fatality rates could be predicted by the exposure index. Furthermore, between the two projects 27 species (23%) were not detected during utilization surveys at one or both project sites but were killed by wind turbines at the same project site. Of the 22 species that were detected during utilization surveys at one or both project sites and that were also killed by wind turbines, only 4 of them (18%) were given exposure index values >0. In other words, there was no correspondence between the exposure index and fatality rates. The exposure index appears to be completely ineffective as a predictor of fatality rates caused by wind projects.

Nesting densities

I collected reports of raptor nesting densities and raptor fatality rates from wind projects throughout the western states. I found no trend in the relationship between fatality rates and nesting density that would suggest that nesting density explains some of the variation in raptor fatality rates (Figure 8).

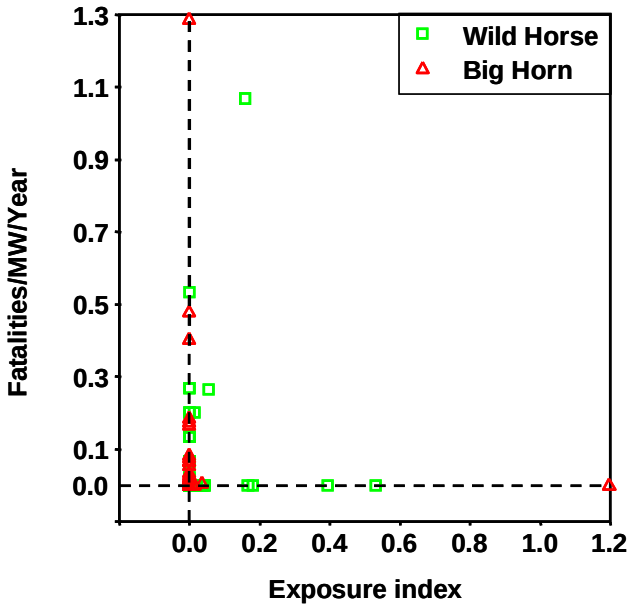

Figure 7. *Relationship between fatality rates and exposure index values for each bird species documented in utilization surveys and fatality searches at the Big Horn and Wild Horse Wind Energy projects. I omitted bats and unidentified birds such as sparrow, falcon, or passerine. I included only estimates for individual, named species, totaling 115 estimates between the project sites (some species appear twice, once for each project site).*

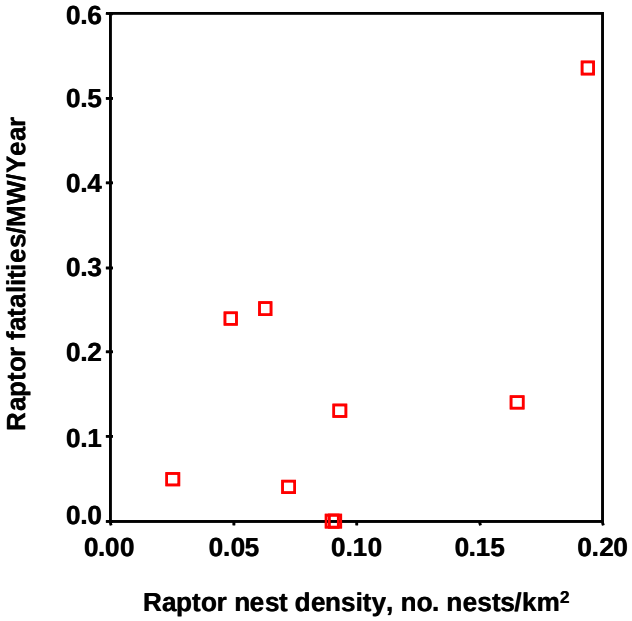

Figure 8. *Raptor fatality rates did not correlate significantly with raptor nest densities recorded on project sites and usually within a 2 mile buffer of the project boundaries. Raptor nesting density did not appear to predict raptor fatality rates at wind projects.*

ESTIMATES OF PROJECT IMPACTS – COLLISIONS

The DEIS predicted 0 raptors would be killed by the Whistling Ridge wind turbines, but this conclusion did not comport with the record of fatalities documented at existing wind energy projects (Table 3). There have been only two wind projects that documented 0 raptor fatalities, but those estimates were based on one year of monitoring, which was insufficient. Based on reports of fatality monitoring at 23 wind projects in Washington, Oregon and California, the average fatality rates projected to 75 MW of rated capacity would predict 33 raptor fatalities per year, 422 bird (including raptor) fatalities per year, and 86 bat fatalities per year (Table 3). However, the Whistling Ridge project site differs from all the others because it would be in a mountainous and forested environment that is also often enveloped by clouds. Given the absence of existing wind farms in these conditions in the Pacific Northwest, I cannot provide reliable estimates of collision rates at Whistling Ridge, but I caution that fatality rates could be much higher than listed in Table 3.

Furthermore, the fatality rate projections in Table 3 are interim rates before I update Smallwood (2007) to improve the adjustment factors for searcher detection error and scavenger removal rate. My 2007 paper was based on available searcher detection and scavenger removal trials available at the time, but hundreds of trials have been performed since then. I have integrated the data from these hundreds of trials, and I have observed much faster removal rates for most taxonomic groups, especially for bats, as well as lower searcher detection rates. I have not had time yet to finalize my analysis of these data from newer trials. I anticipate that my fatality rate estimates will be higher once I have updated Smallwood (2007).

Table 3. *Predicted wind turbine-caused annual fatalities based on projections of my independent estimates of collision deaths/MW/year among 23 modern wind farms in Washington, Oregon, and California. Note that these projections did not account for the unique environmental setting of Whistling Ridge, as none of the available fatality rate data were from forested landscapes. Fatality rates could be considerably higher at Whistling Ridge due to forest cover and due to occlusion of turbines caused by the area being frequently enveloped by clouds.*

	Collision deaths/MW/yr		Annual deaths
Group	Predicted in Whistling Ridge DEIS	Mean among 23 modern wind projects in western US	Projected to Whistling Ridge
All raptors	0	0.438	33
All birds	No prediction	5.623	422
All bats	"Some"	1.143	86

ESTIMATES OF PROJECT IMPACTS -- HABITAT

According to the DEIS (page 3-35), "*the project area includes no native habitat and is permanently committed to use by commercial forestry operations…*" and, due to frequent and repeated disturbances, "*the quality and value of the forest is generally considered low.*" These statements reveal a lack of understanding in the habitat concept, and are therefore inappropriate in a document intended to inform the public and decision-makers. Habitat is defined by the

species' use of the environment,[11] so there is no such thing as "native habitat." The fact that many terrestrial vertebrate species continue to reside and use the project area, as documented by the utilization surveys,[12] is proof that the project site continues to serve as habitat for many species. Over 87 hours of surveys from fixed observation stations, WEST, Inc. detected 90 species of bird, which equals >1 species per hour detected. For comparison, 979 hours of survey at Altamont Pass detected 35 bird species, or 0.036 species per hour.[13] Bird species diversity is much greater at Whistling Ridge than at the Altamont Pass, where bird fatalities caused by wind turbines are notoriously high.

Ecological integrity is the degree to which the species assemblage is composed of native species that are supposed to occur in a particular environment. The degree to which a species list is composed of exotic species is a measure of site invisibility, which tends to increase with reduced ecological integrity.[14] Of the 90 bird species detected at Whistling Ridge, only wild turkey was exotic, and this species is quasi-exotic as it only spread its range from east of the Mississippi River. In my experience, Whistling Ridge exhibits a very high level of ecological integrity and a very low level of site invisibility for terrestrial vertebrates. The characterization of poor habitat and low value on Page 3-35 was misleading.

According to the DEIS (page 3-50), "*northern spotted owls will not be "taken" by the proposed project*." I disagree with the foundation for this conclusion. The argument was made that a US Fish and Wildlife Service protocol can be interpreted to conclude that northern spotted owls no longer occupy historical nest sites because owls were not detected at the sites in 6 to 8 years. Government protocols do not dictate biological reality. It has been well established that animal populations tend to be spatially dynamic, meaning that centers of activity shift periodically.[15] In most cases, the shifting of activity centers tend to shift locations every generation or so, and I would consider 6 to 8 years to be short of a northern spotted owl generation. Hypotheses for the spatial shifts have included: (1) escaping parasite or predator loads; (2) exhaustion of resources; (3) dispersal of progeny as the natal population senesces; and, (4) some combination of these hypothesized factors. Just because a species has not been detected for a while does not mean the species will never return, and I state this without implying that I believe northern spotted owls no longer occur at the site.

Some conclusions in the DEIS were inconsistent with earlier foundation statements. For example, on page 3-59, the DEIS stated, "*little is known about this species* [Keen's myotis]," and then a few sentences later it stated, "*the likelihood of occurrence on the site is considered low.*" Similarly, on page 3-60, the DEIS stated, "*Based on lack of detailed information on this species* (Townsend's big-eared bat] *distribution and nature of the bat surveys conducted on the site, it is difficult to conclude with certainty the likelihood of Townsend's big-eared bats occurring on the project site. … the likelihood of occurrence on the site is considered to be low.*" In both these cases, the conclusions of low likelihood of occurrence came immediately following admissions that the analysts knew very little about these species. These types of conclusions are inconsistent with the precautionary principle in risk assessment, which should be a principle applied to any DEIS.

CUMULATIVE IMPACTS ANALYSIS

On page 3-83, the DEIS stated, "*The proposed project would cause mortality to birds and bats through turbine collisions. However, the level of mortality is not anticipated to be sufficient to negatively affect the population viability of any single species*." This conclusion was offered in the absence of any population viability analyses (PVAs) or any other defensible risk assessments. There is no scientific basis for this conclusion. In the discussion that follows, I address the cumulative impacts analyses performed by WEST, Inc. and included in the DEIS as Appendices C-11 and C-12.

In Apps. C-11 and C-12, Johnson and Erickson (2008)[16] and Young and Poulton (2007)[17] performed what they termed cumulative effects analysis. In the case of Johnson and Erickson (2008), the cumulative effects analysis was of the wind industry's desired build-out of about 6,700 MW of wind energy capacity on the Columbia Plateau spanning eastern Washington and eastern Oregon. They averaged fatality rates from existing wind farms in the region and multiplied the average rate against the desired build-out capacity of 6,700 MW. They then compared their predicted annual fatalities to their estimates of regional population size, relying on a population estimator based on breeding bird survey (BBS) results from the 1990s and provided by the Partners in Flight North American Landbird Conservation Plan. However, these estimates were unsuitable for the use that Johnson and Erickson (2010) and Young and Poulton (2007) made of them, and I found several other problems with the analysis, discussed below.

Regional Population Estimates.--Johnson and Erickson (2010) neglected to mention that there exist relatively large standard errors associated with the mean detections per BBS route. I used the standard errors to calculate 95% confidence intervals, which yielded very large ranges of population size for each species addressed in Johnson and Erickson (2008). For example, the lower bound estimate for ferruginous hawk was less than 0, and the differences between one side of the confidence interval and the mean population estimate ranged 29% (American kestrel) to 65% (ferruginous hawk) of the magnitude of the mean. Without addressing the large error terms in the data, Johnson and Erickson (2008) inadequately informed the reader about the suitability of their population estimates for assessing biological significance of "cumulative impacts."

More importantly, Johnson and Erickson (2008) dismissed strong criticism of a review of the Partners in Flight approach. Thogmartin et al. (2006)[18] reviewed the population estimation approach of Partners in Flight, and found the approach to be an inappropriate use of BBS data. The BBS was designed for detecting long-term population trends, but not for estimating population size. Thogmartin et al. (2006) also pointed out several potential biases in the Partners in Flight use of BBS data. The most likely and most substantial bias is the extrapolation of detection rates from roadways across large expanses of potential habitat lacking roads. Having performed many years of bird surveys both along roadways and far from roads, I cannot agree more with Thogmartin et al.'s conclusion that this was a serious bias, and one that likely inflated population estimates of the species addressed in Johnson and Erickson (2008). American kestrels, red-tailed hawks, and ferruginous hawks congregate along roadways because utility poles occur along roadways and are used for perching, especially on agricultural and shrub-steppe landscapes lacking natural tall perch structures. Furthermore, on agricultural landscapes, foraging habitat often occurs as strips between roads and disked fields. Extrapolating densities

from roadways will produce absurdly inflated numerical estimates of numerous bird species, especially for American kestrels because their densities were estimates only within 200 m of BBS routes (the usual radius used by Partners in Flight was 400 m). A later version of Johnson and Erickson's cumulative impacts analysis (Johnson and Erickson 2010), which was mysteriously not the analysis used in App. C11, dismissed Thogmartin et al.'s review because no other regional population estimates exist for the Columbia Plateau. This rationale was unscientific.[19]

Johnson and Erickson (2008) did not provide a Partners in Flight estimate of the population size for golden eagles on the Columbia Plateau Ecoregion within Washington and Oregon because golden eagle fatalities had yet to be documented among wind turbines on the Columbia Plateau. However, golden eagle fatalities were subsequently documented, so the 2010 version of Johnson and Erickson's cumulative impacts analysis included a golden eagle population estimate, which was 1,700. For this number of golden eagles to occur on the Columbia Plateau within Washington and Oregon, the population density would have to be nearly as high as recorded in the Altamont Pass, or nearly one nesting pair per 19 km^2.[20] The Altamont Pass golden eagle density was characterized by Hunt et al. as one of the highest ever recorded. Therefore, for the Johnson and Erickson estimate to be true, the Columbia Basin would require an Altamont-level density to extend across the entirety of the Plateau, which is highly unlikely based on my understanding of animal density and distribution. Furthermore, the baseline studies performed by Johnson and Erickson and their WEST, Inc. colleagues have universally reported much lower golden eagle observations per hour among project sites in the Columbia Plateau Ecoregion as compared to the utilization rates documented in the Altamont Pass. As examples, WEST, Inc. reported 0 golden eagle observations during baseline surveys at Big Horn, 0.07/hour after 90 hours at Wild Horse, 0.033/hour after 270 hours at Golden Hills, 0.024/hour after 126 hours at Hopkins Ridge. For comparison, representative observation rates from the Altamont Pass have been 0.278/hour and 0.314/hour. The golden eagle population on the Columbia Plateau cannot be just as dense as in the Altamont Pass while at the same time trained observers count them at rates that are 0%, 8%, and 24% of the rates observed in the Altamont Pass.

As for Swainson's hawk, Johnson and Erickson (2008) estimated 10,000 breeding Swainson's hawks reside on the Columbia Plateau within Washington and Oregon. My model of nesting density projected only 579 pairs, or 1,158 adults.[21] My projection was extended beyond all the population density estimates that were available to contribute to the model, so to be conservative I can rationalize doubling my estimate to 2,315, which is still a much smaller population size than estimated by Johnson and Erickson.

Johnson and Erickson estimated the breeding American kestrel population to be 170,000 on the Columbia Plateau within Washington and Oregon. This number would amount to 7% of the entire North American breeding population that was estimated 28 years ago, and it would be a much larger percentage of today's North American breeding population.[22] It would have me believe that at least 7% of North America's American kestrel population resides on 0.55% of North America's land mass, or nearly 13 times more densely other than expected in the Columbia Plateau Ecoregion. This regional population estimate also would have me believe there resides 1 breeding American kestrel for every 0.79 km^2, or one pair per 1.58 km^2. This density across such a large area would be highly unlikely. Furthermore, Johnson and Erickson

(2008) claimed that the level of mortality likely to be caused by wind turbines following desired build-out in the Columbia Plateau would be sustainable and therefore of no significant population impact. This conclusion was not supported by a scientifically acceptable analysis, and it was inconsistent with the overall declining trend of American kestrels across North American and within Washington, specifically.[23]

Fatality Rates.--Johnson and Erickson (2008, 2010) compared fatality rates among Oregon and Washington wind farms, and then extrapolated the mean fatality rates to the projected build-out of 6,700 MW of wind power capacity in the Columbia Plateau Ecoregion. The fatality rates in their Table 2 (Table 1 in the 2010 analysis) were too low (Table 4). For example, using the same data, I found their estimates to be low for Big Horn, Wild Horse, and Stateline. The raptor fatality rate reported for Big Horn was 0.15 deaths/MW/year, whereas I estimated the rate to be 60% higher.[24] The raptor fatality rate at Wild Horse was reported to be 0.09 deaths/MW/year, but I estimate the rate to be 178% higher. The raptor fatality rate at Stateline was reported to be 0.091 deaths/MW/year, but I estimated the rate to be 43% higher. Extrapolating my Wild Horse fatality rate estimates to 6,700 MW of cumulative capacity yielded 1,688 raptors per year and 27,230 total birds per year. Extrapolating my Big Horn fatality rate estimates to 6,700 MW of cumulative capacity yielded 1,625 raptors per year and 23,568 total birds per year. The average of the extrapolations from these two projects yielded 1,656 raptors per year and 25,399 total birds per year. These extrapolations are 3.2 times greater for all raptors and 1.4 times greater for all birds than forecast by Johnson and Erickson (2008, 2010), and I have yet to consider the confidence intervals around the fatality rate estimates, which are very large. As for American kestrel, Johnson and Erickson (2008, 2010) forecast 162 deaths/MW/year, but my average estimates between Wild Horse and Big Horn, extrapolated to 6,700 MW, indicates the cumulative toll will be 1,381 deaths/MW/year, or 8.5 times greater than forecast by Johnson and Erickson (2008, 2010).

I also compared cumulative annual fatalities predicted by WEST, Inc. (and included in the DEIS) to my predictions based on my independent estimates of fatality rates using data in the same reports (Table 4). Compared to the predictions made by WEST, Inc., my predicted cumulative annual fatalities caused by the projected build-out of wind energy facilities in the Columbia Basin Ecoregion were 6.3 times greater for raptors, 2.6 times greater for all birds as a group, and about the same for bats (Table 4). Most of the difference in predictions between those made by me and WEST, Inc. can be explained by the estimators used, and specifically whether scavenger removal rates of carcasses were characterized by mean days to removal or by proportion of carcasses remaining at the *i*th day into a removal trial (see earlier discussion).

Table 4. *Differences in predicted fatality rates across neighboring Klickitat County and across the Columbia Basin Ecoregion, where the predictions were made by WEST, Inc. and by my use of the same data in available reports. Note that Whistling Ridge is not part of the Columbia Basin Ecoregion, but the DEIS nevertheless relied on a cumulative impacts analysis directed toward wind projects in the Columbia Basin Ecoregion. In either case, the WEST, Inc. estimates of fatality rates were much lower than my estimates, based on the same data.*

	Annual deaths in 1,000 MW Klickitat County		Annual deaths in 6,700 MW Columbia Basin Ecoregion		My estimate as multiple of WEST, Inc. estimates	
Group	Predicted by WEST (2004)[25]	Projected by my mean estimate (N = 23)	Predicted by Johnson and Erickson (2008)	Projected by my mean estimate (N = 23)	Klickitat County	Columbia Basin Ecoregion
All raptors	33	438	469	2,935	13.3	6.3
All birds	1461	5,623	14,539	37,674	3.8	2.6
All bats	467-600	1,143	7,906	7,658	1.9-2.4	1.0

Avian Use Rates.--It was inappropriate to compare avian use rates among wind farms without accounting for differences in maximum survey distances from the observer and in volumes of visible airspace from observation stations. Topography varies from place to place, and so does the proportion of the survey area that is visible from the observation stations. Also, detection rates of birds decline rapidly with distance from the observer, more so for smaller-bodied birds, so comparing use rates between wind farms will be substantially biased when the maximum survey distance was 800 meters in one wind farm and only 400 meters in another, or when few birds of one species will be detected beyond 300 m whereas most birds of another species will be detectable to 800 m. Without accounting for species-specific detection functions and variation in visible airspace due to topographic occlusion, comparisons of use rates cannot be reliable.[26]

ADDITIONAL COMMENTS ON THE DEIS

Cumulative impacts analysis in App. C-12 (page 1) identified dryland agriculture, CRP, and rangeland to be more suitable for wind power development on the Columbia Plateau than the surrounding mountainous areas that are more forested. I agree with this assessment. While developing a screening tool for siting wind energy facilities in California, I discovered that forested sites pose greater hazards to more bird species, including special-status species.[27] It appeared that overall impacts of wind power projects on wildlife would likely be greater in forested environments.

According to the DEIS (page 3-46), "*Although* [golden eagles] *soar at high altitudes, they drop down to the ground to capture prey*." This characterization can be misleading. Golden eagles typically hunt while flying low to the ground, using a flight behavior termed 'contour flying.' In fact, the summary of the two golden eagles seen flying on the project site (same page, 3-46) indicated the eagles were at heights above ground typical of the heights used during contour flights. This contour flying appears to be a behavior that predisposes golden eagles to wind turbine collisions, and it is not a behavior that this species will change.

Table 2 in Young and Poulton (2007) summarized "Mean annual mortality" estimates from various wind power projects in the region. However, most of the cited estimates were for one year only and not multiple years as the heading, "Mean annual mortality," would lead readers to believe.

Making the argument that background mortality causes fatality rates to be over-estimated at wind project sites, Young and Poulton (2007: page 14) claimed they found 0.33 bird carcasses per turbine plot equivalent per year in background fatality monitoring at two wind project sites, one in Montana and one at Buffalo Ridge, Minnesota. However, Young and Poulton (2007) neglected to mention that background mortality searches have been performed at multiple wind project sites by multiple investigators over the past decade, and those searches turned up very few or zero naturally occurring bird carcasses (Table 5). The average among reported background mortality surveys (0.0108 dead birds per turbine plot-equivalent) was 32 times lower than claimed by Young and Poulton (2007). In the case of Buffalo Ridge, which was one of the two project sites cited by Young and Poulton (2007), another WEST, Inc. team (Johnson et al 2000)[28] conducted 2,482 searches in reference plots and found one naturally occurring fatality for every 78 person-hours spent searching. They concluded, "The amount of natural mortality occurring in the study area is so small that attempting to correct fatality estimates for natural mortality is not warranted."

Table 5. *Results of background mortality surveys in which fatality searches were performed in similar environments as occurred amongst the project's wind turbines, but where there were no wind turbines. The turbine plot equivalent was 0.5625 ha, or the area within a typical square search plot used at modern wind turbines of 75 m per side. Anderson et al. (2005)[29] also performed background mortality searches, but their searches were nearby the wind turbines of the Tehachapi Pass, and appeared to have likely included birds killed by the wind turbines.*

Source[30]	**Study site**	**No. sites**	**Ha per site**	**Searches per site**	**Ha search effort**	**Dead birds found**	**Deaths / turbine plot equivalent**
Nicholson 2003	Buffalo Mountain, TN	3	0.785	150	353.40	2	0.0101
Harmata et al. 1998					596.00	4	0.0119
Kerlinger et al. 2000	Ponnequin, CO		24.000	5	120.00	2	0.0296
Schmidt et al. 2003	National Wind Technology Center, CO	10	0.790	24	189.60	0	0.0000
Kerlinger et al. 2005	High Winds, CA	90	1.767	1	159.04	0	0.0000
Average							0.0103

MITIGATION MEASURES

The DEIS listed several wind turbine design features as mitigation measures, including:

- Use of tubular tower to minimize perching;
- Minimize use of turbines lighting to minimize the chance of disorienting birds and bats; and,
- Install newer generation up-wind turbines.

However, all three of these design features are pursued for economic reasons having nothing to do with mitigating wildlife impacts, and there is no empirical evidence that any of these features have anything to do with bird and bat fatalities. These design features do not in any way mitigate for the impacts of bird and bat collisions.

Conducting a raptor nest survey prior to construction would unlikely mitigate project impacts. How could it, other than influencing the timing of installation to minimize disturbance caused by construction activities? There is no established relationship between raptor nest density and wind turbine collision rates.

I concur with the need for post-construction fatality monitoring, but I would set the minimum to three years instead of two years, and I would require that all the turbines are searched for fatalities over the first three years and that a subset of the turbines be searched through the life of the project.

I agree that a Technical Advisory Committee (TAC) should be established, but EFSEC and BPA should impose minimum standards for TAC membership, including scientific credentials and experience with issues relevant to avian and bat impacts caused by wind projects. The TAC should be clearly authorized to select the fatality monitor, to require additional mitigation, and to change the monitoring. However, this measure should refrain from giving the impression that additional mitigation measures are readily available. In truth, there is little if anything that can be done to reduce bird and bat fatalities once the wind turbines are installed. There is no evidence that any measures have been implemented to reduce bird fatalities at modern wind energy projects, and so no evidence that any measures were effective.[31]

Unless the TAC is formed long before project construction, I do not believe mention should be made of adaptive management. To be true adaptive management, the measures would need to be formulated ahead of time, along with thresholds of success and alternative prescriptions. The TAC should work together with stakeholder groups to formulate an adaptive management plan, and the plan should be informed by adequate, directed pre-construction surveys. The currently available surveys are not adequate for informing adaptive management.

Recommended Mitigation Measures

Once the wind turbines are installed, there is little, if anything, that can be done to reduce fatality rates. Therefore, it is very important to carefully plan the installation of wind turbines, including tower height and wind turbine siting. Lee Neher and I have developed spatial models to predict hazard zones for specific species of raptor in the Altamont Pass, relying heavily on behavior and utilization surveys. Sufficient sample sizes of birds displaying specific flight behaviors, e.g., hovering, contouring, fly-catching, are needed to inform the models, which also rely on a resolute digital elevation model of the project area so that slope and wind conditions can be measured and related to bird flight patterns. Our models are being implemented in two repowering projects. Our approach or a similar approach should be utilized at Whistling Ridge, if the project is developed.

Once wind turbines are carefully sited, tower heights are decided upon to minimize encounters with birds, and the electrical distribution system is designed to minimize impacts, the wind turbine-caused fatalities should be low enough to establish a reasonable nexus between the project's impacts and the benefits gained through compensatory, offset mitigation.

Fatality monitoring and post-construction utilization monitoring should be performed for at least three years following project installation. The monitoring is needed to learn of successes and failures of the project planning so that the lessons can be applied to future wind energy projects. It is also needed to inform compensatory mitigation. All wind turbines should be included in the fatality monitoring to ensure adequate sample sizes are obtained. Fatality searches should be performed no less frequently than every two weeks, and two teams should perform searches independently of each other so that detection rates can be estimated without performing independent searcher detection and scavenger removal trials, which are fraught with biases and sources of uncertainty.[32]

SUMMARY

Collision Impacts

- The analysis of direct impacts caused by bird and bat collisions with wind turbines was incorrect and misleading. It relied on the same methodology that has most often resulted in predicted fatality rates being proven by post-construction monitoring to have been much too low. Measured raptor fatality rates have been up to 14 times higher than predicted fatalities.

- The impacts assessment relied on raptor fatality rates regressed on utilization rates, but this regression was fundamentally flawed in multiple ways.

    - The regression between fatality rates and utilization rates was pseudoreplicated, meaning the effective study units were not the study units implied in the graph – they were regions instead of wind projects. The positive regression slope was strongly leveraged by two California wind projects, the omission of which reverses the direction of the regression slope.

- The effort directed toward avian utilization surveys totaled 87 hours, which was grossly insufficient for characterizing utilization rates of many species, especially golden eagle and other raptors.

- The utilization surveys were diurnal, so were not designed to detect species active in the early morning, evening, or at night.

- The utilization surveys were extended to 800 m from the observer, which ensured that most flying birds would be undetected during each survey session, and no attempt was made to account for the proportion of the sky over the survey area that was occluded by terrain and forest. For these reasons, the utilization survey results were not comparable to other wind farms or among plots within the Whistling Ridge project site.

- The regression slope between fatality rates and utilization rates relied on fatality rates that were biased low in most of the available monitoring reports. Most of the fatality rates in the Pacific Northwest were derived from an estimator that relies on mean days to removal of placed carcasses in carcass removal trials, but carcasses in these trials must be censored from the calculation of the mean if the carcasses have not been removed by the end of the trial. This means the trials must extend for much longer periods than the average search interval of the fatality monitoring, and that mean days to removal is biased high and the resulting fatality estimates biased low.

- The regression between fatality rates and utilization rates was based mostly on monitoring that lasted only one year, but the inter-annual variation measured at other wind projects revealed up to nearly 6-fold differences in low to high fatality rates between years. This high inter-annual variation warrants a much larger sample size before any validity can be given to the regression used in this DEIS.

- The prediction of zero raptor fatalities at Whistling Ridge was fallacious because the prediction was based on the regression slope intercept being to the right of Whistling Ridge on the continuum of utilization rates among wind farms. In the very same graph, the slope intercept was also to the right of other wind farms where fatality rates were greater than zero.

- The DEIS also appeared to rely on an exposure index value to assess collision impacts of individual species. However, I tested the relationship between fatality rates and this exposure index at other wind farms, and found no relationship whatsoever.

- The DEIS appeared to rely on a comparison of raptor nesting densities among wind project sites, but I was unable to find a significant relationship between fatality rates and raptor nesting densities.

- Based on mean fatality rates estimated at other wind projects throughout Washington, Oregon and California, the minimum numbers of annual fatalities at Whistling Ridge would likely be 33 raptors, 422 birds (including raptors), and 86 bats, but actual rates would likely be much higher because unlike the other wind projects used to calculate the means, Whistling Ridge is located in a forested environment that is also frequently enveloped by clouds.

Other Impacts

- The impacts assessment directed to habitat fragmentation was also fallacious because the DEIS characterized the site as biologically impoverished, whereas the mere 87 hours of avian surveys there revealed a much higher avian species diversity than occurs in the Altamont Pass – the site of the most notoriously dangerous wind energy project on Earth to birds. Furthermore, all but one of 90 bird species were endemics, indicating a high level of ecological integrity at the site.

- Impacts to northern spotted owl were inappropriately dismissed, because this conclusion relied too much on interpreting US Fish and Wildlife Service protocols and not enough on wildlife biology and common sense.

Cumulative Impacts

- The cumulative impacts analysis in the DEIS was fundamentally flawed in several ways. First, the DEIS relied on a cumulative impacts analysis of the Columbia Basin Ecoregion, but Whistling Ridge occurs in a forested environment outside this Ecoregion. Second, the analysis relied on a Partners in Flight web site to estimate regional population sizes of bird species, but the Partners in Flight estimator did not pass scientific scrutiny in the scientific literature and the population estimates used in the DEIS were absurdly large. Third, reported avian fatality rates have been underestimated, so low fatality rates were compared to absurdly large population sizes to arrive at erroneous conclusions of no significant cumulative impacts. The cumulative impacts analysis cannot be taken seriously.

- Based on means from available reports of fatality monitoring at wind projects in the western US, build-out of 6,700 MW in the neighboring Columbia Basin Ecoregion could be expected to annually kill at least 2,935 raptors, 37,674 birds, and 7,658 bats, far exceeding the annual death toll at the notorious Altamont Pass.

- A new cumulative impacts analysis is needed for this project, and it needs to include the potentially unique impacts of siting wind turbines in the forested environment of Skamania County.

Mitigation Measures

- The DEIS listed several design features of the proposed wind turbines as preventive mitigation measures, but these features have not affected fatality rates and so are misleading.

- Post-construction monitoring should last at least 3 years for all turbines, and throughout the life of the project for a subset of turbines. Fatality searches should be no less frequent than twice per month.

- Minimum standards are needed for Technical Advisory Committee membership, and the TAC should be given authority to select the monitor, make changes to the monitoring program, and to require additional mitigation measures.

- Wind turbines should be carefully sited, and the siting should be based on adequate bird surveys, the results of which are related quantitatively to a resolute digital elevation model of the project site.

- Tower heights and the low and high reaches of the rotor plane should be based on an analysis of adequate avian survey data.

I recommend that the DEIS for Whistling Ridge be withdrawn, and that a new one be prepared. Much more effort should be directed toward pre-construction bird and bat surveys, and adequate analysis of the data should be performed. The methods used to predict impacts need to be replaced by scientifically defensible methods. The cumulative impacts analysis needs to be replaced, and the new one should include the impacts of siting wind turbines in the forested environments of Skamania County. The section on mitigation needs to be revised to avoid misleading readers about the effectives of turbine design features and adaptive management. The TAC needs to consist of qualified scientists, and the post-construction monitoring needs to be strengthened.

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[1] Bonneville Power Administration and Washington Energy Facility Site Evaluation Council. 2010. Whistling Ridge Energy Project Draft Environmental Impact Statement, DOE/EIS-0419.

[2] Smallwood, K. S., D. A. Bell, S. A. Snyder, and J. E. DiDonato. 2010. Novel scavenger removal trials increase estimates of wind turbine-caused avian fatality rates. Journal of Wildlife Management 74: 1089-1097 + Online Supplemental Material.

Smallwood, K. S., L. Neher, and D. A. Bell. 2009. Map-based repowering and reorganization of a wind resource area to minimize burrowing owl and other bird fatalities. Energies 2009(2):915-943. http://www.mdpi.com/1996-1073/2/4/915

Smallwood, K. S., L. Rugge, and M. L. Morrison. 2009. Influence of Behavior on Bird Mortality in Wind Energy Developments: The Altamont Pass Wind Resource Area, California. Journal of Wildlife Management 73:1082-1098.

Smallwood, K. S. and B. Karas. 2009. Avian and Bat Fatality Rates at Old-Generation and Repowered Wind Turbines in California. Journal of Wildlife Management 73:1062-1071.

Smallwood, K. S. 2009. Methods manual for assessing wind farm impacts to birds. Bird Conservation Series 26, Wild Bird Society of Japan, Tokyo. T. Ura, ed., in English with Japanese translation by T. Kurosawa.

Smallwood, K. S. 2009. Mitigation in U.S. Wind Farms. Pages 68-76 in H. Hötker (Ed.), Birds of Prey and Wind Farms: Analysis of problems and possible solutions. Documentation of an International Workshop in Berlin, 21st and 22nd October 2008. Michael-Otto-Instiut im NABU, Goosstroot 1, 24861 Bergenhusen, Germany. http://bergenhusen.nabu.de/forschung/greifvoegel/

Smallwood, K. S. 2007. Estimating wind turbine-caused bird mortality. Journal of Wildlife Management 71:2781-2791.

Smallwood, K. S., C. G. Thelander. 2008. Bird Mortality in the Altamont Pass Wind Resource Area, California. Journal of Wildlife Management 72:215-223.

Smallwood, K. S., C. G. Thelander, M. L. Morrison, and L. M. Rugge. 2007. Burrowing owl mortality in the Altamont Pass Wind Resource Area. Journal of Wildlife Management 71:1513-1524.

Smallwood, K. S., and L. Neher. 2004. Repowering the APWRA: Forecasting and minimizing avian mortality without significant loss of power generation. California Energy Commission, PIER Energy-Related Environmental Research. CEC-500-2005-005. [Reprinted (in Japanese) in Yukihiro Kominami, Tatsuya Ura, Koshitawa, and Tsuchiya, Editors, Wildlife and Wind Turbine Report 5. Wild Bird Society of Japan, Tokyo.]

Smallwood, K. S. and C. Thelander. 2005. Bird mortality in the Altamont Pass Wind Resource Area, March 1998 – September 2001 Final Report. National Renewable Energy Laboratory, NREL/SR-500-36973. Golden, Colorado.

Smallwood, K. S. and C. Thelander. 2004. Developing methods to reduce bird mortality in the Altamont Pass Wind Resource Area. Final Report to the California Energy Commission, Public Interest Energy Research – Environmental Area, Contract No. 500-01-019. Sacramento, California.

Smallwood, K. S., L. Neher, D. Bell, J. DiDonato, B. Karas, S. Snyder, and S. Lopez. 2008. Range Management Practices to Reduce Wind Turbine Impacts on Burrowing Owls and Other Raptors in the Altamont Pass Wind Resource Area, California. Final Report to the California Energy Commission, Public Interest Energy Research – Environmental Area, Contract No. Pending. Sacramento, California.

Smallwood, K. S., and L. Neher. 2008. Map-Based Repowering of the Altamont Pass Wind Resource Area Based on Burrowing Owl Burrows, Raptor Flights, and Collisions with Wind Turbines. Final Report to the California Energy Commission, Public Interest Energy Research – Environmental Area, Contract No. Pending. Sacramento, California.

Smallwood, K. Shawn, Lourdes Rugge, Stacia Hoover, Michael L. Morrison, Carl Thelander. 2001. Intra- and inter-turbine string comparison of fatalities to animal burrow densities at Altamont Pass. Pages 23-37 in S. S. Schwartz, ed., Proceedings of the National Avian-Wind Power Planning Meeting IV. RESOLVE, Inc., Washington, D.C.

[3] Watt, K. E. F. 1991. Taming the future: The necessary revolution in scientific forecasting. The Seamless Web Press, Davis, California.

[4] Smallwood, K. S., L. Neher, D. Bell, J. DiDonato, B. Karas, S. Snyder, and S. Lopez. 2008. Range Management Practices to Reduce Wind Turbine Impacts on Burrowing Owls and Other Raptors in

the Altamont Pass Wind Resource Area, California. Final Report to the California Energy Commission, Public Interest Energy Research – Environmental Area, Contract No. Pending. Sacramento, California.

[5] Smallwood, K. S., L. Rugge, and M. L. Morrison. 2009. Influence of Behavior on Bird Mortality in Wind Energy Developments: The Altamont Pass Wind Resource Area, California. Journal of Wildlife Management 73:1082-1098.

[6] Smallwood, K. S., L. Rugge, and M. L. Morrison. 2009. Influence of Behavior on Bird Mortality in Wind Energy Developments: The Altamont Pass Wind Resource Area, California. Journal of Wildlife Management 73:1082-1098.

[7] E.g., van Belle, G. 2002. Statistical rules of thumb. A. John Wiley & Sons, Inc., New York.

[8] Horvitz, D.G. and D.J. Thompson. 1952. A generalization of sampling without replacement from a finite universe. Journal of American Statistical Association 47:663-685.

[9] Young, D. P., W. P. Erickson, R. E. Good, M. D. Strickland, and G. D. Johnson. 2003. Final Report: Avian and bat mortality associated with the initial phase of the Foote Creek Rim Windpower Pronject, Carbon County, Wyoming. WEST, Inc., Cheyenne, Wyoming.

[10] Johnson, G. J., W. P. Erickson, M. D. Strickland, M. F. Shepherd, D. A. Shepherd, and S. A. Sarappo. 2002. Collision mortality of local and migrant birds at a large-scale wind-power development on Buffalo Ridge, Minnesota. Wildlife Society Bulletin 30:879-887.

[11] Hall, L.S., P.R. Krausman, and M.L. Morrison. 1997. The habitat concept and a plea for standard terminology. Wildlife Society Bulletin 25:173-182.

Smallwood, K.S. 2002. Habitat models based on numerical comparisons. Pages 83-95 *in* Predicting species occurrences: Issues of scale and accuracy, J. M. Scott, P. J. Heglund, M. Morrison, M. Raphael, J. Haufler, and B. Wall, editors. Island Press, Covello, California.

[12] See Table 6 in App. C-4 for a list of bird surveys observed during surveys.

[13] Smallwood, K. S. and C. Thelander. 2005. Bird mortality in the Altamont Pass Wind Resource Area, March 1998 – September 2001 Final Report. National Renewable Energy Laboratory, NREL/SR-500-36973. Golden, Colorado.

[14] Smallwood, K.S. 1994. Site Invasibility by Exotic Birds and Mammals. Biological Conservation 69:251-259.

[15] Taylor, R.A.J., and L.R. Taylor. 1979. A Behavioral Model for the Evolution of Spatial Dynamics. Pages 1-28 in R.M. Anderson, B.D. Turner, and L.R. Taylor (editors). *Population Dynamics*. Blackwell Scientific Publications, Oxford.

den Boer, P.J. 1981. On the Survival of Populations in a Heterogeneous and Variable Environment. Oecologia 50:39-53.

[16] Johnson, G. D. and W.P. Erickson. 2008. Avian, bat and habitat cumulative impacts associated with wind energy development in the Columbia Plateau Ecoregion of eastern Washington and Oregon. Unpublished Report to Klickitat County Planning Department. Goldedale, Washington.

[17] Young, D. P., and V. K. Poulton. 2007. Avian and bat cumulative impact analysis: Shepherds Flat Wind Projectm Gilliam and Morrow Counties, Oregon. Unpublished Report to Lifeline Renewable Energy, Inc.

[18] Thogmartin, W.E, F.P. Howe, F.C. James, D.H. Johnson, E.T. Reed, J.R. Sauer, and F.R. Thompson, III. 2006. A review of the population estimation approach of the North American Landbird Conservation Plan. The Auk 123:892-904.

[19] Using the same logic, I could guess at population sizes of bird species on the Colombia Plateau, obliging Johnson and Erickson to use my guesses.

[20] Hunt, W. G., R. E. Jackman, T. L. Hunt, D. E. Driscoll, and L. Culp. 1998. A population study of golden eagles in the Altamont Pass Wind Resource Area: population trend analysis 1997. Report to National Renewable Energy Laboratory, Subcontract XAT-6-16459-01. National Technical Information Service, U. S. Department of Commerce, Springfield, Virginia.

[21] Smallwood, K.S. 1995. Scaling Swainson's hawk population density for assessing habitat-use across an agricultural landscape. J. Raptor Research 29:172-178.

[22] Bird, D. M. 2009. The American kestrel: From common to scarce? Journal of Raptor Research 43:261-262.

[23] Smallwood, J. A., M. F. Causey, D. H. Mossop, and 11 other authors. 2009. Why are American kestrel (*Falco sparverius*) populations declining in North America? Evidence from nest box programs. Journal of Raptor Research 43:274-282.

[24] Smallwood, K. S. 2008. Avian and Bat Mortality at the Big Horn Wind Energy Project, Klickitat County, Washington. Unpublished report to Friends of Skamania County.

[25] Western EcoSystems Technology, Inc. (WEST). 2004. Analysis of Potential Wildlife/Wind Plant Interactions. Big Horn Site, Klickitat County, Washington. June 2004.

[26] Smallwood, K. S., L. Rugge, and M. L. Morrison. 2009. Influence of Behavior on Bird Mortality in Wind Energy Developments: The Altamont Pass Wind Resource Area, California. Journal of Wildlife Management 73:1082-1098.

[27] Smallwood, K. S. and L. Neher. 2010. Screening wind resource areas for bird impacts. In review at a scientific journal.

[28] Johnson, G. D., W. P. Erickson, M. D. Strickland, M. F. Shepherd, and D. A. Shepherd. 2000. Final Report: Avian monitoring studies at the Buffalo Ridge, Minnesota Wind Resource Area: Results of a 4-year study. Unpubl. Report for Northern States Power Company, Minneapolis, Minnesota.

[29] Anderson, R., N. Neumann, J. Tom, W. P. Erickson, M. D. Strickland, M. Bourassa, K. J. Bay, and K. J. Sernka. 2004. Avian monitoring and risk assessment at the Tehachapi Pass Wind Resource Area: Period of Performance: October 2, 1996–May 27, 1998. NREL/SR-500-36416, National Renewable Energy Laboratory, Golden, CO. 102 pp.

[30] Harmata, A., K. Podruzny, and J. Zelenak. 1998. Avian use of Norris Hill Wind Resource Area, Montana. NREL/SR-500-23822, National Renewable Energy Laboratory, Golden, CO.

Johnson, G. D., W. P. Erickson, M. D. Strickland, M. F. Shepherd, and D. A. Shepherd. 2000. Final Report: Avian monitoring studies at the Buffalo Ridge, Minnesota Wind Resource Area: Results of a 4-year study. Unpubl. Report for Northern States Power Company, Minneapolis, Minnesota.

Kerlinger, P., R. Curry, and R. Ryder. 2000. Ponnequin Wind Energy Project: Reference site avian study, January 1, 1998 – December 31, 1998. NREL/SR-500-27546, National Renewable Energy Laboratory, Golden, Colorado.

Kerlinger, P., L. Culp, and R. Curry. 2005. Year one report: Post-construction avian monitoring study for the High Winds Wind Power Project Solano County, California. Unpubl. report to High Winds, LLC and FPL Energy.

Nicholson, C. P. 2003. Buffalo Mountain Windfarm bird and bat mortality monitoring report: October, 2001 – September, 2002. Unpubl. report to Tennessee Valley Authority, Knoxville, Tennessee.

[31] Smallwood, K. S. 2009. Mitigation in U.S. Wind Farms. Pages 68-76 in H. Hötker (Ed.), Birds of Prey and Wind Farms: Analysis of problems and possible solutions. Documentation of an International Workshop in Berlin, 21st and 22nd October 2008. Michael-Otto-Instiut im NABU, Goosstroot 1, 24861 Bergenhusen, Germany. http://bergenhusen.nabu.de/forschung/greifvoegel/

[32] Smallwood, K. S. 2007. Estimating wind turbine-caused bird mortality. Journal of Wildlife Management 71:2781-2791.

COMMENT LETTER 182

REEVES, KAHN & HENNESSY
ATTORNEYS AT LAW

[redacted]

[redacted]

H. PHILIP EDER (1927-2004)
TIFFANY A. ELKINS
PEGGY HENNESSY*
GARY K. KAHN*
JARED B. KAHN
MARTIN W. REEVES*

*Also Admitted in Washington

TESTIMONY OF GARY K. KAHN
FRIENDS OF THE COLUMBIA GORGE
MAY 7, 2009

My name is Gary Kahn and I am an attorney representing Friends of the Columbia Gorge. Friends is a non-profit organization with approximately 5,000 members dedicated to protecting and enhancing the resources of the Columbia River Gorge. Friends' membership includes hundreds of citizens who reside within the Columbia River Gorge National Scenic Area. Friends supports renewable energy development, so long as projects are responsibly sited and comply with all applicable laws.

Friends of the Columbia Gorge opposes the Whistling Ridge Energy project as it is currently proposed. S.D.S. Co., LLC must modify its application to better address the applicable review criteria, to remove all portions of the project from the National Scenic Area, and to substantially reduce the impacts of the project on scenic, natural, and recreational resources.

As for consistency with land use laws, the application contains a fatal flaw: part of the project would be located within the National Scenic Area. The entire project is classified as an industrial use under the Scenic Area rules because it would be primarily involved in the production of electric power for commercial purposes.[1] Industrial uses are prohibited within the General Management Area of the Scenic Area.[2] Despite this prohibition, SDS proposes to construct and use more than two miles of roads within the General Management Area for industrial purposes.[3]

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[1] SCC § 22.04.010(88)(d) (definition of "industrial use.")

[2] SCC § 22.10.020(A); 16 U.S.C. § 544d(d)(6).

[3] Application at Fig. 2.3-1.

In both the National Scenic Area and in Skamania County generally, both the construction and uses of roads must be reviewed. Attached as Exhibit A is a 2002 letter from the Columbia River Gorge Commission discussing the requirement to review roads in the National Scenic Area for their intended uses. A recent federal court decision, *Friends of the Columbia Gorge v. United States Forest Service*,[4] discusses the same requirement.[5] A copy of that decision is attached as Exhibit B.

Similar to the Scenic Area requirement, Skamania County requires its private roads to be classified "based on their primary functions."[6] The County road system has several different classification categories, ranging from private driveways to commercial development to recreational use.[7] Proposals to change roads from one category to another, such as residential to commercial use, trigger review.[8]

In the instant matter, the roads proposed within the Scenic Area are proposed specifically for industrial purposes. The applicant proposes to construct new roads and to widen and improve existing public and private roads, converting them to new uses.[9] These roads would be used to haul wind energy turbine components and construction materials—industrial loads that would exceed the WSDOT legal load limit of 52.75 tons.[10] This is an industrial activity.

In summary, the proposed road construction and use within the General Management Area are part of the proposed industrial project and are prohibited. SDS must modify the proposal to remove all project components from the GMA.

---

[4] 546 F. Supp. 2d 1088 (2008).

[5] *Id.* at 1113 ("Because the road had not been used in at least one year *for log hauling*, the use of the road *for logging purposes* is a 'discontinued use.'") (emphasis added).

[6] SCC § 12.03.030

[7] *Id.*

[8] SCC § 12.03.070.

[9] Application at §§ 2.20.4.8, 2.20.4.9.

[10] Application at 4.3-37.

COMMENT LETTER 183

State of Washington
Department of Fish and Wildlife
Habitat Program - Major Projects Division - Wind and Water Energy Section

Mailing Address: 2620 North Commercial Avenue (509) 543- 3319
Main Office Location: 2620 North Commercial Avenue – Pasco, WA 99301

MWR-11-10

August 27th, 2010

Stephan Posner
EFSEC
905 Plum Street SE
Olympia, Washington 98504-3172
efsec@commerce.wa.gov

SUBJECT: Whistling Ridge Energy Project Draft Environmental Impact Statement: EFSEC Application 2009-01

Dear Mr. Posner,

The Washington Department of Fish and Wildlife (WDFW) has reviewed the above-referenced documents and offers the following comments at this time. Other comments may be offered as the project progresses.

WDFW is continuing to carefully considered the potential impacts to natural resources on the site. A statement from the *Bat Acoustic Studies for the Whistling Ridge Wind Resource Area Skamania County, Washington June 4th – October 25th, 2009* (WEST, Inc., 2009) captures our approach to evaluating the entire project:

> "However, no data on bat mortality levels associated with wind energy developments in western coniferous forests are available to help predict risk to bats at the WRWRA. Bat fatality patterns may differ from those in open habitats as well as in eastern deciduous forests…"

We feel that this statement can be extended to address the potential impacts to avian species as well, since, and reiterating from our May 14, 2009 response to the project, …

> *"…other new wind projects in the Pacific Northwest are in shrub-steppe and agricultural habitats; not coniferous forest…"*

Additionally, the data illustrated in figures 7 and 8 on pages 57 and 58 in Appendix C, Final Wildlife Report are confusing in that the coniferous-forested Whistling Ridge site is compared to other U.S. wind energy facilities regardless of habitat types. This same type of comparison is also shown for All Birds in figure 9 on page 59. Again, regardless of habitat type.

Raptor migration routes along the east Cascades are documented at the Bonney Butte, Oregon, *Hawk Watch* raptor banding and counting stations. The *Final Report* compared the Whistling Ridge project to other wind energy project through such statements as:

> *"The annual rate was low relative to raptor use at 36 other wind-energy facilities that implemented similar protocols to the present study and had data for three or four different seasons."*
>
> *"A 90% prediction interval around this estimate is zero to 0.25 fatalities per megawatt per year."*

WDFW would like to emphasize that fluctuations in raptor populations, as well as other avian species, may result in greater mortality than what is predicted in the *Final Report*. As a result, operational controls may be necessary to address avian mortality that exceeds predicted mortality.

Specifically, WDFW recommends that operational controls be a condition of the site certification, if issued, so that individual turbines or strings of turbines can be shutdown as a result of individual species and cumulative avian and bat fatalities in excess of the predicted mortality.

In closing, WDFW would like to acknowledge that the applicant has submitted a preliminary mitigation plan that we are currently reviewing. The preliminary mitigation plan encompasses approximately 100 acres in Klickitat County 12 miles due east of the project site. The mitigation site is forested with Oregon White Oak with some Douglas fir and Ponderosa pine and shares a portion of its northern boundary with 40 acres of WDNR land and. This mitigation site provides habitat for several PHS entries including Western gray squirrels. Additionally, the site includes the fish-bearing Silva Creek, a tributary to the Klickitat River.

We look forward to working with all interested parties as this project moves forward.

Sincerely,

Michael Ritter

Wind Mitigation Biologist

WR - DEIS
Late Public Comment #541

Michelle, Kayce (UTC)

From: Posner, Stephen (UTC)
Sent: Monday, August 30, 2010 7:32 AM
To: Michelle, Kayce (UTC)
Cc: Talburt, Tammy (UTC)
Subject: FW: WR DEIS Public Comment Extenstion
Attachments: MWR-11-10.doc

Please process as appropriate. Thanks.

Stephen Posner
Energy Facility Site Evaluation Council
P.O. Box 43172
Olympia, WA 98504-3172
(360) 956-2063
stephen.posner@utc.wa.gov

visit the EFSEC website at: www.efsec.wa.gov

From: Nelson, Travis W (DFW)
Sent: Friday, August 27, 2010 5:07 PM
To: Posner, Stephen (UTC)
Subject: FW: WR DEIS Public Comment Extenstion

From: Nelson, Travis W (DFW)
Sent: Fri 8/27/2010 5:03 PM
To: Posner, Stephen (COM)
Cc: Ritter, Michael W (DFW)
Subject: RE: WR DEIS Public Comment Extenstion

Stephan,

Please see attached comments for the Whistling Ridge Wind Proposal.

Travis Nelson
WDFW - Renewable Energy Policy
360.902.2390
Travis.Nelson@dfw.wa.gov

State of Washington
Department of Fish and Wildlife
Habitat Program - Major Projects Division - Wind and Water Energy Section

Mailing Address: 2620 North Commercial Avenue (509) 543- 3319
Main Office Location: 2620 North Commercial Avenue – Pasco, WA 99301

MWR-11-10

August 27th, 2010

Stephan Posner
EFSEC
905 Plum Street SE
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efsec@commerce.wa.gov

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We look forward to working with all interested parties as this project moves forward.

Sincerely,

Michael Ritter

Michael Ritter

Wind Mitigation Biologist

COMMENT LETTER 184

Montano,Andrew M - KEC-4

From: Rick Aramburu [redacted]
Sent: Monday, July 19, 2010 5:33 PM
To: Montano,Andrew M - KEC-4; Stephen Posner
Subject: Whistling Ridge: Communications concerning DEIS

Dear Mr. Montano and Mr. Posner:

As you know, this office represents Save Our Scenic Area (SOSA) with regard to the application of Whistling Ridge Energy to construction several wind turbines near Underwood Mountain in Skamania County. As part of the environmental review for this project, a DEIS has been prepared with comments due on August 27, 2010. SOSA intends to comment on the DEIS.

While we understand that the DEIS is being prepared by EFSEC and BPA, we have concerns as to the degree of input into the document that has been received from the applicant WRE. In the recent submission from WRE they indicate that they have participated in meetings with staff and Council consultants regarding the DEIS. Accordingly, we request that you provide us with any and all correspondence, emails, notes, memoranda or other communications concerning the DEIS between EFSEC, BPA or their DEIS consultants and any persons affiliated with the applicant WRE or WRE's attorneys.

We will be happy to review these documents at Council offices in Olympia. We would like to conduct this review as soon as possible to be able to use the information gathered in making SOSA's comment on the DEIS.

Thank you for your assistance in this matter.

J. RICHARD ARAMBURU

[redacted]

Montano,Andrew M - KEC-4

From: Rick Aramburu [redacted]
Sent: Monday, July 19, 2010 5:33 PM
To: Montano,Andrew M - KEC-4; Stephen Posner
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Thank you for your assistance in this matter.

J. RICHARD ARAMBURU

[redacted]

COMMENT LETTER 185

Don C. Brunell
[redacted]

RECEIVED
AUG 27 2010
ENVIRONMENT
FISH & WILDLIFE

August 17, 2010

Stephen Posner
Compliance Manager
State of Washington
Energy Facility Site Evaluation Council
905 Plum Street SE, 3rd Floor
Olympia, WA 98504-3172

Andrew M. Montaño
Environmental Project Manager
Bonneville Power Administration
Public Affairs Office – DKE-7
PO Box 14428
Portland, OR 97293-4428

SUBJECT: Whistling Ridge Energy Project

Dear Mr. Posner and Mr. Montaño:

As a resident of Clark County and as one who has been involved in the decisions regarding the Columbia River Gorge since before and after the Columbia River Gorge National Scenic Areas was established, I have a deep appreciation for the Gorge and a deep awareness of what it takes to operate a successful business in the Scenic Area and in the Pacific Northwest. My family and I enjoy visiting the Gorge frequently from our Vancouver home, and we are not interested in seeing the character of the Gorge destroyed or significantly altered.

Currently, I am president of the Association of Washington Business (AWB), but I am commenting on behalf of myself. AWB is Washington's state chamber of commerce and manufacturing and technology association. Our 7,000 members employ more than 650,000 workers in our state's private sector.

Prior to joining AWB in 1986, I was Washington public affairs manager for Crown Zellerbach Corp. (CZ). At the time, CZ owned and operated the Camas pulp and paper operation just to the west of the Scenic Area boundary and owned thousands of acres of commercial timberlands inside and adjacent to the Scenic Area on both sides of the Columbia River.

I was involved in the negotiations with the state of Washington to exchange our Gorge lands with the state of Washington for state timber sale contract relief in 1982, 1983 and 1984. In that process, I learned a great deal about the forest land potential, the forest practices and view corridor considerations and alterations, the productivity of the timberlands, and the people and companies inside and adjacent to the Scenic area who are dependent upon the industry and businesses. I also came to learn that some of our forested sites along the ridge lines had higher potential for other uses such as a wind farm, although generating electricity from the wind was in its development stages.

While CZ believed that we could manage those lands and our Camas operations so as to protect the unique features of the Gorge inside and around the Scenic Area, we also worked with those who wrote the legislation establishing the Scenic Area to protect the commercial activities within and around the Gorge. We recognized this would be an ongoing challenge, but we also realized that many of our employees and their families lived in and around the Scenic Area, had jobs and livelihood which depended upon commercial activity. Therefore, it was important to maintain and preserve the

commercial viability of private and public lands and the industries and businesses within and adjacent to the Scenic Area.

I sincerely hope that the Council appreciates the unique challenges that the private sector confronts in operating within the Columbia River Gorge National Scenic Area. We fully understand the concerns of those who provide private sector jobs and generate the tax revenues for local governments and schools with and around the Scenic Area should be paramount. So, that is why I agree that SDS Lumber, a long-held family-owned business, should be allowed to move forward with its Whistling Ridge Energy Project. Further, it seems to me that it makes sense for the State of Washington to lease the adjacent ridgeline so as to extent the wind farm and allow our state, which is severely financially strapped, to earn income from the public lands for schools, colleges and universities and rural counties such as Skamania.

Those of us in Clark County are aware of the onerous requirements imposed by the Act. While much of Clark and Multnomah counties only have a peripheral stake in the Gorge, 6% of Skamania's land mass is privately held, and much of that falls within the Scenic Area. The point is when opportunities arise to enhance the economy in Skamania County, add much needed renewable electricity to the grid, and provide new family-wage jobs; we should not pass that opportunity up.

We are also keenly aware that the last monthly adjusted unemployment figure released for the Portland-Vancouver metro area was 13.3%. Rural counties are also feeling the bite of high unemployment and the Whistling Ridge Energy Project not only brings construction jobs in these recessionary times but ongoing employment maintaining the turbines and transmission system.

Council members should, if they are not already, be aware of the history behind the Act and what is becoming a remarkable and implicit disregard for the takings of property rights that the Act seems to have spawned. The bitterness which has developed since passage of the Act is troubling especially for the communities in the Scenic Area. That bitterness is regrettable and is growing. It remains because advocacy groups campaign constantly for expansion of restrictions within and extensions beyond the defined CRGNSA boundary.

The Energy Facility Site Evaluation Council has already heard considerable testimony along these lines; testimony that bears no repeating here. My point is simply that none of what has been entered into the record is supported by the legislative intent of the Act's authors, or in the language of the Act as written. The proposition that whatever can be seen from within the Scenic Area should be treated as if it were within its boundary is ludicrous. It is also outrageous. I can tell you personally that when the law was written that was never the intent.

This is outrageous because a reduction in the capacity of SDS' wind farm will render the entire project untenable. Outrageous because prohibiting SDS from pursuing the highest and best use of its lands in ways fully compatible with timber production, is a blatant property rights taking. Outrageous because Whistling Ridge, with the jobs and tax revenue and local purchases it will engender, is a private economic stimulus for a community that urgently needs one. And finally, asserting a de facto expansion of the Scenic Area boundary is outrageous because it pours salt on the wound of decades of local residents' bitterness toward the original Act despite its clearly limited mandate; there never was, nor should be, a buffer around or extension of the CRGNSA boundary.

Finally, reflecting as I do as a citizen of Washington State, I'm hopeful that the Council will, in its deliberations, take cognizance of existing state policies which promote renewable energy development.

8.14.2010

In other words, I trust that you will reflect in your decision, the policy priorities that the Governor and Legislature not to mention the electorate through I-937 have made law.

The Stevenson family and SDS as a company are good people who work hard and provide jobs and tax revenues. They are the kind of citizens and employers that our state and region needs. They are doing the right thing with Whistling Ridge project putting the land to its highest and best use while provided needed power to our business, hospitals, schools, factories and families.

It is inconceivable to me that a few people, with their own interests in mind, will succeed in stopping a well-designed wind farm project from being built on private land that is located outside the CRGNSA on the grounds that the project defiles the Gorge. Give me a break! It most surely does not, and their claims fail to approach any standard of common sense.

I strongly urge the Council to separate what is true from what is not, from what is self-service from what is in the best interests of the working families in south central Washington and north central Oregon, and that you recommend approval for the Whistling Ridge Energy Project to the governor. We also add that we hope that approval can be expedited.

Thank you for your consideration.

Don C. Brunell

[redacted]

8.14.2010

WRE100175 - Crumpacker/Skamania County AgriToursim Assn

COMMENT LETTER 186

Montano,Andrew M - KEC-4

From: John Crumpacker [redacted]
Sent: Friday, August 27, 2010 4:43 PM
To: efsec@utc.wa.gov; Montano,Andrew M - KEC-4
Cc: 'Mike and Joyce Eastwick'; 'charlie guthrie'
Subject: Scamania County Agri-Tourism Assn. - Written Comments on DEIS
Attachments: Crumpacker Whistling Ridge DEIS Comments-Skamania County Agri-Tourism Assn.pdf

Dear EFSEC and BPA,

Please accept our written comments on the DEIS and make them part of the record in this matter.

Regards,
John Crumpacker
Board of Directors
Skamania County Agri-Toursim Assn.

[redacted]

WHISTLING RIDGE WIND TURBINE DEVELOPMENT

WRITTEN DEIS COMMENTS

AUGUST 26, 2010

Written Comments of the Board of Directors

Skamania County Agri-Tourism Association,

a Washington Non-Profit Corporation

INTRODUCTION

The Skamania County Agri-Tourism Association is a Washington non-profit corporation dedicated to the promotion and improvement of sustainable agri-tourism in Skamania County. Our mission is to create and maintain favorable business conditions for association members. All members own and operate agricultural businesses in Underwood, Washington which is located in eastern Skamania County. Our unincorporated community sits directly across the Columbia from Hood River, Oregon. Members of the Skamania County Agri-Tourism Association include:

Member	Business
Acadia Vineyards	75 acre vineyard & orchard
Crooked Acres Vineyard	20 acre vineyard
The Davis Family Farm	50 acre farm & orchard
Energeia Vineyards	64 acre vineyard
Gorge Crest Vineyards & Winery	41 acre vineyard, winery & commercial event site
Gorge Estate Vineyards	95 acre vineyard & winery
Lamonti Vineyards	32 acre vineyard
Pearblossom Vineyards	18 acre vineyard & orchard
Sanctuary Herb Farm	18 acre herb farm and vineyard
Soluna Vineyards	34 acre vineyard
Underwood Gardens	6 acre lavender farm
Wine Spring	40 acre vineyard

As a group, these farms, vineyards and wineries currently give thousands of people each year a reason to visit our community and share in the awe inspiring beauty and bucolic charm. Some bring the entire family and 50 of their closest friends to say “I do”; some come to taste wine and touch grapes on the vine; some come to buy an organic free-range pig for a celebration; and others simply come because the views of the river, the Gorge, and the Hood River Valley

are unsurpassed. But more importantly for the purposes of this hearing, each of these people brings with them a domino effect of economic activity that benefits our entire region.

The Agri-Tourism Association hereby provides the Council and BPA (collectively referred to as "Council" herein) with our comments on the Whistling Ridge DEIS and the potential impact on our members and on agri-tourism in Underwood as a whole if the deficiencies in the DEIS are not corrected. We respectfully request that the DEIS and the Final EIS include consideration of the following alternatives which are absent or rejected in the DEIS:

1. Resiting of the seven most southerly "A Towers" (A1-A7) to a location within the proposed site that mitigates negative impacts;
2. Use of towers across the project with greater megawatt per tower ratings that will allow for the elimination of Towers A1-A7 with minimal impact on the proponents total megawatt output target of 75 MW;
3. Use of low profile towers across the project, and in particular at tower locations A1-7 to minimize negative impacts;
4. Elimination of towers A1-A7 through micro-siting across the project as a whole; and
5. Elimination of towers A1-A7 to mitigate negative impacts.

Such alternatives should be considered in the DEIS and the Final EIS to mitigate negative impacts based on the following five facts:

1. That tourism is the life blood of Skamania County and all communities throughout the Columbia River Gorge;
2. That Agri-Tourism is the present day driver of tourism in the famous Hood River Valley and that Underwood is well on its way to duplicating that economic success in Eastern Skamania County;
3. That Underwood's historic transformation from pear orchards to Agri-Tourism and to one of the premier wine producing regions in the world has enormous present-day socio-economic value;

4. That the very real present-day economic value of Underwood Agri-Tourism, as well as its future potential, would be severely impacted by the seven "A Towers" as currently sited; and finally
5. That this Council has the authority and responsibility to put the reins on this project by requiring the responsible re-siting or elimination of the seven "A Towers"; towers that will otherwise dominate the skyline and become Underwood's new "calling card."

As we detail in our written comments, failure to re-site the seven "A Towers" would improperly force the blossoming Underwood Agri-Tourism industry to bear a disproportionate share of the negative environmental and socioeconomic impacts of this project in violation of WAC 463-60-085. Such a result is prohibited by WAC 463-47-110 which states that "[t]he overriding policy of the council is to avoid or mitigate adverse environmental impacts which may result from the council's decisions."

TOURISM IS THE LIFE BLOOD OF THE GORGE

Facts

Skamania County is more dependent on tourism than any county in the State of Washington. (See Appendix 1). In 2007:

- 47% of all retail and lodging tax collections in the county came from visitors.
    - The highest percentage in the state.
- Almost 11% of all spending in Skamania County was travel related. Over 58 million dollars.
    - The highest percentage in the state.

Where do these figures come from? In December of 2008, the State of Washington, through the Department of Community Trade and Economic Development, which also employs the staff of this Council, released these findings in a report on the importance of Travel Impacts to the economy of this state.

The state concluded that the travel industry:

- Generates tax benefits for Washington residents.
- Generates job opportunities for Washington residents.
- And benefits all regions of the state.

This study found in particular that rural counties, including Skamania County, have a greater number of travel-generated jobs in relation to total employment. And that we are more dependent on the travel industry. They determined that over 10% of Skamania County's jobs are generated by tourism. Maybe this is no great surprise since we live in one of the most beautiful places on earth.

The State of Washington also released a report in 2002 titled "Travel Industry Employment." (See Appendix 1 to our DEIS Scoping Comments. All other references to appendices in these comments refer to the appendices attached to our Scoping Comments.). It was released by the Washington Department of Business & Tourism Development. They reached the same conclusions and found specifically that "[t]his is because some rural areas are recreation destinations and/or have little employment in manufacturing or other industries…." Once again topping the list are counties in the Columbia River Gorge.

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- "[H]igh-quality, natural, and outdoor recreation resources" are an example of such an advantage.

Why does this all matter in the DEIS? Because any development proposal that has the potential to cut off the life blood of our economy needs to be closely monitored, carefully studied, and mitigated in a manner that eliminates damaging impacts.

AGRI-TOURISM DRIVES HOOD RIVER AND EASTERN SKAMANIA COUNTY

Facts

Hood River is a tourist mecca just like Skamania County. The Hood River Valley is famous worldwide for the breathtaking beauty of its farms, orchards and vineyards. In fact, Hood River is a case study in the economic power and sustainability of agri-tourism. You need look no further that the front page of the Hood River County Chamber of Commerce website. (See Appendix 2). The image of Hood River **IS** agri-tourism. It is plastered everywhere: pictures, events, festivals and links to other sites dedicated to agri-tourism in its many forms.

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in the Gorge. Winery of the Year in 2007 was Cathedral Ridge Winery in Hood River, also located directly across the river from Underwood, and often touting Underwood wines. (See Appendix 3).

Even more to the point, Celilo Vineyards in Underwood, is consistently ranked as one of the Top 10 vineyards in Washington, which as mentioned, is ranked second nationally in the production of premium wines. The entire south slope of Underwood Mountain is considered the cream of the crop. If any question remains regarding the value of the wine industry in Underwood, we need look no further than the seal of approval of SDS Lumber who recently informed the community that it has purchased potential vineyard land in Underwood.

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MOVING THE "A TOWERS" MITIGATES TOURISM IMPACTS

Facts

The seven "A Towers" sit alone on a clear-cut ridge at the very most southern portion of the proposed project. If installed they would dominate views, day and night, from far more locations than are depicted in the application submitted to Council. To remove any uncertainty about the visual impacts of the seven A Towers, the Agri-Tourism Association hired a pilot to fly a photographer along the ridge where these towers are proposed. In Appendix 7 to our comments, you will find the results. Take note of the photograph that was taken directly over the ridge at an elevation of 300 feet above the ridge. This photograph tells the story of who will see the seven A Towers. Also note that the photograph was taken 120 feet below the top of the proposed towers.

Then take note of the next photograph that shows the locations of existing businesses along the Underwood Agri-Tourism Loop. The impacts are clear. The solution is also clear. The re-siting of the seven A Towers eliminates all visual impacts to the Underwood Agri-Tourism industry, as well as the visual impacts to a vast area throughout the Gorge.

CONCLUSION

We are very thankful that the Council brings to this process a broad perspective of the benefits and impacts of wind development. A perspective that is understandably missing from a county government in financial crisis.

We are also confident that this council will use its broad mitigation powers, its depth of experience and basic common sense to draw a line in the sand. A line that will make it clear to people throughout the country that in the Northwest, turbines don't have a right to dominate every ridgeline just because the wind blows.

We feel fortunate. Fortunate that each of you has visited the Gorge, and fortunate that during your site visit, you were able to experience the extraordinary beauty of our agricultural community and understand why it is a priceless resource in and of itself…not just to those of us who live Underwood, but to people throughout the Gorge who benefit economically from its snowballing reputation as one of the premier wine producing destinations in the United States.

For the reasons set forth above, we respectfully request that the DEIS and the Final EIS include consideration of the following alternatives which are absent or rejected in the DEIS:

1. Resiting of the seven most southerly "A Towers" (A1-A7) to a location within the proposed site that mitigates negative impacts;
2. Use of towers across the project with greater megawatt per tower ratings that will allow for the elimination of Towers A1-A7 with minimal impact on the proponents total megawatt output target of 75 MW;
3. Use of low profile towers across the project, and in particular at tower locations A1-7 to minimize negative impacts;
4. Elimination of towers A1-A7 through micro-siting across the project as a whole; and
5. Elimination of towers A1-A7 to mitigate negative impacts.

***

We also direct Council to our comments on the land use consistency issues which are attached hereto and incorporated herein by this reference.

WHISTLING RIDGE WIND TURBINE DEVELOPMENT

LAND USE CONSISTENCY HEARING

May 7, 2009

Written Comments of the Board of Directors

Skamania County Agri-Tourism Association,

a Washington Non-Profit Corporation

INTRODUCTION

My name is John Crumpacker; I live in Underwood, Washington. I am a member of the Board of Directors of the Skamania County Agri-Tourism Association. The Skamania County Agri-Tourism Association is a Washington non-profit corporation dedicated to the promotion and improvement of sustainable agri-tourism in Skamania County. Our mission is to create and maintain favorable business conditions for association members. All members own and operate agricultural businesses in Underwood, Washington which is located in eastern Skamania County. Members of the Skamania County Agri-Tourism Association include:

Member	Business
Acadia Vineyards	75 acre vineyard & orchard
Crooked Acres Vineyard	20 acre vineyard
The Davis Family Farm	50 acre farm & orchard
Energeia Vineyards	64 acre vineyard
Gorge Crest Vineyards & Winery	41 acre vineyard, winery & commercial event site
Gorge Estate Vineyards	95 acre vineyard & winery
Lamonti Vineyards	32 acre vineyard
Pearblossom Vineyards	18 acre vineyard & orchard
Sanctuary Herb Farm	18 acre herb farm and vineyard
Soluna Vineyards	34 acre vineyard
Underwood Gardens	6 acre lavender farm
Wine Spring	40 acre vineyard

The Agri-Tourism Association is here today to provide the Council with our comments on the Land Use Consistency issues posed by the proposed Whistling Ridge project and the potential impact on our members. Today we will again confine our comments to the seven "A Towers." We will address two issues: (1) Why the proposed "A Towers" are inconsistent with the county land use policy; and (2) Why simply moving them prevents these violations.

THE SEVEN "A TOWERS" ARE INCONSISTENT WITH CURRENT ZONING AND EXISTING USES

In the land use portion of its application, SDS suggests that this project will diversify the use of its land and, in turn, the county's economy. Next they state that this "natural resource-based land use would better insulate the Applicant from economic cycles that have undermined similar timber operations…." What they don't mention is that the "A Towers" would sit on land that is specifically set aside for just the opposite purpose: to protect and insulate existing uses such as the agricultural operations of the members of the Skamania County Agri-Tourism Association. Operations which continue to diversify the county's tourism based economy, and barring the "A Towers," are not at risk of economic failure.

We will discuss applicant's claims in the order they are presented in Part 4.2 of the application which addresses weather the "A Towers" would comply with the controlling conditional use requirements.

The first requirement is that the seven "A Towers"

> *Be either compatible with other uses in the surrounding area or is no more incompatible than are other outright permitted uses in the applicable zoning district.*

The applicant, and for that matter, the county, never took the time to study the socio-economic value of agri-tourism and why the A Towers are incompatible with such outright permitted uses. Our appendix of data establishes complete incompatibility and is based on research conducted by the U.S. government, the State of Washington, and the State of Oregon. This is not a wheat field surrounded by nothing. The A Towers would loom over one of the country's premier winemaking regions and the most valuable agri-tourism land in Skamania County.

To claim that these towers are "no more incompatible with the surrounding area than other uses permitted in the County's zoning code," is uninformed. To say that this "project would in no way impair the use of any of the surrounding lands" conveniently ignores the years of work and the capital invested by members of the Agri-Tourism Association, not to mention the high regulatory hurdles we have so painstakingly cleared. The fact is that nowhere in this state have 420 foot turbines been approved as permanent fixtures on a ridge with such profound compatibility concerns.

The next requirement is that the project

> *Not materially endanger the health, safety, and welfare of the surrounding community to an extent greater than that associated with other permitted uses in the applicable zoning district.*

The seven "A Towers" are the single greatest threat to the economic welfare of the Agri-Tourism community in Underwood. Our comments yesterday address this issue and no more needs to be said today.

Next, the project may

> *Not hinder or discourage the development of permitted uses on neighboring properties in the applicable zoning district as a result of the location, size or height of the buildings, structures, walls, or required fences or screening vegetation to a greater extent than other permitted uses in the applicable zoning district;*

The application states that the "turbines in the corridor proposed in the For/Ag-20 zones would be approximately 426 feet tall" and that "the proposed turbines would be taller than other structures permitted outright in the For/Ag-20 zone." The application claims that their height and visibility would not hinder or discourage the development of any of the uses identified in Table 4.2-2. Just the opposite is true. Commercial agriculture, a permitted use in Table 4.2-2 is the very basis of agri-tourism, which as proven in Hood River, can drive the economy of an entire county. And as established in the data we submitted yesterday, the seven "A Towers" are incompatible with agri-tourism and have therefore caused a number of wineries to table development plans.

This council deserves better than applicant's bare claim that "the project would in no way hinder the use or development of surrounding properties."

MOVING THE "A TOWERS" ELIMINATES THE VIOLATION OF THE COUNTY'S ZONING POLICY

The last of the conditional use requirements for the "A Towers" leads us to the policies behind our county's land use law. It requires that this project:

Not be in conflict with the goals and policies expressed in the current version of the County's comprehensive plan.

The policies behind the For/Ag-20 zone more clearly explains why the "A Towers" don't belong. The county policy for the Resource Production Zone is:

> *To provide land for present and future commercial farm and forest operations in areas that have been and are currently suitable for such operations, and to prevent conflicts between forestry and farm practices and nonresource production uses by not allowing inappropriate development of land within this zone classification" (SCC 21.56.010[A]).*

(Emphasis added.) This is a clear statement that the conflict the "A Towers" create should not be allowed.

This same conclusion must be reached by applying the County's own vision statement for our community which states that:

> Skamania County is strongly committed to protecting our rural character and natural resource based industries while allowing for planned future development that is balanced with the protection of critical resources and ecologically sensitive areas, while preserving the community's high quality of life.

(Emphasis added.)

CONCLUDING REMARKS

As the Council may have gathered, the "A Towers" are very different than the rest of this project. And they deserve to be treated differently.

These comments, and the supporting data, will be submitted to Council and posted on the "News" page of the Skamania County Agri-Tourism Association web site which is located at www.scaassn.org Thank you.

WR - DEIS
Public Comment #516

Michelle, Kayce (UTC)

From: John Crumpacker [redacted]
Sent: Friday, August 27, 2010 4:43 PM
To: EFSEC (UTC); ammontano@bpa.gov
Cc: 'Mike and Joyce Eastwick'; 'charlie guthrie'
Subject: Scamania County Agri-Tourism Assn. - Written Comments on DEIS
Attachments: Crumpacker Whistling Ridge DEIS Comments-Skamania County Agri-Tourism Assn.pdf

Dear EFSEC and BPA,

Please accept our written comments on the DEIS and make them part of the record in this matter.

Regards,
John Crumpacker
Board of Directors
Skamania County Agri-Toursim Assn.

[redacted]

WHISTLING RIDGE WIND TURBINE DEVELOPMENT

WRITTEN DEIS COMMENTS

AUGUST 26, 2010

Written Comments of the Board of Directors

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As a group, these farms, vineyards and wineries currently give thousands of people each year a reason to visit our community and share in the awe inspiring beauty and bucolic charm. Some bring the entire family and 50 of their closest friends to say "I do"; some come to taste wine and touch grapes on the vine; some come to buy an organic free-range pig for a celebration; and others simply come because the views of the river, the Gorge, and the Hood River Valley

are unsurpassed. But more importantly for the purposes of this hearing, each of these people brings with them a domino effect of economic activity that benefits our entire region.

The Agri-Tourism Association hereby provides the Council and BPA (collectively referred to as "Council" herein) with our comments on the Whistling Ridge DEIS and the potential impact on our members and on agri-tourism in Underwood as a whole if the deficiencies in the DEIS are not corrected. We respectfully request that the DEIS and the Final EIS include consideration of the following alternatives which are absent or rejected in the DEIS:

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5. Elimination of towers A1-A7 to mitigate negative impacts.

Such alternatives should be considered in the DEIS and the Final EIS to mitigate negative impacts based on the following five facts:

1. That tourism is the life blood of Skamania County and all communities throughout the Columbia River Gorge;
2. That Agri-Tourism is the present day driver of tourism in the famous Hood River Valley and that Underwood is well on its way to duplicating that economic success in Eastern Skamania County;
3. That Underwood's historic transformation from pear orchards to Agri-Tourism and to one of the premier wine producing regions in the world has enormous present-day socio-economic value;

4. That the very real present-day economic value of Underwood Agri-Tourism, as well as its future potential, would be severely impacted by the seven "A Towers" as currently sited; and finally
5. That this Council has the authority and responsibility to put the reins on this project by requiring the responsible re-siting or elimination of the seven "A Towers"; towers that will otherwise dominate the skyline and become Underwood's new "calling card."

As we detail in our written comments, failure to re-site the seven "A Towers" would improperly force the blossoming Underwood Agri-Tourism industry to bear a disproportionate share of the negative environmental and socioeconomic impacts of this project in violation of WAC 463-60-085. Such a result is prohibited by WAC 463-47-110 which states that "[t]he overriding policy of the council is to avoid or mitigate adverse environmental impacts which may result from the council's decisions."

TOURISM IS THE LIFE BLOOD OF THE GORGE

Facts

Skamania County is more dependent on tourism than any county in the State of Washington. (See Appendix 1). In 2007:

- 47% of all retail and lodging tax collections in the county came from visitors.
    - The highest percentage in the state.
- Almost 11% of all spending in Skamania County was travel related. Over 58 million dollars.
    - The highest percentage in the state.

Where do these figures come from? In December of 2008, the State of Washington, through the Department of Community Trade and Economic Development, which also employs the staff of this Council, released these findings in a report on the importance of Travel Impacts to the economy of this state.

The state concluded that the travel industry:

- Generates tax benefits for Washington residents.
- Generates job opportunities for Washington residents.
- And benefits all regions of the state.

This study found in particular that rural counties, including Skamania County, have a greater number of travel-generated jobs in relation to total employment. And that we are more dependent on the travel industry. They determined that over 10% of Skamania County's jobs are generated by tourism. Maybe this is no great surprise since we live in one of the most beautiful places on earth.

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The seven "A Towers" sit alone on a clear-cut ridge at the very most southern portion of the proposed project. If installed they would dominate views, day and night, from far more locations than are depicted in the application submitted to Council. To remove any uncertainty about the visual impacts of the seven A Towers, the Agri-Tourism Association hired a pilot to fly a photographer along the ridge where these towers are proposed. In Appendix 7 to our comments, you will find the results. Take note of the photograph that was taken directly over the ridge at an elevation of 300 feet above the ridge. This photograph tells the story of who will see the seven A Towers. Also note that the photograph was taken 120 feet below the top of the proposed towers.

Then take note of the next photograph that shows the locations of existing businesses along the Underwood Agri-Tourism Loop. The impacts are clear. The solution is also clear. The re-siting of the seven A Towers eliminates all visual impacts to the Underwood Agri-Tourism industry, as well as the visual impacts to a vast area throughout the Gorge.

CONCLUSION

We are very thankful that the Council brings to this process a broad perspective of the benefits and impacts of wind development. A perspective that is understandably missing from a county government in financial crisis.

We are also confident that this council will use its broad mitigation powers, its depth of experience and basic common sense to draw a line in the sand. A line that will make it clear to people throughout the country that in the Northwest, turbines don't have a right to dominate every ridgeline just because the wind blows.

We feel fortunate. Fortunate that each of you has visited the Gorge, and fortunate that during your site visit, you were able to experience the extraordinary beauty of our agricultural community and understand why it is a priceless resource in and of itself...not just to those of us who live Underwood, but to people throughout the Gorge who benefit economically from its snowballing reputation as one of the premier wine producing destinations in the United States.

For the reasons set forth above, we respectfully request that the DEIS and the Final EIS include consideration of the following alternatives which are absent or rejected in the DEIS:

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WHISTLING RIDGE WIND TURBINE DEVELOPMENT

LAND USE CONSISTENCY HEARING

May 7, 2009

Written Comments of the Board of Directors

Skamania County Agri-Tourism Association,

a Washington Non-Profit Corporation

INTRODUCTION

My name is John Crumpacker; I live in Underwood, Washington. I am a member of the Board of Directors of the Skamania County Agri-Tourism Association. The Skamania County Agri-Tourism Association is a Washington non-profit corporation dedicated to the promotion and improvement of sustainable agri-tourism in Skamania County. Our mission is to create and maintain favorable business conditions for association members. All members own and operate agricultural businesses in Underwood, Washington which is located in eastern Skamania County. Members of the Skamania County Agri-Tourism Association include:

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THE SEVEN "A TOWERS" ARE INCONSISTENT WITH CURRENT ZONING AND EXISTING USES

In the land use portion of its application, SDS suggests that this project will diversify the use of its land and, in turn, the county's economy. Next they state that this "natural resource-based land use would better insulate the Applicant from economic cycles that have undermined similar timber operations...." What they don't mention is that the "A Towers" would sit on land that is specifically set aside for just the opposite purpose: to protect and insulate existing uses such as the agricultural operations of the members of the Skamania County Agri-Tourism Association. Operations which continue to diversify the county's tourism based economy, and barring the "A Towers," are not at risk of economic failure.

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> *Be either compatible with other uses in the surrounding area or is no more incompatible than are other outright permitted uses in the applicable zoning district.*

The applicant, and for that matter, the county, never took the time to study the socio-economic value of agri-tourism and why the A Towers are incompatible with such outright permitted uses. Our appendix of data establishes complete incompatibility and is based on research conducted by the U.S. government, the State of Washington, and the State of Oregon. This is not a wheat field surrounded by nothing. The A Towers would loom over one of the country's premier winemaking regions and the most valuable agri-tourism land in Skamania County.

To claim that these towers are "no more incompatible with the surrounding area than other uses permitted in the County's zoning code," is uninformed. To say that this "project would in no way impair the use of any of the surrounding lands" conveniently ignores the years of work and the capital invested by members of the Agri-Tourism Association, not to mention the high regulatory hurdles we have so painstakingly cleared. The fact is that nowhere in this state have 420 foot turbines been approved as permanent fixtures on a ridge with such profound compatibility concerns.

The next requirement is that the project

> *Not materially endanger the health, safety, and welfare of the surrounding community to an extent greater than that associated with other permitted uses in the applicable zoning district.*

The seven "A Towers" are the single greatest threat to the economic welfare of the Agri-Tourism community in Underwood. Our comments yesterday address this issue and no more needs to be said today.

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This council deserves better than applicant's bare claim that "the project would in no way hinder the use or development of surrounding properties."

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The last of the conditional use requirements for the "A Towers" leads us to the policies behind our county's land use law. It requires that this project:

Not be in conflict with the goals and policies expressed in the current version of the County's comprehensive plan.

The policies behind the For/Ag-20 zone more clearly explains why the "A Towers" don't belong. The county policy for the Resource Production Zone is:

> *To provide land for present and future commercial farm and forest operations in areas that have been and are currently suitable for such operations, and to prevent conflicts between forestry and farm practices and nonresource production uses by not allowing inappropriate development of land within this zone classification" (SCC 21.56.010[A]).*

(Emphasis added.) This is a clear statement that the conflict the "A Towers" create should not be allowed.

This same conclusion must be reached by applying the County's own vision statement for our community which states that:

> Skamania County is strongly committed to protecting our rural character and natural resource based industries while allowing for planned future development that is balanced with the protection of critical resources and ecologically sensitive areas, while preserving the community's high quality of life.

(Emphasis added.)

CONCLUDING REMARKS

As the Council may have gathered, the "A Towers" are very different than the rest of this project. And they deserve to be treated differently.

These comments, and the supporting data, will be submitted to Council and posted on the "News" page of the Skamania County Agri-Tourism Association web site which is located at www.scaassn.org Thank you.

WRE100175 - Crumpacker/Skamania County AgriToursim Assn

Montano,Andrew M - KEC-4

From: John Crumpacker [redacted]
Sent: Friday, August 27, 2010 4:43 PM
To: efsec@utc.wa.gov; Montano,Andrew M - KEC-4
Cc: 'Mike and Joyce Eastwick'; 'charlie guthrie'
Subject: Scamania County Agri-Tourism Assn. - Written Comments on DEIS
Attachments: Crumpacker Whistling Ridge DEIS Comments-Skamania County Agri-Tourism Assn.pdf

Dear EFSEC and BPA,

Please accept our written comments on the DEIS and make them part of the record in this matter.

Regards,
John Crumpacker
Board of Directors
Skamania County Agri-Toursim Assn.

[redacted]

WHISTLING RIDGE WIND TURBINE DEVELOPMENT

WRITTEN DEIS COMMENTS

AUGUST 26, 2010

Written Comments of the Board of Directors

Skamania County Agri-Tourism Association,

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INTRODUCTION

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As a group, these farms, vineyards and wineries currently give thousands of people each year a reason to visit our community and share in the awe inspiring beauty and bucolic charm. Some bring the entire family and 50 of their closest friends to say “I do”; some come to taste wine and touch grapes on the vine; some come to buy an organic free-range pig for a celebration; and others simply come because the views of the river, the Gorge, and the Hood River Valley

are unsurpassed. But more importantly for the purposes of this hearing, each of these people brings with them a domino effect of economic activity that benefits our entire region.

The Agri-Tourism Association hereby provides the Council and BPA (collectively referred to as "Council" herein) with our comments on the Whistling Ridge DEIS and the potential impact on our members and on agri-tourism in Underwood as a whole if the deficiencies in the DEIS are not corrected. We respectfully request that the DEIS and the Final EIS include consideration of the following alternatives which are absent or rejected in the DEIS:

1. Resiting of the seven most southerly "A Towers" (A1-A7) to a location within the proposed site that mitigates negative impacts;
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5. Elimination of towers A1-A7 to mitigate negative impacts.

Such alternatives should be considered in the DEIS and the Final EIS to mitigate negative impacts based on the following five facts:

1. That tourism is the life blood of Skamania County and all communities throughout the Columbia River Gorge;
2. That Agri-Tourism is the present day driver of tourism in the famous Hood River Valley and that Underwood is well on its way to duplicating that economic success in Eastern Skamania County;
3. That Underwood's historic transformation from pear orchards to Agri-Tourism and to one of the premier wine producing regions in the world has enormous present-day socio-economic value;

4. That the very real present-day economic value of Underwood Agri-Tourism, as well as its future potential, would be severely impacted by the seven "A Towers" as currently sited; and finally
5. That this Council has the authority and responsibility to put the reins on this project by requiring the responsible re-siting or elimination of the seven "A Towers"; towers that will otherwise dominate the skyline and become Underwood's new "calling card."

As we detail in our written comments, failure to re-site the seven "A Towers" would improperly force the blossoming Underwood Agri-Tourism industry to bear a disproportionate share of the negative environmental and socioeconomic impacts of this project in violation of WAC 463-60-085. Such a result is prohibited by WAC 463-47-110 which states that "[t]he overriding policy of the council is to avoid or mitigate adverse environmental impacts which may result from the council's decisions."

TOURISM IS THE LIFE BLOOD OF THE GORGE

Facts

Skamania County is more dependent on tourism than any county in the State of Washington. (See Appendix 1). In 2007:

- 47% of all retail and lodging tax collections in the county came from visitors.
    - The highest percentage in the state.
- Almost 11% of all spending in Skamania County was travel related. Over 58 million dollars.
    - The highest percentage in the state.

Where do these figures come from? In December of 2008, the State of Washington, through the Department of Community Trade and Economic Development, which also employs the staff of this Council, released these findings in a report on the importance of Travel Impacts to the economy of this state.

The state concluded that the travel industry:

- Generates tax benefits for Washington residents.
- Generates job opportunities for Washington residents.
- And benefits all regions of the state.

This study found in particular that rural counties, including Skamania County, have a greater number of travel-generated jobs in relation to total employment. And that we are more dependent on the travel industry. They determined that over 10% of Skamania County's jobs are generated by tourism. Maybe this is no great surprise since we live in one of the most beautiful places on earth.

The State of Washington also released a report in 2002 titled "Travel Industry Employment." (See Appendix 1 to our DEIS Scoping Comments. All other references to appendices in these comments refer to the appendices attached to our Scoping Comments.). It was released by the Washington Department of Business & Tourism Development. They reached the same conclusions and found specifically that "[t]his is because some rural areas are recreation destinations and/or have little employment in manufacturing or other industries…." Once again topping the list are counties in the Columbia River Gorge.

Two key conclusions of this study:

- The travel industry develops and thrives "to the extent [it] has comparative advantages in the Northwest relative to other locations in the U.S.
- "[H]igh-quality, natural, and outdoor recreation resources" are an example of such an advantage.

Why does this all matter in the DEIS? Because any development proposal that has the potential to cut off the life blood of our economy needs to be closely monitored, carefully studied, and mitigated in a manner that eliminates damaging impacts.

AGRI-TOURISM DRIVES HOOD RIVER AND EASTERN SKAMANIA COUNTY

Facts

Hood River is a tourist mecca just like Skamania County. The Hood River Valley is famous worldwide for the breathtaking beauty of its farms, orchards and vineyards. In fact, Hood River is a case study in the economic power and sustainability of agri-tourism. You need look no further that the front page of the Hood River County Chamber of Commerce website. (See Appendix 2). The image of Hood River **IS** agri-tourism. It is plastered everywhere: pictures, events, festivals and links to other sites dedicated to agri-tourism in its many forms.

The other marketing push in Hood River? Recreation and scenery, of course. Just as the State of Washington has concluded in its studies, "high-quality, natural, and outdoor recreation resources" are our primary asset and must be leveraged. They must also be carefully guarded to assure our economic health and well being.

Why is Hood River important to consider? Because Underwood, which is in Eastern Skamania County, and which is the site of this proposal, sits directly across the Columbia from Hood River and is inextricably tied to Hood River: topographically, economically, and evolutionarily. Although our county seat is 30 miles away in Stevenson, we have a uniquely different set of issues and opportunities. Issues and opportunities that county government has failed to understand. This is evident in light of the county's decision to publically endorse this project without consideration of the impacts to Underwood agri-tourism. Agri-tourism that holds the key to Underwood's economic future… if it is responsibly cared for.

UNDERWOOD AGRI-TOURISM IS GROWING QUICKLY

Facts

The primary driver of agri-tourism in Underwood is its far reaching reputation as one of the premier wine producing regions in the world. (See Appendix 3). Amazing as it may sound, the new Columbia Gorge Wine Appellation was recently recognized as one the best emerging regions in the world along with Paso Robles, California and the Maule Valley in Chile. The same accolades were earned in Seattle Magazine.

In fact the Washington wine industry is now ranked as the second largest premium wine producer in the U.S. Washington Winery of the Year in 2009 was Maryhill Winery, located here

in the Gorge. Winery of the Year in 2007 was Cathedral Ridge Winery in Hood River, also located directly across the river from Underwood, and often touting Underwood wines. (See Appendix 3).

Even more to the point, Celilo Vineyards in Underwood, is consistently ranked as one of the Top 10 vineyards in Washington, which as mentioned, is ranked second nationally in the production of premium wines. The entire south slope of Underwood Mountain is considered the cream of the crop. If any question remains regarding the value of the wine industry in Underwood, we need look no further than the seal of approval of SDS Lumber who recently informed the community that it has purchased potential vineyard land in Underwood.

The DEIS naively accepts the proponents claim that "Wine and Wind" projects are de facto compatible because the uses co-exist in Walla Walla. The problem with this claim is that it ignores the fact that the wind projects in Walla Walla (like State-Line) are many miles from the vineyard and winery sites. The proposed A Towers, on the other hand, directly border the heart of Skamania County agri-tourism. No one argues that they will not dominate the landscape from upper Underwood. Resiting or elimination of Towers A1-7 eliminates all such impacts.

SOCIO-ECOMNOMIC VALUE OF UNDERWOOD AGRI-TOURISM

Facts

Agri-Tourism is a reality in Underwood as we sit here today. There are over 30 large scale agricultural operations within the community. Some of these enterprises were started generations ago, and others have broken ground within the last year. In many ways, the Skamania County Agri-Tourism Association owes its new found status to the proposal before you. We have formally come together for the first time out of necessity. A necessity borne from the threat that this project poses to our very existence.

Although our members have each made extraordinary commitments of time and capital to the common vision of making Underwood the premier agri-tourism destination in the Gorge, until recently, we were working in parallel, rather than in concert. The threat that this project poses to that vision, however, immediately galvanized farm, winery, and vineyard owners across the community. We now stand here with a consensus of opinion, not just on this project, but on future lobbying goals, marketing strategies, and product offerings.

The Association has two primary marketing strategies:

- Promote the "Underwood Agri-Tourism Loop" in a manner similar to the Hood River Fruit Loop.
    - The Hood River Fruit Loop is considered a national model for successful agri-tourism
    - See Appendix 2 (Fruit Loop) and Appendix 4 (Underwood Agri-Tourism Loop)

- Establish the Underwood Vineyard Trek as a "can't be missed" one-of-a-kind opportunity to hike through 12 of the country's premier vineyards while sampling world class wines and views.
    - Nowhere else in the U.S. have 12 contiguous vineyards collectively developed a private trek situated in the heart of a National Scenic Area.
    - See Appendix 4 (Underwood Vineyard Trek)

Underwood Agri-Tourism is not just about wine. Other members offer produce, free-range organic livestock, lavender viewing, and organic herbs. One of the original visionaries in Underwood is Hank Patton, who founded World Steward which is located in the Upper Underwood Agri-Tourism Loop, and is committed to environmental stewardship, sustainable farming, research and education. (See Appendix 4).

In addition, three wineries are already in operation in Underwood. One of those wineries is now considered by many to be the premier commercial events site in the Columbia Gorge. A number of other vineyards located in the Upper Loop have future winery plans which have been put on hold as a result of the potential negative impacts of this proposal.

As set forth in Appendix 4 to our comments, the economic and socioeconomic value of the existing Underwood Agri-Tourism industry is significant and quantifiable. It is diverse and sustainable and benefits citizens and governments throughout the region. The tremendous future potential is also quantifiable and dwarfs the tax benefits of the seven A Towers as projected by SDS Lumber. (See Appendix 1, 2, 3 & 4-Economics of Wine in Underwood).

AGRI-TOURISM & 40 STORY TURBINES DON'T MIX

Facts

SDS once told the Underwood community that wind turbines are "beautiful." We are all welcome to our personal opinions, but in these proceedings facts should rule. And the fact is

that tourists, and especially tourists in the Gorge, don't want to see industrial development. This fact is set forth clearly in studies conducted by the U.S. Government, and the State of Oregon which are attached to our comments as Appendix 5 and Appendix 6. These facts are undisputed and need no further discussion.

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Not be in conflict with the goals and policies expressed in the current version of the County's comprehensive plan.

The policies behind the For/Ag-20 zone more clearly explains why the "A Towers" don't belong. The county policy for the Resource Production Zone is:

> *To provide land for present and future commercial farm and forest operations in areas that have been and are currently suitable for such operations, and to prevent conflicts between forestry and farm practices and nonresource production uses by not allowing inappropriate development of land within this zone classification" (SCC 21.56.010[A]).*

(Emphasis added.) This is a clear statement that the conflict the "A Towers" create should not be allowed.

This same conclusion must be reached by applying the County's own vision statement for our community which states that:

> Skamania County is strongly committed to protecting our rural character and natural resource based industries while allowing for planned future development that is balanced with the protection of critical resources and ecologically sensitive areas, while preserving the community's high quality of life.

(Emphasis added.)

CONCLUDING REMARKS

As the Council may have gathered, the "A Towers" are very different than the rest of this project. And they deserve to be treated differently.

These comments, and the supporting data, will be submitted to Council and posted on the "News" page of the Skamania County Agri-Tourism Association web site which is located at www.scaassn.org Thank you.

COMMENT LETTER 187

Montano,Andrew M - KEC-4

From:	Mendoza, Sonia (ECY) [redacted]
Sent:	Wednesday, August 25, 2010 2:00 PM
To:	Montano,Andrew M - KEC-4; stephen.posner@commerce.wa.gov
Cc:	Chen, Qing (ECY); Cline, Vicki (ECY); Drumright, Mike (ECY); Groven, Connie (ECY); Toteff, Sally (ECY)
Subject:	Ecology SEPA No. 10-2884A "Whistling Ridge project" Comment Letter
Importance:	High
Attachments:	Enclosure.pdf; 10-2884A.pdf

Mr. Montano and Mr. Posner,
Attached is our comments for the Whistling Ridge project (Ecology File Nos. 10-2884A). Comments are due 8/27/10.

Please reply to this message for confirmation. Thank you.

Sonia Mendoza
[redacted]

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

August 25, 2010

Andrew M. Montaño
Environmental Protection Specialist
Bonneville Power Administration
PO Box 3621 KEC-4
Portland, OR 92708-3621

Stephen Posner
Energy Facility Site Manager
Washington EFSEC
905 Plum Street Southeast, Third Floor
Olympia, WA 98504-3172

Dear Mr. Montaño and Mr. Posner :

Thank you for the opportunity to comment on the draft environmental impact statement for the Whistling Ridge project located in Skamania County. The Department of Ecology (Ecology) reviewed the information provided and has the following comment(s):

AIR QUALITY: Qing Chen (360) 407-6809

Best Management Practice for minimization of track out and windblown dust should be required in applicable permitting.

TOXICS CLEANUP: Connie Groven (360) 407-6254

Toxics Cleanup program comments submitted May 12, 2009, still apply to the project described (see enclosure). There are no new comments submitted at this time.

WASTE 2 RESOURCES: Mike Drumright (360) 407-6397

All grading and filling of land must utilize only clean fill, i.e., dirt or gravel. All other materials, including waste concrete and asphalt, are considered to be solid waste and permit approval must be obtained through the local jurisdictional health department prior to filling. Standards apply as defined by Washington Administrative Code (WAC) 173-350-990-Criteria for Inert Waste.

Property owners, developers, and contractors are encouraged to recycle all possible leftover construction, demolition, and land clearing (CDL) materials and reduce waste generated. Recycling construction debris is often less expensive than landfill disposal. Please visit http://1800recycle.wa.gov or call the 1-800-RECYCLE hotline to find facilities that that will accept your CDL materials for reuse or recycling.

WATER RESOURCES: Vicki Cline (360) 407-0278

All water wells shall be constructed in accordance with the provisions of Chapter 173-160 WAC by a driller licensed in the State of Washington. Well reports must be submitted to Ecology within 30 days after completion of a well.

All water wells that may be drilled must be a minimum of 100 feet from any known, suspected, or potential source of contamination. Wells shall not be located within 1,000 feet of a solid waste landfill. WAC 173-160-171(1) The proposed water well shall be located where it is not subject to ponding and is not in the floodway, except as provided in Chapter 86.16 RCW. (2) It shall be protected from a one hundred year flood and from any surface or subsurface drainage capable of impairing the quality of the ground water supply.

The Growth Management Act (Section 63) requires an applicant to submit evidence of an adequate water supply before a building permit can be issued for any building requiring potable water.

Any ground water withdrawals anticipated exceeding 5,000 gallons a day for domestic uses or for commercial/industrial uses require a water right permit. Any modification to existing water rights must be approved by Ecology's Water Resources Program.

Ecology's comments are based upon information provided by the lead agency. As such, they may not constitute an exhaustive list of the various authorizations that must be obtained or legal requirements that must be fulfilled in order to carry out the proposed action.

If you have any questions or would like to respond to these comments, please contact the appropriate reviewing staff listed above.

Department of Ecology
Southwest Regional Office

(SM: 10-2884A)
Enclosure

cc: Qing Chen, AQP
Vicki Cline, WR
Mike Drumright, W2R
Connie Groven, TCP

WR - DEIS
Agency Comment #9

WR - DEIS
Public Comment #386

Michelle, Kayce (UTC)

From: Posner, Stephen (UTC)
Sent: Thursday, August 26, 2010 7:26 AM
To: Michelle, Kayce (UTC)
Cc: Talburt, Tammy (UTC)
Subject: FW: Ecology SEPA No. 10-2884A "Whistling Ridge project" Comment Letter
Attachments: Enclosure.pdf; 10-2884A.pdf

Importance: High

W.R. Dept. of Ecology comment
see Agency Comment #9
in database

Kayce,

Please process. Thanks.

Stephen Posner
Energy Facility Site Evaluation Council
P.O. Box 43172
Olympia, WA 98504-3172
(360) 956-2063
stephen.posner@utc.wa.gov

visit the EFSEC website at: www.efsec.w

From: Posner, Stephen (COM)
Sent: Wednesday, August 25, 2010 2:00 PM
To: Posner, Stephen (UTC)
Subject: FW: Ecology SEPA No. 10-2884A "Whistling Ridge project" Comment Letter
Importance: High

From: Mendoza, Sonia (ECY)
Sent: Wednesday, August 25, 2010 2:00:19 PM
To: ammontano@bpa.gov; Posner, Stephen (COM)
Cc: Chen, Qing (ECY); Cline, Vicki (ECY); Drumright, Mike (ECY); Groven, Connie (ECY); Toteff, Sally (ECY)
Subject: Ecology SEPA No. 10-2884A "Whistling Ridge project" Comment Letter
Importance: High
Auto forwarded by a Rule

Mr. Montano and Mr. Posner,
Attached is our comments for the Whistling Ridge project (Ecology File Nos. 10-2884A). Comments are due 8/27/10.

Please reply to this message for confirmation. Thank you.

Sonia Mendoza
Department of Ecology-SWRO
SEPA Coordinator

[redacted]

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

May 12, 2009

Mr. Allen Fiksdal, EFSEC Manager
Energy Facility Site Evaluation Council
PO Box 43172
Olympia, WA 98504-3172

Dear Mr. Fisksdal:

Thank you for the opportunity to comment on the determination of significance scoping notice for the Whistling Ridge Energy project (Application No. 2009-01) located in Skamania County as proposed by Whistling Ridge Energy LLC. The Department of Ecology (Ecology) reviewed the environmental checklist and has the following comment(s):

SEPA REGIONAL PROJECT LEAD: Sarah Lukas (360) 407-7459

SHORELANDS:
The submitted scoping notice identifies the intent of preparing a floodplain and wetland assessment as part of the analysis used in the draft environmental impact statement (DEIS). The assessment should include: An inventory of all wetlands and areas of floodplain in the project area and within the vicinity of the proposal; the environmental values these aquatic features provide to the landscape; what and how the floodplain areas and wetlands will be impacted by the proposal; what environmental values will be lost from these impacts; and mitigation measures to offset the proposed environmental impacts that cannot be avoided.

The DEIS should also include an analysis of all other surface water bodies in, and within the vicinity of, the project site. An equivalent documentation of existing environmental values, proposed impacts, and proposed mitigation measures to unavoidable impacts should be outlined in the DEIS as requested for the wetlands and floodplain areas above.

TOXICS CLEANUP: Connie Groven (360) 407-6254

If contamination is currently known or suspected during construction, testing of the potentially contaminated media must be conducted. If contamination of soil or groundwater is readily visible, or is revealed by testing, Ecology must be notified. Contact the Environmental Report Tracking System Coordinator at the Southwest Regional Office at (360) 407-6300. For assistance and information about subsequent cleanup and to identify the type of testing that will be required contact Connie Groven with the Toxic Cleanup Program at the Southwest Regional Office at the phone number given above.

WATER QUALITY: Roberta Woods (360) 407-6269

Any discharge of sediment-laden runoff or other pollutants to waters of the state is in violation of Chapter 90.48 RCW, Water Pollution Control, and WAC 173-201A, Water Quality Standards for Surface Waters of the State of Washington, and is subject to enforcement action.

Erosion control measures must be in place prior to any clearing, grading, or construction. These control measures must be effective to prevent stormwater runoff from carrying soil and other

pollutants into surface water or storm drains that lead to waters of the state. Sand, silt, clay particles, and soil will damage aquatic habitat and are considered to be pollutants.

Proper disposal of construction debris must be on land in such a manner that debris cannot enter buffers and waters of the state or cause water quality degradation of state waters.

During construction, all releases of oils, hydraulic fluids, fuels, other petroleum products, paints, solvents, and other deleterious materials must be contained and removed in a manner that will prevent their discharge to waters and soils of the state. The cleanup of spills should take precedence over other work on the site.

Clearing limits and/or any easements or required buffers should be identified and marked in the field, prior to the start of any clearing, grading, or construction. Some suggested methods are staking and flagging or high visibility fencing.

A permanent vegetative cover should be established on denuded areas at final grade if they are not otherwise permanently stabilized.

All temporary erosion control systems should be designed to contain the runoff from the developed two year, 24-hour design storm without eroding.

Coverage under the National Pollution Discharge Elimination System (NPDES) and State Waste Discharge General Permit for Stormwater Discharges Associated with Construction Activities is required for construction sites which disturb an area of one acre or more and which have or will have a discharge of stormwater to surface water or a storm sewer. An application can be downloaded from Ecology's website at http://www.ecy.wa.gov/programs/wq/stormwater/construction/#Application or you can contact Josh Klimek at (360) 407-7451 for an application form. To avoid project delays, we encourage the applicant(s) to submit a completed application form and to publish public notice more than 60 days before the planned start of the project.

Ecology's comments are based upon information provided by the lead agency. As such, they may not constitute an exhaustive list of the various authorizations that must be obtained or legal requirements that must be fulfilled in order to carry out the proposed action.

If you have any questions or would like to respond to these comments, please contact the appropriate reviewing staff listed above.

Department of Ecology
Southwest Regional Office

(SM: 09-2310)

cc: Connie Groven, TCP
Sarah Lukas, SEA
Brett Raunig, VFO/WQ
Joyce Smith, HQ/WQ
Roberta Woods, WQ
Whistling Ridge Energy LLC (Proponent)

STATE OF WASHINGTON
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August 25, 2010

Andrew M. Montaño
Environmental Protection Specialist
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PO Box 3621 KEC-4
Portland, OR 92708-3621

Stephen Posner
Energy Facility Site Manager
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Dear Mr. Montaño and Mr. Posner :

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Department of Ecology
Southwest Regional Office

(SM: 10-2884A)
Enclosure

cc: Qing Chen, AQP
Vicki Cline, WR
Mike Drumright, W2R
Connie Groven, TCP

COMMENT LETTER 188

Montano,Andrew M - KEC-4

From: Allan Dushan [redacted]
Sent: Thursday, August 26, 2010 11:54 AM
To: Montano,Andrew M - KEC-4
Subject: Whistling Ridge Energy Project Draft EIS - Comment on Wind Turbine lighting

SDS Lumber suggested I forward my comment/suggestion about the FAA lighting requirements for the wind turbines to your office.

Thanks for taking my comments below,

Allan Dushan

Comment on:
Whistling Ridge Energy Project Draft EIS

Concerning:
FAA aircraft safety lighting requirements

Viewpoint associated with my full-time year round residents:
Viewpoint 1: Pucker Huddle (Within Scenic Area), 16-25 Turbines visible.

Lighting Suggestion Based On Reference:
The U.S. Department of Transportation FAA Advisory Circular (AC 70/7460-1K)
"Obstruction Marking and Lighting"

Web Link to FAA Advisory Circular (AC 70/7460-1K):
http://www.airweb.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/0/B993DCDFC37FCDOpenDocument

My Lighting Suggestion:
First, I am in favor of the wind turbines.

My suggestions here are to help minimize the visual impact while still adhering to the FAA aircraft safety lighting requirements.

My house was built to take advantage of the view I have of Underwood Mountain, and because of this my Master Bedroom, Living Room, Dining Room and Kitchen windows all face Underwood Mountain.

During the day, the wind turbines for me add to the scenic view, but at night the flashing lights can be extremely distracting, if not configured properly. My reference for the lighting being distracting are the wind turbines outside of Goldendale. When you are driving south on hwy 97 from Goldendale, the flashing lights are surprisingly distracting due to the fact that every wind turbine in the row had a light on it and possibly the speed at which the lights were flashing. This drive south on hwy 97 seemed representable of what the view from my house would be.

My suggestions are based off of what I experienced driving south on hwy 97, and what I believe could reduce the distraction.

The greatest issues were:
1. The number of lights, since every wind turbine appeared to have one.
2. The rate at which they flashed.

3. How they flashed, which was either off or on.

My suggestion would be to:
1. Put lights on the minimum number of towers based on the FAA Advisory Circular (AC 70/7460-1K). For linear turbine configurations, this would be one at each end of the line with no more than 1/2 mile between lights in the line.
Based on this requirement, a possible lighting configuration for Whistling Ridge could be placing lights on: A1,A4,A7,A8,A13,F1,F3,B1,B7,B13,B18,B21,D1,D3,E1,E2,C1,C4,C5,C8.
2. Set the flash Per Minute of the lights to 20 FPM (Flashes Per Minute). This suggestion is based on if the L-864 light is used, which is allowed to flash between 20 and 40 FPM.
3. Have the lights fade off and then fade on, as opposed to being either completely on or completely off. There was nothing in the FAA Advisory Circular (AC 70/7460-1K) that indicated the lights could not fade off then on, as opposed to being on or off when flashing.

That is the extent of my suggestion.

Thanks for extending the comment period.

Allan Dushan

Michelle, Kayce (UTC)

From: Allan Dushan [redacted]
Sent: Thursday, August 26, 2010 8:41 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Energy Project Draft EIS - Comment on Wind Turbine lighting

Comment on:
Whistling Ridge Energy Project Draft EIS

Concerning:
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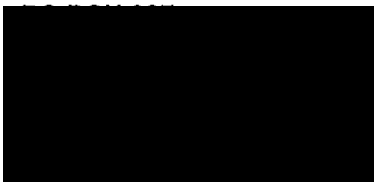

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COMMENT LETTER 189

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

OFFICE OF
ECOSYSTEMS, TRIBAL AND
PUBLIC AFFAIRS

July 16, 2010

RECEIVED
JUL 19 2010
ENVIRONMENT
FISH & WILDLIFE

Andrew M. Montaño
Environmental Project Manager
Bonneville Power Administration - KEC-4
905 NE 11th Avenue
Portland, Oregon 97208-3621

Re: Comments on the draft EIS for the Whistling Ridge Energy Project
EPA Project number 09-018-BPA

Dear Mr. Montaño:

The U.S. Environmental Protection Agency (EPA) has reviewed the Bonneville Power Administration (BPA) Draft Environmental Impact Statement (DEIS) for the proposed Whistling Ridge Energy Project (CEQ# 20100187) in Skamania County, Washington in accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Clean Air Act (CAA) §309. Section 309 of the CAA directs EPA to review and comment in writing on the environmental impacts associated with all major federal actions.

The DEIS analyzes potential environmental impacts of a proposal to interconnect a 75-megawatt (MW) Whistling Ridge Wind Energy project to the Federal Columbia River Transmission System (FCRTS). Because the project would be sited on private land, BPA will decide whether to grant the interconnection request for the project or not. For this decision to be made and the public to understand its implications, BPA developed and analyzed the Proposed and No Action alternatives to evaluate what environmental impacts, if any, would be associated with the proposed action. An authorization to interconnect the project to the FCRTS at a point along BPA's existing North Bonneville-Midway transmission line would require about 4 acres for construction of a substation and up to 1,000 feet long corridor where poles would be placed to support aboveground power lines.

EPA supports development of alternative and environmentally sustainable sources of energy such as wind power. The DEIS for this project includes a good analysis of anticipated environmental impacts from the project and identifies mitigation measures to offset the impacts and monitor effectiveness. Also, the DEIS states that Best Management Practices (BMPs) would be used to minimize any potential impacts. Because wind power technology and configuration of wind turbines in the project area are still relatively new, and their impacts on birds and bats within forested sites remain unclear; effective adaptive management will be important to reduce and mitigate the project impacts.

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The DEIS indicates that water quality may be adversely affected if construction alters the hydrology of springs and surface runoff such that erosion carries sediment to nearby waterbodies. We recommend that this aspect of the project be monitored to assure that water quality is protected. Please also note that antidegradation provisions of the Clean Water Act apply to those waterbodies where water quality standards are currently being met, and prohibit degradation of their water quality. Thus, BPA should coordinate with Washington State Department of Ecology (Ecology) and Tribes affected by the project to assure that the state and tribal water quality standards would be met during implementation of the proposed action. Since the project anticipates obtaining a National Pollutant Discharge Elimination System (NPDES) permit for planned construction activities likely to disturb 1 or more acres, the final EIS should include updated information on such permit application process and conditions to protect water quality.

Based on our review, we have assigned a rating of LO (Lack of Objections) to the DEIS. This rating and a summary of our comments will be published in the Federal Register. A copy of the rating system used in conducting our review is enclosed for your reference.

Thank you for the opportunity to review this DEIS. If you have questions or comments concerning this review, please contact Theo Mbabaliye of my staff at (206) 553-6322 or me at (206) 553-1601.

Sincerely,

Christine B. Reichgott

Christine B. Reichgott, Manager
Environmental Review and Sediment Management Unit

Enclosure

Printed on Recycled Paper

U.S. Environmental Protection Agency Rating System for Draft Environmental Impact Statements Definitions and Follow-Up Action*

Environmental Impact of the Action

LO – Lack of Objections

The U.S. Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC – Environmental Concerns

EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO – Environmental Objections

EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU – Environmentally Unsatisfactory

EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 – Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 – Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 – Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.

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COMMENT LETTER 190

Michelle, Kayce (UTC)

From: Talburt, Tammy (UTC)
Sent: Friday, August 27, 2010 3:47 PM
To: EFSEC (UTC)
Subject: FW: Comments on Whistling Ridge DEIS

Kayce here is another comment.

Tammy

From: Montano,Andrew M - KEC-4 [mailto:[redacted]
Sent: Friday, August 27, 2010 3:41 PM
To: 'Glen Holmberg'
Cc: Posner, Stephen (COM); Talburt, Tammy (UTC)
Subject: RE: Comments on Whistling Ridge DEIS

Your comment has been received. Thank you for your interest in the Whistling Ridge Energy Project.

Updates can be found at www.bpa.gov/go/whistling. I'm CCing the Washington Energy Facility Siting and Evaluation Council as well.

Andrew M. Montaño
Bonneville Power Administration | Environmental Protection Specialist
ammontano@bpa.gov | P: 503. 230. 4145 | F: 503. 230. 5699
Pleasure in the job puts perfection in the work. -Aristotle

From: Glen Holmberg [mailto:[redacted]
Sent: Friday, August 27, 2010 3:36 PM
To: Montano,Andrew M - KEC-4
Subject: Comments on Whistling Ridge DEIS

To: **The Bonneville Power Administration (BPA) and the State of Washington Energy Facility Site Evaluation Council (EFSEC)**
Re: **The Whistling Ridge Energy Project's Draft Environmental Impact Statement (DEIS)**

I am writing to say the conclusions reached by the authors of the DEIS are wrong. It needs to be redone to reflect reality. I oppose the location of this project and think it's a bad idea for the vast majority of people who live in the area.
The DEIS wrongly concludes that visual impacts will be low to moderate. Page 3-171 describes the north facing view from Hood River Hospital, an urban setting in the middle of town, but fails to describe the impact to any of the viewpoints along the waterfront, residences in town

and recreation areas scattered throughout Hood River and The Gorge. These viewpoints are cherished and attract tourists and residents alike to the area. Industrial wind turbines 400' high will have a high impact on the scenic quality of these view sites, not a low impact.

The DEIS also fails to mention the impact on property values in the area. I own a home in Underwood. I would not consider buying there again if large wind turbines are near by. To conclude that wind turbines will promote eco-tourism is wishful thinking at best.
I request that you reject this DEIS and not allow the project to continue in its current form. The impact it will have on tourism and residents will far outweigh any benefits. A handful of jobs created in Skamania County will not offset the long-term losses to economic growth in The Gorge. We already get 49% of our power from renewable energy. There are much better places to put wind turbines than the edge of a national scenic area.
Glen Holmberg
[redacted]

WRE100140 - Holmberg

Montano,Andrew M - KEC-4

From: Glen Holmberg [redacted]]
Sent: Friday, August 27, 2010 3:36 PM
To: Montano,Andrew M - KEC-4
Subject: Comments on Whistling Ridge DEIS

To: **The Bonneville Power Administration (BPA) and the State of Washington Energy Facility Site Evaluation Council (EFSEC)**
<!--[if !supportEmptyParas]--> <!--[endif]-->
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<!--[if !supportEmptyParas]--> <!--[endif]-->
Glen Holmberg
Underwood WA 98651
<!--[if !supportEmptyParas]--> <!--[endif]-->

WRE100140 - Holmberg

Montano,Andrew M - KEC-4

From: Glen Holmberg [redacted]
Sent: Friday, August 27, 2010 3:36 PM
To: Montano,Andrew M - KEC-4
Subject: Comments on Whistling Ridge DEIS

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Glen Holmberg
Underwood WA 98651
<!--[if !supportEmptyParas]--> <!--[endif]-->

COMMENT LETTER 191

From: David McClain [redacted]
Sent: Wednesday, June 16, 2010 9:33 AM
To: Montano,Andrew M - KEC-4
Subject: Whistling Ridge EIS

I am writing to comment on the DEIS and EFSC application for the Whistling Ridge Energy Project, proposed in the Underwood area, along the Skamania and Klickitat county line. I have sent under separate cover my comments to EFSC.

I have extensive background in ecological management and forest ecosystem In the Cascades. I am a member of a US Forest Service advisory committee for ecological restoration of east side ecosystem for the Northern Spotted Owl in Oregon. I was appointed to this Resource Advisory Committee by the Sec. of Agriculture. As such I have been involved in a number of ecosystem reviews and management plans involving areas of similar characteristics as the Whistling Ridge Project.

The proposed project would not have negative impacts to the environment. The project is located on commercial timberland that have been subject to decades of intensive harvesting operations under a sustain yield forestry program regulated by the Washington Department of Natural Resources. I have reviewed the wildlife baseline studies and I have visited the site. There are no significant sensitive wildlife and plant habitat areas associated with this project area. The ecology of this area is typical of a highly altered timber management property. Timber management operations will continue in this area for decades to come which is also evidence that the area is not currently or will it every evolve to a significant ecological resource area. It is a timber management area for industrial forest practices. Siting a wind farm in this area is an intelligent and appropriate compatible land use which will diversity the economic value of these timber lands and help to preserve these lands for timber production for decades to come. There is no evidence that the installation and operations of the proposed facility will have any significant impacts on sensitive or special status animal or plant species. The data and analysis by qualified third parties indicates that no significant impact will occur.

The Whistling Ridge Wind Farm is also outside of the Columbia River Gorge Natural Scenic Area. The Congressional intent of the Gorge Scenic Act was to allow for ongoing economic activity in areas adjacent to the Scenic Area regardless of the affect that these adjacent areas may have on the view from the scenic area. In other words, there was to be no buffer zones to the buffer zone already established by the Gorge Scenic Area boundary. Also I believe that the construction of the Whistling Ridge Wind Farm would not degrade the scenic beauty of the Columbia River Gorge National Scenic Area. As a point of law, EFSEC does not have the authorization to establish new exclusion zones such as buffers to the Gorge Scenic Area without additional authorization from either the legislature or the US Congress. Visual Impact on the Columbia River Gorge National Scenic Area should be an issue of consideration in any Environmental Impact Statement review, but the determination of significance of any impact is not capricious or arbitrary, it must be based on the rules that are in place today. Development outside of and adjacent to the Columbia River Gorge National Scenic Area is allowed under the law and as such visual impacts to the National Scenic Area are allowed because the proposed facility is not located within the Scenic Area.

I support renewable energy. I am the Vice Chairman of the Renewable Northwest Project and support BPA's involvement in developing wind resources. The Whistling Ridge resource will further diversify the BPA portfolio by including wind resources west of the transmission constraint areas. This site has significant positive impacts on the BPA system with regard to availability close to large load centers.

I also supported and participated in the creation of Columbia River Gorge National Scenic Area which is national scenic treasure. The creation of the Scenic Area involved a significant public involvement process that carefully consider the location of the boundary of the Scenic Area. The potential for wind energy development in the Columbia River Gorge area was a consideration when those of us who put pen to paper and drew the boundary participated in the creation of the Scenic Area. This boundary was established to buffer the significant resources of the Scenic Area and the legislation that created the Columbia River Gorge National Scenic Area clearly consider potential affects from development outside of the boundary and determined that such development would not be subject to the Scenic Act. It is not EFSEC's role to substitute its judgment for that of the US Congress on this issue.

BPA and EFSC should approve this project.
Sincerely,
David W. McClain
[redacted]

From: David McClain [redacted]
Sent: Wednesday, June 16, 2010 9:33 AM
To: Montano,Andrew M - KEC-4
Subject: Whistling Ridge EIS

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BPA and EFSC should approve this project.
Sincerely,
David W. McClain
[redacted]

CoverLetter_to_MCEDD_Comments.txt

From: Amanda Hoey [redacted]
Sent: Thursday, August 19, 2010 10:33 AM
To: Montano,Andrew M - KEC-4
Subject: Fwd: Whistling Ridge

Attachments: jason spadaro RE letter 0610.pdf

Attached is Mid-Columbia Economic Development District's letter regarding renewable energy projects. As requested, we are sending this along.

"Mid-Columbia Economic Development (MCEDD) supports the utilization of our renewable energy assets to diversify our economy and stabilize our economic base. We support development of wind, solar, biomass, geothermal, and other renewable energy projects in our region which are designed in a manner consistent with local regulations.

MCEDD has supported the creation of the Columbia Gorge Bi-State Renewable Energy Zone as a means to engage in a cross-jurisdiction, inter-agency, bi-state collaborative approach to renewable energy development. In establishing the Columbia Gorge Bi-State Renewable Energy Zone, we took into consideration a variety of factors, all linked by the regional economy. These include the renewable energy resource itself (wind, solar, hydro, geothermal, biofuels, and biomass), financial investment in those resources by renewable energy industry, existing transportation networks {roads, rail, river and air), high-speed telecommunications networks, education and workforce training capacity, public utilities, resident workforce, transmission capacity, industrial lands base, and quality of life. The economic benefits of renewable energy projects can provide a base for connecting all these components into a networked system that would generate familywage employment in a rural, traditionally depressed economy"

Amanda

--
Amanda Hoey
Executive Director
Mid-Columbia Economic Development District
[redacted]

Mid-Columbia
MCEDD
ECONOMIC DEVELOPMENT DISTRICT

June 14, 2010

Jason Spadaro
[redacted]

Dear Jason,

Mid-Columbia Economic Development (MCEDD) supports the utilization of our renewable energy assets to diversify our economy and stabilize our economic base. We support development of wind, solar, biomass, geothermal, and other renewable energy projects in our region which are designed in a manner consistent with local regulations.

MCEDD has supported the creation of the Columbia Gorge Bi-State Renewable Energy Zone as a means to engage in a cross-jurisdiction, inter-agency, bi-state collaborative approach to renewable energy development. In establishing the Columbia Gorge Bi-State Renewable Energy Zone, we took into consideration a variety of factors, all linked by the regional economy. These include the renewable energy resource itself (wind, solar, hydro, geothermal, biofuels, and biomass), financial investment in those resources by renewable energy industry, existing transportation networks (roads, rail, river and air), high-speed telecommunications networks, education and workforce training capacity, public utilities, resident workforce, transmission capacity, industrial lands base, and quality of life. The economic benefits of renewable energy projects can provide a base for connecting all these components into a networked system that would generate family-wage employment in a rural, traditionally depressed economy.

Sincerely,

Amanda Hoey
Executive Director

[redacted]

COMMENT LETTER 193

From: Greg Neely [redacted]]
Sent: Wednesday, June 16, 2010 2:52 PM
To: Montano,Andrew M - KEC-4
Cc: Greg & Patty Neely
Subject: Whistling Ridge Comment - Meteorological Tower Design

Dear Mr. Andrew M. Montaño - Environmental Project Manager,

Bonneville Power Administration - KEC-4,
P.O. Box 3621, Portland, Oregon, 97208-3621;
direct telephone number 503-230-4145;
toll-free telephone number 1-800-282-3713;
fax number 503-230-5699;
e-mail address: ammontano@bpa.gov.

I have reviewed the following draft EIS and offer the following comment and recommendations. My comments are in blue/red, italic font.

Whistling Ridge Energy Facility Draft Environmental Impact Statement

The DRAFT states on page 1.24 – Mitigation Measures – Biological Resources; "Use of tubular turbine towers, avoiding the lattice type towers which creates areas where birds may congregate and perch thus decreasing the potential for turbine collisions.
• Use of un-guyed meteorological towers, reducing the potential for bird collision with wires".

The DRAFT states on page 2-7 – Proposed Alternatives and Actions; "The **basic design** for the tower would depend on the style selected. Most towers are un-guyed **lattice towers** at heights equal to the hub heights of the proposed wind turbines.

The location for the permanent meteorological tower would be determined during the micrositing process. The selected site would be based on a meteorologist's recommendations for an on-site location that best represents the site's meteorological conditions.

2.1.3.5 Meteorological Tower

Greg Neely Comment – Jun 16, 10:

As the Meteorological Towers will be micro-sited amongst the wind turbines, where bird perching and collisions issues are paramount.

The Meteorological Towers should neither be a basic design nor a lattice design.

The Meteorological Towers should utitilize a Tubular towers; pursuant to the same justification for turbine towers .

Construction of a Tubular Meteorological Tower may require a Custom design, in that the top of the tower would have to be adapted to support the equipment it supports.

-

Greg Neely

[redacted]

-

COMMENT LETTER 194

From: Greg Neely [redacted]
Sent: Wednesday, June 16, 2010 3:01 PM
To: Montano,Andrew M - KEC-4
Cc: Greg & Patty Neely
Subject: Whistling Ridge Comment - Visual Resources

Dear Mr. Andrew M. Montaño - Environmental Project Manager,

Bonneville Power Administration - KEC-4,
P.O. Box 3621, Portland, Oregon, 97208-3621;
direct telephone number 503-230-4145;
toll-free telephone number 1-800-282-3713;
fax number 503-230-5699;
e-mail address: ammontano@bpa.gov

I have reviewed the following draft EIS and offer the following comment and recommendations. My comments are in blue/red, italic font.

Whistling Ridge Energy Facility Draft Environmental Impact Statement

The DRAFT states on page 1-35 – Summary of Unavoidable Adverse Impacts – Table 1-1 – Visual Resources;

"The project would cause some visual impact to surrounding areas where turbines were visible, including some areas inside the Columbia River Gorge National Scenic Area. The visual impact analysis showed that the anticipated level of **visual impact would not be higher than low to moderate** at any of the viewpoints examined."

Greg Neely Comment 6-16-10:
To state, "the visual impact would not be higher than low to moderate" is extremely subjective, given the proximity to the Columbia Gorge National Scenic Area.

It's my opinion that the most crucial viewpoints are:

- ***Hood River***
- ***Columbia River Waterway (adjacent to Hood River)***
- ***Columbia River Shoreline Recreation Sites (Adjacent to Hood River and Mosier)***
- ***I-84 Freeway (From Hood River to Mosier in both directions)***

The DRAFT refers to "micrositing" of towers, however I do not see anywhere in the draft that a site-by-site, micrositing analysis was done for each specific turbine or meteorological tower.

Certainly the turbine & meteorological towers sited in the project area foreground as viewed the crucial viewpoints I identified above will have high visual impact.

I recommend site-by-site, micrositing analysis be done for each specific turbine or meteorological tower within view from:

- ***Hood River***

- ***Columbia River Waterway (adjacent to Hood River)***
- ***Columbia River Shoreline Recreation Sites (Adjacent to Hood River and Mosier)***
- ***I-84 Freeway (From Hood River to Mosier in both directions)***

Greg Neely
[redacted]

COMMENT LETTER 195

Montano,Andrew M - KEC-4

From: Addison Jacobs [redacted]
Sent: Friday, August 20, 2010 8:11 AM
To: Montano,Andrew M - KEC-4
Subject: Port of Vancouver Wind Energy Letter
Attachments: Wind Energy Letter.pdf

To Whom It May Concern:

Please see attached letter in support of wind energy business. This is forwarded at the request of Jason Spadaro of the SDS Lumber Company.

[redacted]

Port of Vancouver USA

August 18, 2010

To Whom It May Concern:

The Port of Vancouver is an active participant in regional and national associations promoting alternative energy, particularly wind energy. We support alternative energy credit programs and state and national alternative energy standards. In addition, the port advocates for the expansion of the wind energy grid in the Pacific Northwest and nationwide.

Over the last five years wind energy cargoes have contributed to the diversification of cargoes at the Port of Vancouver, expanding overall revenues and stabilizing income through the tough economic times. Two large mobile harbor cranes acquired during this time have greatly enhanced the port's ability to attract and support the growth of the wind energy logistics trade. In 2009 alone the port handled 2,700 pieces of wind energy business, generating 55,897 labor hours.

Wind energy business means jobs and economic return for our community in southwest Washington. For this reason, the Port of Vancouver intends to continue its active role in the receipt and delivery of component parts for the wind energy business well into the future.

Sincerely,

Larry Paulson
Executive Director

WRE100088 - Cantrell/Seattle Audubon Society

COMMENT LETTER 196

Montano,Andrew M - KEC-4

From: Shawn Cantrell [redacted]
Sent: Thursday, August 26, 2010 12:07 AM
To: sposner@utc.wa.gov; Montano,Andrew M - KEC-4
Subject: Seattle Audubon comment letter on the Whistling Ridge DEIS
Attachments: SAS DEIS comments 082610.pdf

The attached comment letter was submitted electronically to both EFSEC and BPA. Please let me know if there is any problems opening the attachment or in having our comments officially considered in the review process.

Thank you.

Shawn Cantrell
Executive Director
[redacted]

August 26, 2010

Andrew M. Montano
Environmental Protection Specialist
Bonneville Power Administration
P.O. Box 3621 KEC-4
905 NE 11th Avenue
Portland, OR 92708-3621

Stephen Posner
Energy Facility Site Manager
Washington EFSEC
905 Plum Street SE
Third Floor
Olympia, Washington 98504-3172

RE: Whistling Ridge Energy Project, DOE/EIS - 0419

Dear Mr. Montano and Mr. Posner:

On behalf of the members of Seattle Audubon, I am submitting these comments in response to the May 2010 Draft Environmental Impact Statement (DEIS) for the proposed Whistling Ridge Energy Project. We are a formal intervenor in the EFSEC Site Certification proceeding for this project and we submitted scoping comments regarding the environmental evaluation of the project on May 18, 2009. Seattle Audubon was also an active participant in the development of the Washington Department of Fish and Wildlife's April 2009 ***Wind Power Guidelines***.

The mission of Seattle Audubon is to cultivate and lead a community that values and protects birds and the natural environment. Since 1916, Seattle Audubon has worked to protect birds of our region whose habitats are at risk. Our members have a long history of engagement on forest-related issues in Washington state and an on-going interest in the inter-relationship between bird habitat and human development activities in the forested landscape.

Specific Comments

1. Independent Evaluation

In our scoping comments for this project, Seattle Audubon identified multiple issues in the application that needed thorough review to adequately evaluate the potential environmental impacts of this project. Unfortunately, the DEIS fails to address many of the issues we previously identified. In many instances, the DEIS simply repeats the information presented in the application with no new analysis or documentation. We urge your agencies to ensure that the Final Environmental Impact Statement (FEIS) fully addresses these inadequacies.

As one of the first wind power projects to be considered for a forested landscape in Washington state, this environmental review needs to include a more detailed analysis of several issues that make this proposal different from other wind power projects located on agricultural and/or shrub

steppe habitat; experience and knowledge gained from existing projects in the state may not be "transferable" to a project such as this being proposed for a very different environment.

2. Climate Change

We recognize the significant threat climate change poses to birds and bird habitat, including threatened and endangered bird species. That is why we support well-designed, appropriately-sited renewable energy projects as a critical step in reducing carbon emissions.

Seattle Audubon is greatly encouraged by the potential for this project to avoid the emissions from combustion of an estimated 114,000 barrels of crude oil or 654 million cubic feet of natural gas, leading to the displacement of over 131,000 tons of carbon dioxide annually. (DEIS at 3-20) The beneficial biological impact of such a displacement to birds and other wildlife in the region appears significant.

It is also important to evaluate how the project's contribution to reducing carbon emissions would in turn impact at-risk species in the region such as the northern spotted owl. For example, climate change models predict that as a result of global warming, the Pacific Northwest will experience warmer and drier summers, thereby reducing the food supply for owls, as well as colder and wetter springs, resulting in a reduction in the survival chances of owl fledglings during nesting season. (for more details, see http://ir.library.oregonstate.edu/jspui/bitstream/1957/11326/1/EGlennDisseration2009.pdf)

While hard to quantify precisely, the FEIS should better evaluate the trade-off between potential benefits from the project to birds from avoided emissions (*through reduced carbon output and the resulting effects on forest habitat and food supply)* and the potential harm from the project to birds (*through loss of existing habitat, habitat fragmentation and potential collision mortality).* Your two agencies, together with the project proponent, are well positioned to facilitate a Northwest-specific study comparing the annual bird fatalities caused by wind farms versus those caused by fossil-fueled power stations, similar to the Sovacool study. (DEIS p. 3-276)

3. Northern Spotted Owls

The DEIS contains important information regarding northern spotted owls (NSO), including a description of survey history in the project vicinity. Subsequent to the completion of the DEIS, however, an NSO survey on state Department of Natural Resources (DNR) land adjacent to the proposed project site detected an NSO in May 2010. The presence of an NSO calls into questions many of the conclusions in the DEIS regarding NSO, including the statement that *"Given the extensive survey record confirming the absence of northern spotted owls, the proposed the Project [sic] will not pose a risk of taking northern spotted owls under the Endangered Species Act Section 9 and its regulations."* (DEIS at 3-49)

The FEIS should add a fresh analysis of the potential impacts on NSO, including:

a) <u>An evaluation of the potential for NSO to fly through the project's turbine string corridor.</u> While the potential for an NSO to collide with a wind turbine (blade or tower) is likely low, the FEIS should include life history information on NSO behavior in comparable landscapes, including flight patterns in cleared areas and maximum height of flying *(i.e. within the rotor-swept area)*. Telemetry data should be available from the U.S. Fish and Wildlife Service regarding radio tags studies on

NSO that can provide information on NSO flight patterns in matrix lands with a combination of forested and commercially harvested lands.

b) An evaluation of the specific amount and location of potentially suitable NSO habitat in the proposed project site. While the DEIS states that no forests with suitable structure for NSO nesting or roosting are present within the project site (DEIS p. 3-49), the map of Harvesting Schedule (DEIS Figure 2-3) indicates forest parcels over 70 years old inside the Mill Creek Core Area. In addition, there are multiple reference made to "suitable habitat" and "northern spotted owl habitat" located in the proposed project site (DEIS p. 3-50, 3-52). The FEIS should provide a much clearer and more detailed inventory of the existing NSO habitat conditions on both the project site and within the historic NSO activity centers *(including information on stand age, tree species diversity, snags per acre, etc.).* In addition, while the DEIS notes that the Mill Creek site center contains 48 percent suitable habitat (DEIS p. 3-56), Seattle Audubon is concerned that this calculation by DNR is based on outdated data. The FEIS should detail the specific process used for that calculation and ensure that it is based on up-to-date habitat mapping of the site center.

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the site. This decision gained significantly increased importance with the May 2010 detection of an NSO on this DNR land.

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Reducing the number of turbines offers the potential to significantly reduce some of the adverse environmental impacts of the project. The amount of habitat permanently impacted could be reduced, including avoiding the loss of any suitable or potential NSO habitat. Turbine locations in close proximity to the DNR HCP lands could be removed from the project, lessening the potential to disturb NSO in the area. The FEIS should include at least one additional alternative that provides a detailed analysis of how different combinations of turbine sizes and numbers can best meet the identified minimum necessary project capacity while minimizing the habitat disruptions.

In addition, the FEIS should identify the specific turbine type that would be used at Whistling Ridge. Different turbine types can have different blade tip speeds as well as utilize either an upwind or downwind style. Research at other wind power projects indicates that these differences can have a direct correlation to avian mortalities (DEIS Appendix B, Wildlife Reports). An evaluation of the specific turbines to be used at the project is essential to the environmental review each of your agencies are responsible for completing.

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The project would entail approximately 384 acres of forest land being developed for wind turbine foundations, connecting roadways, overhead and underground transmission lines,

operation and maintenance yard, and substation. (DEIS p. 1-9, 2-4) This includes the permanent loss of 60.7 acres of habitat, as well as the temporary loss of another 53.6 acres of habitat. (DEIS p. 3-73) In addition, there would be significant additional acres impacted by a corridor of up to 500 feet from the base of the turbines that would have a height restriction on trees. (DEIS p. 2-4, 2-15) Despite this noted loss or degradation of habitat, the DEIS does not include any mitigation measures related to these habitat impacts. (DEIS p. 3-82)

The Wind Power Guidelines recommend mitigation for permanent habitat impacts by either acquisition of replacement habitat or "By Fee" option, or a combination of both. (WDFW, p. 9, 12) The Guidelines also recommend mitigation for temporary impacts to habitat, including a WDFW approved restoration plan and some acquisition of suitable replacement habitat. (WDFW, p.11-12)

The FEIS should include an explicit evaluation of the impacted habitat (*both temporary and permanent*) and identify the specific level of mitigation that will be required of the applicant. SEPA provides the authority to impose reasonable conditions to mitigate impacts from a proposed action. While the project lands are not pristine wildlife habitat, they do provide valuable habitat for numerous bird and other species as well as ecosystem services that would be adversely impacted by the project. This habitat provides foraging and breeding opportunities for different species as well as vegetative cover for wildlife. The project proponent, SDS Company, LLC, touts the importance of its forest lands for wildlife and biodiversity, stating that its timberlands *"provide habitat for various species of plants and wildlife, they protect watersheds, they emit oxygen into the atmosphere and consume carbon dioxide, and they provide beautiful spaces for recreation."* (see http://www.stevensonlandcompany.com/) Permanently converting 60.7 acres of this habitat, as well as temporarily impacting an additional 53.6 acres of habitat, requires acquisition of replacement habitat.

Seattle Audubon recommends a ratio of at least 1:1 for replacing permanently impacted habitat and of 0.1:1 for temporarily impacted habitat, as the project lands appear to fit the Wind Power Guidelines' description of Class III habitat – lands with lesser numbers of associated Species of Greatest Conservation Need but that are not currently cultivated, developed or disturbed by an active road or other corridor that eliminates natural habitat. (WDFW p. 9)

SDS manages numerous land parcels in the general vicinity of the projects that are like-kind and/or of equal or higher habitat value than the areas which would be impacted by the project. There are numerous SDS-owned sites in the Columbia River Gorge National Scenic Area and the White Salmon River Wild and Scenic River corridor that meet the criteria identified in the Wind Power Guidelines as being at risk of development or habitat degradation; these or other lands in the areas could serve as appropriate replacement habitat by donation to a land trust or given permanent legal protection through a conservation easement or other enforceable means. (WDFW, p. 9-10) A detailed mitigation package should be developed ***prior to*** project approval, not left to be determined after the fact.

In addition to inclusion of mitigation for impacts to habitat, the FEIS should also explicitly include mitigation for any direct impacts to at-risk species. As noted above in our comments above regarding NSO, olive-sided flycatcher and Vaux's swift, the FEIS should include details

of the specific actions that will be required of the applicant to avoid, minimize and mitigate for any mortality of ESA-listed and other sensitive species.

9. Monitoring

Seattle Audubon appreciates the inclusion of a post-construction avian mortality study. (DEIS p. 3-82) More details on the protocol to be used for this study needs to be included in the FEIS in order to understand whether the proposed "two year minimum" is adequate to evaluate the ongoing impact of project operations on avian species. As the Wind Power Guidelines point out, the duration and scope of the monitoring depends in part on the availability of existing monitoring data at projects in similar habitat types. (WDFW p. 6) In accordance with RCW 80.50.040, EFSEC must prescribe the means for monitoring the effects of project operation in order to assure compliance with the certification. (DEIS p. 1-3) The FEIS should include greater detail on how EFSEC will meet this requirement.

In addition, the FEIS should evaluate the potential for use of canine detection for carcass surveys. The Center for Conservation Biology at the University of Washington has demonstrated the precision and efficiency of dogs in locating wildlife in forested settings (for more details, see http://conservationbiology.net/conservation-canines); as one of Washington's first wind power projects in a forested landscape the Whistling Ridge project is an excellent candidate for looking at applying this methodology to post-construction mortality studies.

Beyond monitoring the direct avian mortalities caused by the project, it is important to also study the *indirect* project impacts such as species displacement from territory and cumulative impacts. (WDFW p. 6) The FEIS should require specific project monitoring strategies that include post-construction avian use surveys of live birds in the project area. It is not enough to just monitor the number of birds directly killed by project operations; post-construction monitoring should also look at how project operation impacts ongoing avian use of the site and adjacent areas. As with our comments regarding mitigation above, a detailed monitoring program should be developed ***prior to*** project approval, not left to be determined after the fact.

10. Adaptive Management

We appreciate the requirement for a Technical Advisory Committee (TAC) to evaluate and coordinate the mitigation and monitoring program, including potential adaptive management activities. (DEIS p. 3-82) Unfortunately the DEIS contains no information detailing the authority of and resources available to the TAC to carry out those responsibilities. As the Wind Power Guidelines point out, the range of potential adjustments the TAC could make to potential mitigation and monitoring requirements should be clearly stated in the project permit. (WDFW p. 6) In addition, the proposed composition of the TAC does not include any stakeholders from environmental groups, landowners or Native American tribes. (WDFW p. 6) The FEIS should identify an expanded TAC that includes representatives from these other stakeholder groups, as well as clearly identify TAC funding and authority.

As noted multiple times above, Whistling Ridge would be one of the first wind power projects to be considered for a forested landscape in Washington state. In light of this, there are several important environmental issues for which there is limited or no applicable comparative data for use in evaluating wind power projects in forested landscapes. In recognition of this type of challenge, the Wind Power Guidelines specifically call for research oriented studies that look at

issues such as species displacement or cumulative impacts that could provide important information for understanding wind energy / wildlife interactions. (WDFW p. 7)

The FEIS should identify specific research oriented studies that would directly relate to the proposed Whistling Ridge project, as well as the role of the TAC in determining the need for further studies. Potential studies include:

a) A robust analysis of pre- and post-construction avian use study data at the project to better understand direct and indirect impacts to specific avian species, including changes to density and nesting success of targeted species.
b) As noted in our cumulative impact comments above, an analysis focused on the Pacific Northwest region, including forested landscapes, of the potential cumulative impacts of a "full build-out" of wind power on avian species.
c) As noted in our climate change comments above, a Pacific Northwest-specific study comparing the annual bird fatalities caused by wind farms versus those caused by fossil-fueled power stations, similar to the 2009 Sovacool study. (DEIS p. 3-276)
d) As noted in our monitoring comments above, the use of canine detection of carcasses in the post-construction avian mortality study.

While funding for these and/or other research oriented studies should be solicited from multiple sources (WDFW p. 7), the FEIS should explicitly identify the level of funding to be provided by the project proponent.

11. Distribution of Project Power

One of the applicant's stated objectives for this project is *" to provide an additional renewable resource for electrical utilities in Washington."* (DEIS p. 1-7*)* We welcome that intent and request that any certification for this project include a provision that the power from project be sold to Washington utility(s) as opposed to being sold into the California market. Because the potential adverse impacts of this project would be experienced locally, it makes sense to keep the project benefits local as well. In addition, such a provision would also help relieve some of the current pressure on the California intertie that is causing challenges for BPA in integrating wind resources into its transmission system.

We appreciate the opportunity to comment on the DEIS for this proposed project and look forward providing additional comment as the environmental review process and site certification proceeding move forward. If you have any questions regarding Seattle Audubon's comments or would like additional information, feel free to contact me by telephone at 206/523-8243 ext. 15 or by email at shawnc@seattleaudubon.org.

Thank you for your consideration.

Sincerely,

Shawn Cantrell
Executive Director

Duplicate of Comment # 387
WR - DEIS
Public Comment #430

Michelle, Kayce (UTC)

From: Shawn Cantrell [redacted]
Sent: Thursday, August 26, 2010 12:02 AM
To: EFSEC (UTC)
Subject: Seattle Audubon comment letter on Whistling Ridge DEIS
Attachments: SAS DEIS comments 082610.pdf

Attached is Seattle Audubon's comment letter on the Whistling Ridge Draft Environmental Impact Statement (DEIS). Please contact me if you have any problems opening the attachment.

The exact same comment letter was also submitted via the BPA website.

Please confirm receipt of this mesage.

Thank you.

Shawn Cantrell
Executive Director
[redacted]

Seattle Audubon Society
for birds and nature

August 26, 2010

Andrew M. Montano
Environmental Protection Specialist
Bonneville Power Administration
P.O. Box 3621 KEC-4
905 NE 11th Avenue
Portland, OR 92708-3621

Stephen Posner
Energy Facility Site Manager
Washington EFSEC
905 Plum Street SE
Third Floor
Olympia, Washington 98504-3172

RE: Whistling Ridge Energy Project, DOE/EIS - 0419

Dear Mr. Montano and Mr. Posner:

On behalf of the members of Seattle Audubon, I am submitting these comments in response to the May 2010 Draft Environmental Impact Statement (DEIS) for the proposed Whistling Ridge Energy Project. We are a formal intervenor in the EFSEC Site Certification proceeding for this project and we submitted scoping comments regarding the environmental evaluation of the project on May 18, 2009. Seattle Audubon was also an active participant in the development of the Washington Department of Fish and Wildlife's April 2009 ***Wind Power Guidelines***.

The mission of Seattle Audubon is to cultivate and lead a community that values and protects birds and the natural environment. Since 1916, Seattle Audubon has worked to protect birds of our region whose habitats are at risk. Our members have a long history of engagement on forest-related issues in Washington state and an on-going interest in the inter-relationship between bird habitat and human development activities in the forested landscape.

Specific Comments

1. Independent Evaluation

In our scoping comments for this project, Seattle Audubon identified multiple issues in the application that needed thorough review to adequately evaluate the potential environmental impacts of this project. Unfortunately, the DEIS fails to address many of the issues we previously identified. In many instances, the DEIS simply repeats the information presented in the application with no new analysis or documentation. We urge your agencies to ensure that the Final Environmental Impact Statement (FEIS) fully addresses these inadequacies.

As one of the first wind power projects to be considered for a forested landscape in Washington state, this environmental review needs to include a more detailed analysis of several issues that make this proposal different from other wind power projects located on agricultural and/or shrub

steppe habitat; experience and knowledge gained from existing projects in the state may not be "transferable" to a project such as this being proposed for a very different environment.

2. Climate Change

We recognize the significant threat climate change poses to birds and bird habitat, including threatened and endangered bird species. That is why we support well-designed, appropriately-sited renewable energy projects as a critical step in reducing carbon emissions.

Seattle Audubon is greatly encouraged by the potential for this project to avoid the emissions from combustion of an estimated 114,000 barrels of crude oil or 654 million cubic feet of natural gas, leading to the displacement of over 131,000 tons of carbon dioxide annually. (DEIS at 3-20) The beneficial biological impact of such a displacement to birds and other wildlife in the region appears significant.

It is also important to evaluate how the project's contribution to reducing carbon emissions would in turn impact at-risk species in the region such as the northern spotted owl. For example, climate change models predict that as a result of global warming, the Pacific Northwest will experience warmer and drier summers, thereby reducing the food supply for owls, as well as colder and wetter springs, resulting in a reduction in the survival chances of owl fledglings during nesting season. (for more details, see http://ir.library.oregonstate.edu/jspui/bitstream/1957/11326/1/EGlennDisseration2009.pdf)

While hard to quantify precisely, the FEIS should better evaluate the trade-off between potential benefits from the project to birds from avoided emissions *(through reduced carbon output and the resulting effects on forest habitat and food supply)* and the potential harm from the project to birds *(through loss of existing habitat, habitat fragmentation and potential collision mortality)*. Your two agencies, together with the project proponent, are well positioned to facilitate a Northwest-specific study comparing the annual bird fatalities caused by wind farms versus those caused by fossil-fueled power stations, similar to the Sovacool study. (DEIS p. 3-276)

3. Northern Spotted Owls

The DEIS contains important information regarding northern spotted owls (NSO), including a description of survey history in the project vicinity. Subsequent to the completion of the DEIS, however, an NSO survey on state Department of Natural Resources (DNR) land adjacent to the proposed project site detected an NSO in May 2010. The presence of an NSO calls into questions many of the conclusions in the DEIS regarding NSO, including the statement that *"Given the extensive survey record confirming the absence of northern spotted owls, the proposed the Project [sic] will not pose a risk of taking northern spotted owls under the Endangered Species Act Section 9 and its regulations."* (DEIS at 3-49)

The FEIS should add a fresh analysis of the potential impacts on NSO, including:

a) An evaluation of the potential for NSO to fly through the project's turbine string corridor. While the potential for an NSO to collide with a wind turbine (blade or tower) is likely low, the FEIS should include life history information on NSO behavior in comparable landscapes, including flight patterns in cleared areas and maximum height of flying *(i.e. within the rotor-swept area)*. Telemetry data should be available from the U.S. Fish and Wildlife Service regarding radio tags studies on

NSO that can provide information on NSO flight patterns in matrix lands with a combination of forested and commercially harvested lands.

b) An evaluation of the specific amount and location of potentially suitable NSO habitat in the proposed project site. While the DEIS states that no forests with suitable structure for NSO nesting or roosting are present within the project site (DEIS p. 3-49), the map of Harvesting Schedule (DEIS Figure 2-3) indicates forest parcels over 70 years old inside the Mill Creek Core Area. In addition, there are multiple reference made to "suitable habitat" and "northern spotted owl habitat" located in the proposed project site (DEIS p. 3-50, 3-52). The FEIS should provide a much clearer and more detailed inventory of the existing NSO habitat conditions on both the project site and within the historic NSO activity centers *(including information on stand age, tree species diversity, snags per acre, etc.)*. In addition, while the DEIS notes that the Mill Creek site center contains 48 percent suitable habitat (DEIS p. 3-56), Seattle Audubon is concerned that this calculation by DNR is based on outdated data. The FEIS should detail the specific process used for that calculation and ensure that it is based on up-to-date habitat mapping of the site center.

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operation and maintenance yard, and substation. (DEIS p. 1-9, 2-4) This includes the permanent loss of 60.7 acres of habitat, as well as the temporary loss of another 53.6 acres of habitat. (DEIS p. 3-73) In addition, there would be significant additional acres impacted by a corridor of up to 500 feet from the base of the turbines that would have a height restriction on trees. (DEIS p. 2-4, 2-15) Despite this noted loss or degradation of habitat, the DEIS does not include any mitigation measures related to these habitat impacts. (DEIS p. 3-82)

The Wind Power Guidelines recommend mitigation for permanent habitat impacts by either acquisition of replacement habitat or "By Fee" option, or a combination of both. (WDFW, p. 9, 12) The Guidelines also recommend mitigation for temporary impacts to habitat, including a WDFW approved restoration plan and some acquisition of suitable replacement habitat.. (WDFW, p.11-12)

The FEIS should include an explicit evaluation of the impacted habitat (*both temporary and permanent*) and identify the specific level of mitigation that will be required of the applicant. SEPA provides the authority to impose reasonable conditions to mitigate impacts from a proposed action. While the project lands are not pristine wildlife habitat, they do provide valuable habitat for numerous bird and other species as well as ecosystem services that would be adversely impacted by the project. This habitat provides foraging and breeding opportunities for different species as well as vegetative cover for wildlife. The project proponent, SDS Company, LLC, touts the importance of its forest lands for wildlife and biodiversity, stating that its timberlands *"provide habitat for various species of plants and wildlife, they protect watersheds, they emit oxygen into the atmosphere and consume carbon dioxide, and they provide beautiful spaces for recreation."* (see http://www.stevensonlandcompany.com/) Permanently converting 60.7 acres of this habitat, as well as temporarily impacting an additional 53.6 acres of habitat, requires acquisition of replacement habitat.

Seattle Audubon recommends a ratio of at least 1:1 for replacing permanently impacted habitat and of 0.1:1 for temporarily impacted habitat, as the project lands appear to fit the Wind Power Guidelines' description of Class III habitat – lands with lesser numbers of associated Species of Greatest Conservation Need but that are not currently cultivated, developed or disturbed by an active road or other corridor that eliminates natural habitat. (WDFW p. 9)

SDS manages numerous land parcels in the general vicinity of the projects that are like-kind and/or of equal or higher habitat value than the areas which would be impacted by the project. There are numerous SDS-owned sites in the Columbia River Gorge National Scenic Area and the White Salmon River Wild and Scenic River corridor that meet the criteria identified in the Wind Power Guidelines as being at risk of development or habitat degradation; these or other lands in the areas could serve as appropriate replacement habitat by donation to a land trust or given permanent legal protection through a conservation easement or other enforceable means. (WDFW, p. 9-10) A detailed mitigation package should be developed ***prior to*** project approval, not left to be determined after the fact.

In addition to inclusion of mitigation for impacts to habitat, the FEIS should also explicitly include mitigation for any direct impacts to at-risk species. As noted above in our comments above regarding NSO, olive-sided flycatcher and Vaux's swift, the FEIS should include details

of the specific actions that will be required of the applicant to avoid, minimize and mitigate for any mortality of ESA-listed and other sensitive species.

9. Monitoring
Seattle Audubon appreciates the inclusion of a post-construction avian mortality study. (DEIS p. 3-82) More details on the protocol to be used for this study needs to be included in the FEIS in order to understand whether the proposed "two year minimum" is adequate to evaluate the ongoing impact of project operations on avian species. As the Wind Power Guidelines point out, the duration and scope of the monitoring depends in part on the availability of existing monitoring data at projects in similar habitat types. (WDFW p. 6) In accordance with RCW 80.50.040, EFSEC must prescribe the means for monitoring the effects of project operation in order to assure compliance with the certification. (DEIS p. 1-3) The FEIS should include greater detail on how EFSEC will meet this requirement.

In addition, the FEIS should evaluate the potential for use of canine detection for carcass surveys. The Center for Conservation Biology at the University of Washington has demonstrated the precision and efficiency of dogs in locating wildlife in forested settings (for more details, see http://conservationbiology.net/conservation-canines); as one of Washington's first wind power projects in a forested landscape the Whistling Ridge project is an excellent candidate for looking at applying this methodology to post-construction mortality studies.

Beyond monitoring the direct avian mortalities caused by the project, it is important to also study the ***indirect*** project impacts such as species displacement from territory and cumulative impacts. (WDFW p. 6) The FEIS should require specific project monitoring strategies that include post-construction avian use surveys of live birds in the project area. It is not enough to just monitor the number of birds directly killed by project operations; post-construction monitoring should also look at how project operation impacts ongoing avian use of the site and adjacent areas. As with our comments regarding mitigation above, a detailed monitoring program should be developed ***prior to*** project approval, not left to be determined after the fact.

10. Adaptive Management
We appreciate the requirement for a Technical Advisory Committee (TAC) to evaluate and coordinate the mitigation and monitoring program, including potential adaptive management activities. (DEIS p. 3-82) Unfortunately the DEIS contains no information detailing the authority of and resources available to the TAC to carry out those responsibilities. As the Wind Power Guidelines point out, the range of potential adjustments the TAC could make to potential mitigation and monitoring requirements should be clearly stated in the project permit. (WDFW p. 6) In addition, the proposed composition of the TAC does not include any stakeholders from environmental groups, landowners or Native American tribes. (WDFW p. 6) The FEIS should identify an expanded TAC that includes representatives from these other stakeholder groups, as well as clearly identify TAC funding and authority.

As noted multiple times above, Whistling Ridge would be one of the first wind power projects to be considered for a forested landscape in Washington state. In light of this, there are several important environmental issues for which there is limited or no applicable comparative data for use in evaluating wind power projects in forested landscapes. In recognition of this type of challenge, the Wind Power Guidelines specifically call for research oriented studies that look at

issues such as species displacement or cumulative impacts that could provide important information for understanding wind energy / wildlife interactions. (WDFW p. 7)

The FEIS should identify specific research oriented studies that would directly relate to the proposed Whistling Ridge project, as well as the role of the TAC in determining the need for further studies. Potential studies include:

a) A robust analysis of pre- and post-construction avian use study data at the project to better understand direct and indirect impacts to specific avian species, including changes to density and nesting success of targeted species.
b) As noted in our cumulative impact comments above, an analysis focused on the Pacific Northwest region, including forested landscapes, of the potential cumulative impacts of a "full build-out" of wind power on avian species.
c) As noted in our climate change comments above, a Pacific Northwest-specific study comparing the annual bird fatalities caused by wind farms versus those caused by fossil-fueled power stations, similar to the 2009 Sovacool study. (DEIS p. 3-276)
d) As noted in our monitoring comments above, the use of canine detection of carcasses in the post-construction avian mortality study.

While funding for these and/or other research oriented studies should be solicited from multiple sources (WDFW p. 7), the FEIS should explicitly identify the level of funding to be provided by the project proponent.

11. Distribution of Project Power

One of the applicant's stated objectives for this project is *" to provide an additional renewable resource for electrical utilities in Washington."* (DEIS p. 1-7*)* We welcome that intent and request that any certification for this project include a provision that the power from project be sold to Washington utility(s) as opposed to being sold into the California market. Because the potential adverse impacts of this project would be experienced locally, it makes sense to keep the project benefits local as well. In addition, such a provision would also help relieve some of the current pressure on the California intertie that is causing challenges for BPA in integrating wind resources into its transmission system.

We appreciate the opportunity to comment on the DEIS for this proposed project and look forward providing additional comment as the environmental review process and site certification proceeding move forward. If you have any questions regarding Seattle Audubon's comments or would like additional information, feel free to contact me by telephone at 206/523-8243 ext. 15 or by email at shawnc@seattleaudubon.org.

Thank you for your consideration.

Sincerely,

Shawn Cantrell

Shawn Cantrell
Executive Director

COMMENT LETTER 197

Montano,Andrew M - KEC-4

From: Debbie Slack [redacted]

Sent: Tuesday, August 17, 2010 12:02 PM

To: efsec@utc.wa.gov; stephen.posner@commerce.wa.gov; Montano,Andrew M - KEC-4

Subject: FW: Resolution Demanding Retraction of Dept of Interior Comments on Whistling Ridge Wind Energy Project

Attachments: Interior Resolution.pdf; ER10_492_deis[1].pdf

Resolution from Skamania County Commissioners,. Please include in public comment on EIS for Whistling Ridge. Please call Commissioner Paul Pearce if you have any questions.

RESOLUTION 2010-51

(A Resolution Demanding Retraction of the Department of Interior Comments on the Draft Environmental Impact Statement for the Whistling Ridge Wind Energy Project and explanation of its Actions in Commenting without Authority or Jurisdiction against the Secretary's and Administration Policy)

WHEREAS, Whistling Ridge Energy Project filed an Application for Site Certification to the Washington Energy Facility Site Evaluation Council ("EFSEC") on March 10, 2009 for the Whistling Ridge Energy Project; and

WHEREAS, EFSEC is lead agency pursuant to the State Environmental Policy Act, and Bonneville Power Administration ("BPA") is federal lead agency pursuant to the National Environmental Policy Act; and

WHEREAS, EFSEC and BPA have independently issued a joint Draft Environmental Impact Statement for this Project and are seeking public comment on the DEIS; and

WHEREAS, the entire project is located outside of the Columbia River Gorge National Scenic Area ("Scenic Area") on privately owned lands in Skamania County; and

WHEREAS, Federal Government regulation of private lands as well as the economic survival of Skamania, other local counties and communities were major concerns when the Columbia River Gorge National Scenic Area ("Scenic Area Act") was debated in Congress; which resulted in several major compromises to address these concerns before passage of the Scenic Area Act in its final form, without which, Congress would not have enacted the Scenic Area Act and President Reagan would not have signed it into law. These compromises included the purchase or trade of private lands that were regulated for the protection of scenery in the Special Management Areas, the designation of Urban Areas that are completely exempt from restrictions and the designation of an external boundary that by Congressional direction is the absolute boundary with no buffers or setbacks outside of the Scenic Area. Congressional intent is found in the "Savings Provision" at 16 USC § 544o(a)(10) which states:

> *Nothing in [this Act] shall . . . establish protective perimeters or buffer zones around the scenic area or each special management area. The fact that activities or uses inconsistent with the management directives for the scenic area or special management areas can be* ***seen*** *or heard from these areas shall not, of itself, preclude such activities or uses up to the boundaries of the scenic area or special management areas."*; and

WHEREAS, The National Trail System Act, 16 USC §§ 1241 – 1251 authorizes Congress to designate National Scenic and Historic Trails but does not, by mandate or implication, authorize Interior to regulate or restrict private lands or to even negatively comment on or oppose private projects proposed on private lands nearby, or visible from, designated trail sections; and

WHEREAS, Skamania County recently received a copy of the U.S. Department of the Interior ("Interior") DEIS comment letter dated July 19, 2010, wherein Interior raises concerns about visibility of the proposed project from the Scenic Area and the nationally designated Lewis and Clark National Historic Trail and suggests elimination of Whistling Ridge wind turbines that are visible from both the Scenic Area and the Lewis and Clark National Historic Trail; and

WHEREAS, many thousands of miles of trails are designated throughout the Western United States under the National Trail System Act. With the exception of federal lands, and lands acquired by the Federal Government for preservation of trails, the Federal Government has no authority to regulate or restrict the use of private lands near trails designated under the National Trail System Act, for any reason, especially for purported visual effects on trail segments. Moreover, as described in the Interior letter, the "trail" at issue here is coextensive with US Interstate 84 and Washington State Highway 14 which are not pristine "trail" segments—they are major, busy multi-modal transportation corridors, including the only sea level train route (on both sides of the Columbia River) through the Cascades, with over 80 commercial trains transiting per day.

NOW, THEREFORE, BE IT RESOLVED THAT THE Board of Commissioners being concerned and alarmed with Interior's comments and apparent attempt at inappropriate Federal intervention on the consideration of the Whistling Ridge application, find as follows:

The Board finds: Interior's reference to the National Trail Systems Act and the Scenic Area as authority for the comment letter is an abuse of federal authority that exceeds the legal and policy directives and Congressional intent of both the National Trail Systems Act and the Scenic Area Act. Interior's comments are particularly egregious where they recommend that renewable wind energy construction (proposed on private lands outside of the Scenic Area and miles away from any trail segments in Skamania County) that are visible from the National Trail Systems Act and the Scenic Area should be eliminated from the Project, or that the proponent must justify "feasibility" for the locations visible from I-84.

The Board finds: Many man-made structures and activities are visible and will be visible along these "trails" that follow Interstate highways, where the most visible of "impacts" on travelers are the many semi trucks, trains, transmission lines, dams, industrial facilities, mines, and coal, gas and nuclear power generating facilities, as well as many cities, homes, commercial buildings, advertising signs and billboards, that they pass by. It is a gross abuse of federal authority to negatively comment on, and seek to obstruct a renewable energy project on private lands merely because a small portion is remotely visible from an Interstate highway.

The Board finds: Consistent with our concerns raised above regarding National Trail Systems Act authority, that Interior's recommendation of restricting private land development in view of the Scenic Area is in direct violation of the critically important Scenic Area Act compromises and Savings Provisions the intent of which was to allow local counties economic development opportunity for their continued survival.

The Board finds: Interior's comments and recommendations have serious policy implications not only for renewable energy development but also for other non-wind energy related projects that are visible from the Scenic Area and National Historic Trails, such as electrical transmissions systems, dams, rail transportation, interstate commerce and traffic, as well as residential, commercial and industrial development in Skamania and other Counties near the Scenic Area and/or Counties located near similarly designated trails under the National Trails System Act.

The Board finds: Interiors comments contradict both the Secretary's publicly stated policy as it pertains to renewable energy as well as contradicting the clear energy policy direction of the current Administration.

The Board finds: Finally, in addition to the comment concerning the Scenic Area and the Interstate Highway corridor, Interior provided specific comments related to purported groundwater issues—issues raised by local citizen neighbor opponents at the NEPA/SEPA comment hearing. Skamania County has regulatory responsibility for groundwater issues, and will work with EFSEC to address the citizen comment. This is ***not*** a federal issue. Interior has no authority to insert itself into this uniquely local issue, and its decision to do so demonstrates its lack of regard for Skamania County's authority: strongly suggesting inappropriate collaboration with Whistling Ridge project opponents.

NOW, THEREFORE, BE IT FINALLY RESOLVED THAT THE Board of Commissioners reacting to this clear abuse of authority without jurisdiction, hereby demand, in the strongest possible terms, that Interior's comments be immediately retracted and removed from the public record on this matter, and further respectfully request that the Secretary and the Administration clarify how Interior has acted within its authority, consistent with the stated policy direction of the Secretary and the Administration, and what this letter means for the implementation of the Administration's declared land management and energy policies.

DATED this 3rd day of August 2010.

ATTEST:

BOARD OF COMMISSIONERS SKAMANIA COUNTY WASHINGTON CLERK OF THE BOARD

Clerk of the Board

SKAMANIA COUNTY
BOARD OF COMMISSIONERS

Chairman

Commissioner

Commissioner

Approved as to form only:

Skamania County Prosecuting Attorney

Aye 3
Nay____
Abstain____
Absent____

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
620 SW Main Street, Suite 201
Portland, Oregon 97205-3026

9043.1
IN REPLY REFER TO:
ER10/492

Electronically Filed

July 19, 2010

Andrew M. Montaño
Environmental Project Manager
Bonneville Power Administration – KEC-4
P.O. Box 3621
Portland, Oregon 97208

Dear Mr. Montaño:

The U.S. Department of the Interior (Department) has reviewed the Draft Environmental Impact Statement (DEIS) for the Bonneville Power Administration's Whistling Ridge Energy Project, Skamania County, Washington. The Department offers the following comments for use in developing the Final Environmental Impact Statement for the project.

Lewis and Clark National Historic Trail

The proposed Whistling Ridge Energy project is located within five miles of the Lewis and Clark National Historic Trail (NHT), a congressionally-designated NHT, which follows the Columbia River and is within the area analyzed in the DEIS for potential visual impacts. In addition, US Interstate 84 and Washington Route 14 are the state-designated Lewis and Clark auto tour routes in the project area. Many visitors experience Lewis and Clark NHT by traveling the auto tour routes and stopping at interpretive and recreational sites along the way. The Department considers the viewshed along the river and auto tour routes to be a critical part of the trail visitor experience.

The Lewis and Clark NHT was established by Congress in an amendment to the National Trails System Act in 1978. 16 U.S.C. § 1244(a). As administrator of the trail, the National Park Service (NPS) is charged under this Act with the identification and protection of the historic route, remnants, and artifacts of the trail for public use and enjoyment.

Based on the analysis of visual impacts in the DEIS, it appears that a varying number of turbines will be visible from the trail's historic river and auto tour routes from near

Koberg Beach State Park to Lindsey Creek State Park. This approximately 15-mile stretch of the Columbia River Gorge has numerous recreational opportunities and scenic views that add significantly to enjoyment of the historic trail. Of the five viewpoints along US Interstate 84 analyzed in the DEIS, Viewpoint 14 at Viento State Park, is rated in Table 3.9-2 as having an anticipated moderate to high level of visual impact. However, on page 3-193 of the DEIS, the potential visual impact for this viewpoint is stated as only moderate. Furthermore, it appears that the turbines were inadvertently omitted in the photomontage in Figure 3.9-11. While difficult to discern the impact at this location without clarification on the accuracy of the visual simulation, we believe that the impact should be rated as high given the placement of turbines on the skyline within four miles of a park located along the auto tour route.

Turbine string A1-A7 would be highly visible from numerous locations along the trail due to its placement on a ridgeline close to the Columbia River Gorge. The NPS recommends removing or relocating these seven turbines, if feasible. This would significantly reduce the impact to visual resources along the historic trail. The visual resources in this region—Columbia River Gorge National Scenic Area and Lewis and Clark NHT—are important resources that should be protected.

Please add the following people to the federal agency distribution list for this project:

Dan Wiley
Chief of Resources Stewardship
Lewis and Clark National Historic Trail
601 Riverfront Drive
Omaha, NE 68102
(402) 661-1830
Dan_Wiley@nps.gov

Lee Kreutzer
National Trails System
National Park Service
324 S. State, Suite 200
Salt Lake City, UT 84111
(801) 741-1012 ext. 118
Lee_Kreutzer@nps.gov

SPECIFIC COMMENTS

Water Resources Section 3.3

Pg. 3-26: Section 3.3.1.3 lacks sufficient information on the existing groundwater environment to support the finding of little or no impact. Suggest the section more fully address the depth to groundwater, flow direction, and transmissivity (permeability) of the aquifer as it relates to possible affects on the area domestic and agricultural ground-water resources (also see section 3.3.1.5). Helsel et.al. (2002) is a good reference for this type of analysis.

Pg. 3-29: Because section 3.3.3 addresses mitigation procedures for the isolation of groundwater from chemical spills, we assume that chemicals will be present on site during both construction and operation. Suggest the document include a discussion of potential chemical spills, and aquifer transmissivity (permeability), as it relates to the potential movement of contaminants toward nearby domestic or agricultural water wells.

Reference

Helsel, D.R. and Hirsch, R.M., 2002, Statistical methods in water resources: U.S. Geological Survey—Techniques of Water-Resources Investigations Book 4, Chapter A3, 510 p. Available on the internet at: http://pubs.usgs.gov/twri/twri4a3/

Thank you for the opportunity to review and comment on this DEIS. If you have any questions concerning the NPS comments, please contact Dan Wiley at (402) 661-1830 or at Dan_Wiley@nps.gov, or Lee Kreutzer at (801) 741-1013 (x118) or at Lee_Kreutzer@nps.gov. If you have any questions concerning the USGS comments, please contact Gary LeCain, USGS Coordinator for Environmental Document Reviews, at (303) 236-5050 (x229) or at gdlecain@usgs.gov. If you have any other questions, please contact me at (503) 326-2489.

Sincerely,

Preston A. Sleeger
Regional Environmental Officer

WR - DEIS
Public Comment #368

Michelle, Kayce (UTC)

From: Debbie Slack [slack@co.skamania.wa.us]
Sent: Tuesday, August 17, 2010 12:02 PM
To: EFSEC (UTC); Posner, Stephen (COM); ammontano@bpa.gov
Subject: FW: Resolution Demanding Retraction of Dept of Interior Comments on Whistling Ridge Wind Energy Project
Attachments: Interior Resolution.pdf; ER10_492_deis[1].pdf

Resolution from Skamania County Commissioners,. Please include in public comment on EIS for Whistling Ridge. Please call Commissioner Paul Pearce if you have any questions.

RESOLUTION 2010-51

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WHEREAS, EFSEC is lead agency pursuant to the State Environmental Policy Act, and Bonneville Power Administration ("BPA") is federal lead agency pursuant to the National Environmental Policy Act; and

WHEREAS, EFSEC and BPA have independently issued a joint Draft Environmental Impact Statement for this Project and are seeking public comment on the DEIS; and

WHEREAS, the entire project is located outside of the Columbia River Gorge National Scenic Area ("Scenic Area") on privately owned lands in Skamania County; and

WHEREAS, Federal Government regulation of private lands as well as the economic survival of Skamania, other local counties and communities were major concerns when the Columbia River Gorge National Scenic Area ("Scenic Area Act") was debated in Congress; which resulted in several major compromises to address these concerns before passage of the Scenic Area Act in its final form, without which, Congress would not have enacted the Scenic Area Act and President Reagan would not have signed it into law. These compromises included the purchase or trade of private lands that were regulated for the protection of scenery in the Special Management Areas, the designation of Urban Areas that are completely exempt from restrictions and the designation of an external boundary that by Congressional direction is the absolute boundary with no buffers or setbacks outside of the Scenic Area. Congressional intent is found in the "Savings Provision" at 16 USC § 544o(a)(10) which states:

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WHEREAS, many thousands of miles of trails are designated throughout the Western United States under the National Trail System Act. With the exception of federal lands, and lands acquired by the Federal Government for preservation of trails, the Federal Government has no authority to regulate or restrict the use of private lands near trails designated under the National Trail System Act, for any reason, especially for purported visual effects on trail segments. Moreover, as described in the Interior letter, the "trail" at issue here is coextensive with US Interstate 84 and Washington State Highway 14 which are not pristine "trail" segments—they are major, busy multi-modal transportation corridors, including the only sea level train route (on both sides of the Columbia River) through the Cascades, with over 80 commercial trains transiting per day.

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The Board finds: Interiors comments contradict both the Secretary's publicly stated policy as it pertains to renewable energy as well as contradicting the clear energy policy direction of the current Administration.

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DATED this 3rd day of August 2010.

ATTEST:

BOARD OF COMMISSIONERS SKAMANIA COUNTY WASHINGTON CLERK OF THE BOARD

Clerk of the Board

SKAMANIA COUNTY
BOARD OF COMMISSIONERS

Chairman

Commissioner

Commissioner

Approved as to form only:

Skamania County Prosecuting Attorney

Aye 3
Nay____
Abstain____
Absent____

United States Department of the Interior
OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
620 SW Main Street, Suite 201
Portland, Oregon 97205-3026

TAKE PRIDE IN AMERICA

9043.1
IN REPLY REFER TO:
ER10/492

Electronically Filed

July 19, 2010

Andrew M. Montaño
Environmental Project Manager
Bonneville Power Administration – KEC-4
P.O. Box 3621
Portland, Oregon 97208

Dear Mr. Montaño:

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Please add the following people to the federal agency distribution list for this project:

Dan Wiley
Chief of Resources Stewardship
Lewis and Clark National Historic Trail
601 Riverfront Drive
Omaha, NE 68102
(402) 661-1830
Dan_Wiley@nps.gov

Lee Kreutzer
National Trails System
National Park Service
324 S. State, Suite 200
Salt Lake City, UT 84111
(801) 741-1012 ext. 118
Lee_Kreutzer@nps.gov

SPECIFIC COMMENTS

Water Resources Section 3.3

Pg. 3-26: Section 3.3.1.3 lacks sufficient information on the existing groundwater environment to support the finding of little or no impact. Suggest the section more fully address the depth to groundwater, flow direction, and transmissivity (permeability) of the aquifer as it relates to possible affects on the area domestic and agricultural ground-water resources (also see section 3.3.1.5). Helsel et.al. (2002) is a good reference for this type of analysis.

Pg. 3-29: Because section 3.3.3 addresses mitigation procedures for the isolation of groundwater from chemical spills, we assume that chemicals will be present on site during both construction and operation. Suggest the document include a discussion of potential chemical spills, and aquifer transmissivity (permeability), as it relates to the potential movement of contaminants toward nearby domestic or agricultural water wells.

Reference

Helsel, D.R. and Hirsch, R.M., 2002, Statistical methods in water resources: U.S. Geological Survey—Techniques of Water-Resources Investigations Book 4, Chapter A3, 510 p. Available on the internet at: http://pubs.usgs.gov/twri/twri4a3/

Thank you for the opportunity to review and comment on this DEIS. If you have any questions concerning the NPS comments, please contact Dan Wiley at (402) 661-1830 or at Dan_Wiley@nps.gov, or Lee Kreutzer at (801) 741-1013 (x118) or at Lee_Kreutzer@nps.gov. If you have any questions concerning the USGS comments, please contact Gary LeCain, USGS Coordinator for Environmental Document Reviews, at (303) 236-5050 (x229) or at gdlecain@usgs.gov. If you have any other questions, please contact me at (503) 326-2489.

Sincerely,

Preston A. Sleeger
Regional Environmental Officer

COMMENT LETTER 198

From: Helwig,Heidi Y - DKE-7
Sent: Thursday, June 17, 2010 9:57 AM
To: Montano,Andrew M - KEC-4; Offerdal,Susan F - KEC-4
Subject: public comment via 1-800 line

I spoke with this man this morning and will enter his comments:

John Stege, Port Orchard

"I drive through the gorge quite often. I think wind power is a good thing, but not in the gorge because of the scenic area and could have impacts on wildlife and plants. That would degrade the scenic area. For this reason this project should be denied."

Heidi Helwig
BPA Public Affairs Office
DKE-7
503-230-3458

COMMENT LETTER 199

From: Henderson, Mary [redacted]
Sent: Thursday, July 22, 2010 9:33 AM
To: Montano,Andrew M - KEC-4
Subject: Whistling Ridge

In looking at the map on the website for the EIS, it appears the interconnect won't affect us, but SDS's project appears to be in the area of our pipeline that runs east/west up the gorge through Skamania County.
I need to be in contact with SDS or its developer, but want to be sure I get our information out there to all players and wasn't sure of BPA's involvement initially. Thank you for passing the information on and including us with notifications.

Mary Henderson
Land Representative
NW Pipeline GP
[redacted]

COMMENT LETTER 200

Confederated Tribes and Bands
of the Yakama Nation

Established by the
Treaty of June 9, 1855

RECEIVED
JUN 17 2010
ENVIRONMENT
FISH & WILDLIFE

Memorandum

To: **Andrew Montano, Manager**
Environmental Project

From: **Harry Smiskin, Chairman**
Yakama Nation Tribal Council

Date: **June 15, 2010**

Subject: **Whistling Ridge Energy Project**

I, the Chairman of Yakama Nation Tribal Council, am requesting a continuance of thirty (30) days to review and comment on the Whistling Ridge Energy Project. My staff and I have not had the chance to meet on this important matter, and we would like to provide you with our input.

Chairman Harry Smiskin
P.O. Box 151
Yakama Nation
Toppenish, Wa 98948

copy to: Tribal council
Lavina Washines
LAVINA WASHINES

Confederated Tribes and Bands
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Toppenish, Wa 98948

Copy to: Tribal council
Lavina Washines
LAVINA WASHINES

COMMENT LETTER 201

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100003 - Carvalho

(This comment corrects an error in the text of the prior one submitted in my name.) I have a comment on the impact of the Whistling Ridge wind project; it includes a photograph too large to submit here and is online at http://www.lensjoy.com/Blog/windmills_are_coming.htm. I am the author of the online article. Nestor Peak and Mitchell Point are key viewing areas used by hikers, mountain bikers, ATV enthusiasts, and horseback riders. If this project is built, the view of Mt. Hood from Nestor Peak and the view of Mt. Adams from points along the Oregon side of the Columbia Gorge will be permanently spoiled. In addition, the onslaught of wind turbines will continue to encircle the Columbia Gorge and destroy once-pristine views of the ridges and horizon that were one of the primary reasons the National Scenic Area was created. It is not suited for the proposed location. The Whistling Ridge site is in a forest, and is in owl habitat. It is a very different location compared to agricultural fields where prior developments have been sited. Forest sites have an order of magnitude greater wildlife population density, and wind farms are incompatible with them. Please deny the project application and institute a moratorium on further wind development within 20 miles of the Gorge Scenic Area boundary until we can understand the long-term impacts of wind development on animals and develop a meaningful plan that mitigates the visual impact of these projects. BPA and the Army Corps of Engineers took Celilo Falls away from us in 1957. Now it is 2010, and BPA plans to take away the horizon as well. The ongoing rape of natural beauty to fuel mankind's greed for energy and dollars must stop, here and now. Sincerely, Chris Carvalho

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100002 - Carvalho

I have a comment on the impact of the Whistling Ridge wind project; it includes a photograph too large to submit here and is online at http://www.lensjoy.com/Blog/windmills_are_coming.htm. I am the author of the online article. Nestor Peak and Mitchell Point are key viewing areas used by hikers, mountain bikers, ATV enthusiasts, and horseback riders. If this project is built, the view of Mt. Hood from these locations will be permanently spoiled. In addition, the onslaught of wind turbines will continue to encircle the Columbia Gorge and destroy once-pristine views of the ridges and horizon that were one of the primary reasons the National Scenic Area was created. It is not suited for the proposed location. The Whistling Ridge site is in a forest, and is in owl habitat. It is a very different location compared to agricultural fields where prior developments have been sited. Forest sites have an order of magnitude greater wildlife population density, and wind farms are incompatible with them. Please deny the project application and institute a moratorium on further wind development within 20 miles of the Gorge Scenic Area boundary until we can understand the long-term impacts of wind development on animals and develop a meaningful plan that mitigates the visual impact of these projects. BPA and the Army Corps of Engineers took Celilo Falls away from us in 1957. Now it is 2010, and BPA plans to take away the horizon as well. The ongoing rape of natural beauty to fuel mankind's greed for energy and dollars must stop, here and now. Sincerely, Chris Carvalho

COMMENT LETTER 202

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100005 - Larkman/Retired

I am all for Alternative Energy Projects, but, not at the expense of despoiling one of our National Treasures. We live in the area and have many visitors, all those visitors comment on the pristine beauty of the area. We need to retain the vista, not only of the area covered by the Scenic act, but also of the area bordering this stunning scenery for future generations. These vistas would be adversely impacted by the proposed project and directly effect the enjoyment of visitors and locals alike. Please don't allow the project to go ahead.

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100006 - dewey

As residents of the area that will ba able to see some of the turbines of this proposed project, my wife and I are in favor of it. We can't continue the practice of saying "Yes, we need these projects but not in my area". This will not get us where we need to be down the road. SDS is a good and responsible company that cares. It is their land, and they have the right to do this, and they will do it in a responsible manner. ps-it is sad that some of the people speaking out against this project were the same ones that were cutting hiking/biking trails on SDS property in this same general area. They want to tell SDS what they can't do but at the same time, don't respect the private property of others.

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100007 - Peyrollaz/County resident

I am part of that silent majority who does not like to attend meetings where people argue and intimidate me but I feel my voice does need to be heard. I support the Whistling Ridge Energy Project. Not only does it give an alternative source of clean energy, but it also will provide new jobs and tax revenues to our county which has been devistated with so many land set asides and regulations that our children have to leave the area in order to find jobs. Wind energy is a clean, quiet source which uses the natural winds of The Gorge. In my opinion, the people who are causing the obsticles in implementing this natural resource are the same people who have opposed most everything else that is proposed in The Gorge. They have personal agendas which are not for the good of the community but for their selfish interests. Wind Energy is a Good thing for The Gorge, a Good thing for the economy of The Gorge and a good, clean alternative that all the environmentalists have been insisting on. Let's move forward and let a Good thing happen.

COMMENT LETTER 205

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100009 - McKenna

I'm opposed to the project because this contradicts the spirit of the Columbia Gorge Scenic Area. Even though the project is outside the area, it was never envisioned that there would be this type of project that could be seen from within the scenic area.

COMMENT LETTER 206

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100010 - McKenna

While not technically within the boundaries of the Columbia Gorge Scenic Area, the Whistling Ridge Energy Project contradicts the spirit of the Scenic Area. Had anyone imagined the building of skyscraper-height structures just outside the scenic area, I'm confident that they would have designated a bigger area. We live in Hood River, Oregon, and the ridges upon which they are proposing the turbines are visible from all over the beautiful Hood River valley. Our economy on both sides of the Gorge is largely dependent on tourism due to the scenic beauty of the area. These turbines would negatively affect this industry in both Oregon and Washington. Everyone I know in Hood River is strongly opposed to the construction of these giant turbines looming over our natural and beautiful slice of the world. Please don't approve this project!

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100011 - Gross

I am opposed to wind turbines going up on the scenic ridgeway near White Salmon. To take away from the beauty of the Columbia Gorge would be an outrage; and also all the wildlife disturbance. So I am definitely opposed to any wind turbines going up in that area.

COMMENT LETTER 208

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100014 - Saufley

To Whom It May Concern: I support the decision to proceed with the Whistling Ridge Energy Project; however, a couple of things should be addressed: 1) The location of the project should not be too close to scenic wilderness areas. Primarily, areas which would affect the spotted owl and others species in wildlife. We should take pains not to disrupt their livelihood and habitat. 2) Frankly, I am also concerned of the increase in traffic, where congestion and the building of roads disrupt wildlife habitat. This includes not only land animals, but aquatic ones too. It would affect the vegetation in the area and reduce the food supply in the long term. Thank you.

COMMENT LETTER 209

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100015 - Zimbelman

I support the wind project at Whistling Ridge. Wind energy should be one of our priorities when considering new and green energy sources for our future.

COMMENT LETTER 210

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100017 - Kingsford-Smith & Family/Local Family

While supportive of clean energy, we are certainly concerned with the visual impact in the HEART of the scenic area. We are pleased with the development of the wind power further east in the Gorge and throughout various areas in the northwest. However, this development strikes at the core of the Scenic Act and would negatively impact the key tourist and scenic value of several communities within the heart of the gorge. Please reconsider other SDS properties to post wind towers. The ridges east of White Salmon are preferable, but frankly, all towers should be east of Lyle. Thank you for your time and consideration... -sks & co.

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100018 - VanderKloot

I oppose the whistling ridge project. We need to reduce consumption of power. No more power production should be initiated in the Columbia River Gorge. Power quotas should be enacted to reduce consumption of electricity. The environmental consequences are too great.

COMMENT LETTER 212

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100019 - Sliwa

I am in support of the Whistling Ridge project. I feel wind energy is one of the cleanest forms of energy generation possible, and those who live in areas amenable to wind generation need to make a few sacrifices to enable it. I personally think the generators are beautiful and do not detract from the Gorge view. However, I do feel that if the project managers can make some minor modifications to number or exact location of the towers to accommodate specific complaints of the local residents, they should do their best.

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100020 - mooney

The mailing that SDS sent out was very troubling. Our neighborhood is comprised of $500,000 and up homes that moved here for the view. Our view will now be looking at windmills all day and blinking lights all night. We will receive no benefit from these windmills and we are in a different county. SDS gains the money, we gain nothing except a destroyed skyline. My only compromise would be to lower the windmills below the ridgeline so we don't have to look at these unsightly beasts.

COMMENT LETTER 214

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100022 - Fischer

Love the idea of a cleaner power source than coal. Not sure that it is fair for us to push the unsightly and dirty job of generating power with coal onto other communities when we have a chance to contribute our share locally. I think the turbines look graceful and I do not mind them during the day. At night the red hazard lights are an eyesore. I would vote no just to avoid seeing the lights at night. Probably not possible to get rid of the lights.... but it sure would be nice. My biggest concern is that there be a guaranteed set-aside fund to remove the turbines once they have reached the end of their useful life and stopped generating power. There should absolutely be a provision to restore the area once they stop generating power. It is inevitable that at some point a newer technology will replace wind and when it does please make sure that we don't have to look at something that we are not deriving benefit from. Thank you, HF

COMMENT LETTER 215

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100025 - Ensminger/retired

I live on Underwood Mountain, WA. where the Whistling Ridge Wind Turbines are to be built. I have lived here 40 years, we are orchardist and grape growers. My house will be approximately 9000' from some of the turbines. I support the turbines. We need this type of energy. Alot of people say to move it east to the wheat fields, we have the wind here, and it should be utilized. But I do not want more then the 50 being planned.

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100026 - VanderKloot, Comment made by telephone.

Calling in opposition of the Whistling Ridge power project. He believes it will degrade the values of the property and the ecology of the gorge. He feels that we should reduce power usage instead of creating more power sources. We should have a quota as to how much power people use -- use the amounts people use now, and decrease it.

COMMENT LETTER 217

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100027 - Sherwood

Received email from ColumbiaGorgeForum.org regarding a wind project in the gorge sponsored by SDS Lumber Company to construct wind turbines in the gorge. Opposed to this project due to the abuse of tax dollars. Don't ruin the beauty of the gorge!

COMMENT LETTER 218

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100028 - Peterson/Vineyard View Bed and Breakfast, comment made by telephone.

Called to comment because he's too busy to attend the meetings for Whistling Ridge because he's hosting a beautiful event, a 15th birthday party, at the bed and breakfast. He loves to see the view of the gorge the way it's always been, and he believes it's inappropriate to place 50 decibel, 500 foot tall towers there. It's just not a good trade off for the small amount of power. When he got permits to build his B&B he had to plant lots of trees as to not upset his neighbors. There are appropriate places for wind turbines, but not in the scenic Columbia River gorge.

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100031 - Saulie-Rohman/Renewable Energy Student

My name is John Saulie-Rohman and I am writing in support of the Whistling Ridge Wind Project. I am a first year student at Columbia Gorge CC and my family is from this area (White Salmon) Because the timber industry is on the downward spiral and so much of the local economy depends on its funds I believe wind power is a viable option. There are negative qualities to every solution and there will always be somebody against everything. I have watched Underwood Mountain be clear cut for years now and public outcry was minimal. My main concern is that the power and the revenue generated by the wind farm stay local. I support turbines manufactured in the United States and I support local economies benefiting from the farm. It is very frustrating when the local people push green, green, green, but when it comes to their neighborhood they want it in their neighbor's backyard. I say stay local and keep up with the times because they are a changin'. Thank You. John Saulie-Rohman P.S. I would have showed up at the public hearings but I did not receive any literature and was not at all aware of the hearing until my classmate received the pamphlet after the hearings.

COMMENT LETTER 220

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100034 - Griswold

I am against siting any wind turbines in any key viewing area of the Columbia River Gorge NSA.

This wind farm will be visable from many points in the CRG NSA. More tourist dollars and real estate/property tax dollars will come to the area over the years than will be produced as income from this wind farm. Please do not approve Whistling Ridge in any form.

Please be part of maintaining the intent of the CRG NSA. Do not sell out this area for respite from the metropolis to the money-making interests of those wishing to benefit from wind-generated electricity, This, and any wind farm in view spaces of the CRG NSA should not be approved. I would be looking right at Whistling Ridge turbines every time I left my house to drive down the hill into Mosier.

Thank you for taking my comment.

COMMENT LETTER 221

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100035 - Snyder

My wife and I are strongly in favor of alternate energy sources, including wind power. The issue is as in real estate, location, location, location. There are many places in our state not as beautiful as forest lands, no matter who owns them. We then oppose projects that will destroy the natural beauty of the forests. Do a land trade for some desert property.

COMMENT LETTER 222

WRE 100038

June 18-2010

Even Before the Oil Disaster I thought the Wind Project- Whistling Ridge of Stds of White Salmon, was a very good Thing.

As the population increases, the need for energy will be paramount.

So it is with Deep Appreciation and interest, I Heartily endorse this project.

Sincerely

Marilyn Nielsen

P.S.

My Husband worked many years for Broughton lumber co and knew first hand their planning for the future.

COMMENT LETTER 223

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100039 - Kapp

After reviewing the draft EIS on the Whistling Ridge project I see no good reason for this project not to go forward. I live less than 2 miles from the proposed project and see no difficulty living near this project. This project will provide much needed jobs for the area and help to increase the tax base for the county.

COMMENT LETTER 224

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100040 - unknown commenter

After reviewing the EID I find it exceeding the requirements for this project. I support this project and see no environmental impacts that should delay it from advancing. I have used this area for recreation and while loosing this opportunity because of this project I still support the project. I do think this project is on the conservative side and should have been expanded.

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100046 - Andruss

Please do not put the wind turbines on Whistling Ridge. White Salmon and Hood River are known for the famed double mt. views. All of our property values will drop when the area becomes known for its multi-turbine views. We need wind power but not in such a beautiful place. The turbine mess out east is bad enough. I am always thankful when I get west of all those blinking lights. It is enough to ruin the eastern gorge with these industrial giants. I don't know how many turbines are out there but adding another 50 turbines to that mess won't make much difference now. To put up 50 turbines on Whistling ridge would blight the whole area. This is a world class scenic area and should be preserved as that. The project west of the Dalles has been canceled and the middle mt. project south of Hood River has been stopped. If we would have known that Whistling Ridge was to become an industrial wind factory we never would have bought property in Mill A. Common sense tells us this is a bad idea and should never be put in. I have been to meetings and listened to the talk about how safe for birds these mills are. The native americans told us that they could not imagine how a bird could fly into these blades. About 2 weeks later, front page of the Oregonian, Golden eagle killed by wind turbines at Goodnoe Hills. How many Golden Eagles are there in the gorge ? At least one is dead. We were told that up to 7000 bats would be killed if the Whistling Ridge project goes in. How many hawks and eagles will die because of this? What are the long term health effects? I have been told that 750 gallons of oil a year will be atomized in each of the turbines. That does not sound like clean energy. Putting these turbines on mountain tops has not been studied thoroughly so we really don't know what the impact will be. Many peaple are affected by the vibration and sound of the turbines. Again to put them so close to peaple and towns seems short sighted at best. To conclude I would say don't put the proposed Whistling Ridge tubines in as it is the wrong place to put them. Install them out east where there is less scenic beauty and already lots of turbines and more wind to turn them. Sincerely, Steve Andruss Mill A, WA

COMMENT LETTER 226

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100050 - Carroll

In regards to the whistling ridge wind farm proposal. I have to say that it is a poor location choice for a turbine farm for these reasons. 1. With-in the view corridor of a sensitive NATIONAL SCENIC AREA!!! ...Bad choice for people, national pride and the wind turbine industry. 2. WIND TURBULENCE, the whistling ridge is right in the wind venturie of the crest of the Cascade Mountains and the Columbia River gorge. Making one of the windiest spots in North America with very gusty turbulent conditions. ...Bad for big turbine efficiency and longevity, 3. WIND SHEAR, the Steep complex varied terrain (especially to the west) from the whistling ridge site accompanied by the Gusty Nature of the westerly Gorge winds will impair the turbine balance. ...Bad for turbine safety 4. This site is driven by Greed and not quality of location for wind turbines. ...Bad for the future of wind farming and turbine acceptance Please don't get me wrong, as I support wind farms and their development and was involved with a small wind turbine company in the late 70's and have witnessed the struggles that wind turbine development has faced. When I moved to the Gorge in 1984 there was a large Boeing proto type turbine in the Columbia hills, I visited often and spoke with the engineers. They were hopeful for this 120' span turbine but pointed out that the wind shear and turbulence was a huge factor in the placement of the turbine and it had to be taken down. This turbine was the prototype for all the turbines that are now being installed in the appropriate locations of the gently sweeping eastern basin of the Columbia River. Where topography and wind quality have created a rush of wind farms that are successful. A very positive point for the industry, Please do not make the a mistake of placing turbines in inappropriate locations as it will hurt the wind industry as well as disfigure a National treasure the Columbia River Gorge. Thank You for the opportunity to comment Jay Carroll

COMMENT LETTER 227

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100051 - Thurneyssen

I am a student in the Columbia Gorge Community College - Renewable Energy Technology program, and I support the Whistling Ridge Energy Project. We do not have time to waste in repairing our environment after abusing it for so long. This is a big picture issue that extends beyond the view from the backyard, but still creates local jobs. Let the wind turbines be a sign of progress in our area.

COMMENT LETTER 228

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100052 - Wageman

I do not support or agree with this energy project. I want no new wind generators to be placed in Washington State.

COMMENT LETTER 229

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100056 - Henley

I wanted to take the time to comment about this project. I think that the people objecting to this project must be the few people that have steady, good paying, dependable jobs--or are retired and don't care whether anyone else is able to feed their family or not. This county has more than their share of poverty level or lower incomes. What this county needs is more decent jobs, the wind energy industry is the only industry I see wanting to build here. By building here they are providing much needed jobs for this depressed community. We as a community should be rolling out the red carpet to them! I would like to stay in this community, but unless more jobs become available, because I am not independently wealthy, will have to look elsewhere to live. The people opposing this industry, only have their own interest in mind, and as long as they have jobs, wealth or a rich Daddy, don't care that a large portion of their neighbors are going hungry. I am looking at early retirement because of these factors. I want my children and grandchildren to be able to stay living in their homes, if they want. If they do move away, let it be because of other factors, not because there is no way to make a living here. Besides, these ignorant people are completely overlooking the fact that in forty years, we are going to be out of fossil fuel and are running out of time to generate alternative energy. Do they think this is going to happen without impacting anyone? They are all for cleaner, alternative energy--as long as it doesn't disturb the status quo, or cost them any money, but change for the better is always an adjustment, and we simply don't like to be disturbed. Alternative energy is here to stay, because we have no choice, we are running out of resources, so they might as well embrace these changes, they are here to stay!

COMMENT LETTER 230

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100057 - Tyler

While the Whistling Ridge Wind Project proponents deserve credit for responding thoughtfully to some of the previous objections to their earlier proposals, the revised proposal remains of great concern. If allowed the proposed wind mills will still seriously impact the beauty of the Gorge Scenic Area. As presently proposed viewers from numerous locations including parts of the cities of of White Salmon, Underwood, and Hood River, as well as the Columbia River itself will have their views of the Gorge defaced by 425 foot towers of steel, rotating blades and flashing strobe lights. There are few areas in the world with as much natural beauty as we now have in this part of the Gorge. We sould not sell it away. Granted our Nation needs alternative souces of energy and Skamania County needs new sources of revenue. But there are many less scenic areas of Washington, Oregon and the entire country which could also contain our windmills. Some things should not be traded for money. Related Concerns: 1. A first Gorge Windmill project will set a precedent. Other proposals and very likely other windmill farms will follow. New companies (for example a conglormerate such as General Electric) will be much less concerned about the welfare of this area than our neighbors at SDS. 2. Wind farm derived tax revenues will not be the only economic consequence of a local wind farm. Probable negative consequencies include decreased property values, reduced appeal to future tourists and prospective new residents because of diminished attractiveness of the area and likely increased infrastructure costs associated with building and maintaining a windfarm (including road maintainance and additional fire protection). 3. Huge steel towers with massive concrete bases would be with us a very long time. The costs of removing an obsolete windmill would be substantial. But how long would a wind tower be useful? When I consider the dramatic and initially unforseeable changes in energy demand and modes of production over the past 150 yeara (Particularly the last last 50 or so) I am astounded. Who can predict whether 30, 50 or even 100 years from now massive 450 ft steel windmills will make any contribution to our energy needs? But if we allow them here we will be stuck with them and their various consequencies. Please put windmill farms in a more suitable location. John Tyler

COMMENT LETTER 231

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100060 - Usen

I am an environmental planner by training and profession with over twenty years of experience writing, managing and reviewing environmental impact statements prepared in compliance with the State and National Environmental Policy Act. For nearly as long, I have worked and played in an around the Columbia River Gorge and am protective of its unique and spectacular scenic, natural, cultural and recreational resources. The Columbia River Gorge is a unique and irreplaceable treasure that includes federal and privately owned land and provides important regional economic development opportunities. The National Scenic Area designation was a compromise that offers a high level of protection against the threats posed by incompatible development in Special Management Areas, less protection and greater recognition of economic needs in General Management Areas and no regulation of activities in Urban Exempt Areas or lands outside of the Scenic Area boundaries. Interestingly, the Act provides these restrictions on land use but not against air pollution generated upwind that dims the Gorge's spectacular views on smoggy and hazy days. Our planet Earth is likewise a unique and irreplaceable treasure, just on a larger scale. It goes without saying that the scale of the numerous threats to our global environment is proportionately larger and more significant than those facing the Gorge. Of the many threats facing our planet, none are as grave or as irreversible as climate change. The only way to reduce the impacts of this global catastrophe is to drastically reduce our emissions of CO2 and other Greenhouse Gasses (GHGs). Realistically, this means optimizing every feasible opportunity to generate energy from non-polluting renewable sources, and there is no source less polluting or more renewable than the wind. Unfortunately, commercially viable wind farm locations like Whistling Ridge are extremely rare. For these reasons, I have reviewed the Whistling Ridge DEIS hoping to evaluate for myself how a special place I cherish would be impacted by the demands of power production for our future, estimated by the Northwest Power and Conservation Council to grow 1.2% annually for the next 20 years. Nearly all the impacts addressed by most EISs that I've worked on or reviewed are adverse to the environment. What makes this DEIS notable is the section on Avoided Emissions on page 3-20. According to this section: "Project operation would avoid the use of fossil fuel to meet the energy needs of the region. The project's annual electricity production is estimated at 197,000-megawatt hours (MWh). This energy is equivalent to 114,000 barrels of crude oil or 654 million cubic feet of natural gas." According to the U.S. Energy Information Administration, 197,000 MWh is roughly equivalent to the annual energy consumption of close to 18,000 homes. That's a huge amount of energy to be generated entirely by renewable, non-polluting sources. Perhaps even more significant is the annual displacement of 131,466 tons of the GHG Carbon Dioxide and 155 tons of the pollutant Sulfur Dioxide (Table 3.2-1) that would typically result from generating this quantity of electricity, benefitting both the smog-threatened Scenic Area and the GHG-threatened global climate. Whistling Ridge is outside the delineated boundary of the National Scenic Area and totally exempt from its restrictions but due to the scale and proximity of the proposed turbines to the boundary, the project applicant has not ignored evaluation of aesthetic and other impacts from within the National Scenic Area. The

Visual Resources section (3.9) consists of what appears to be a thorough and objective analysis of relevant impacts. I found no reason to doubt the completeness of the data or the validity of the methodology or findings. It is worth noting that the analysis rated no visual impacts as “High”. Rather, most were rated moderate or low and only one, Viento State Park rated up to “Moderate to High”. The DEIS’s evaluation of viewer sensitivity states on Page 3-171: “When considering the distance of the project from this viewpoint (greater than 5 miles), the portion of the project that is visible from the viewpoint, the viewer types (recreational), and the scenic quality rating, the level of sensitivity was rated as moderate to high.” This is the worst visual impact of this project documented by the DEIS thus it is reasonable to conclude that scenic resources of the National Scenic Area would not be compromised by the proposed action. Hidden behind Underwood Mountain from both the vast majority of the Scenic Area and view from local residents, yet accessible to wind and existing transmission lines, Whistling Ridge appears to be an ideal site for wind turbines. It is the Lead Agency’s responsibility under the State Environmental Policy Act to fully consider the environmental impacts of the Proposed Action. As Lead Agencies, EFSEC and BPA need to weigh the proposal’s limited environmental impacts against its relevant and consequential environmental benefits. Of the many EISs I’ve reviewed, I cannot think of a clearer example of where the significant positive regional and global environmental consequences outweigh the negligible, local adverse impacts.

COMMENT LETTER 232

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100061 - Ward

I support the Whistling Ridge Energy Project. I think people will get used to seeing the wind turbines. We need all forms of energy generation and this project is just one piece of that energy needs. Norman Ward Carson, Washington

COMMENT LETTER 233

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100062 - Freidman

Hello. This is Paula Freidman. I'm calling to comment on the Whistling Ridge Energy Project along the Skamania and Klickitat county line. I am VERY opposed to putting a wind turbine project there. The wildlife effects would be disastrous. The effects on human habitation, which is fairly close, would be for the persons living nearby, very, very bad and of course this is right in line of sight ot the Columbia Gorge Highway, the national scenic area. So this is not a satisfactory project. I'm obviously not in the state of Washington, but in the area that would be impacted across the river more or less. We've had to fight this kind of project. This is the Cascades, you know. This is not some kind of away from people and away from lots of wildlife kind of area. And, of course, there's the little matter of the snowy owls. So this is not a good area for this project. Thank you.

COMMENT LETTER 234

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100063 - Ward

I support the Whistling Ridge Energy Project. This project contributes to our country's energy independence and county's economy. I appreciate the fact that SDS Lumber is a local sponsor rather than an outfit that does not live or work in the Columbia River Gorge.

BONNEVILLE POWER ADMINISTRATION

COMMENT LETTER 235

Proposed Whistling Ridge Energy Project
Draft Environmental Impact Statement

WRE 100064

1. I have the following comments about the Draft EIS for the Whistling Ridge Energy Project:

I very much support the success of this project because our schools, and Skamania County really need it. I live in Underwood as did my Father, and his Father since 1903. I believe most of the people in the local area know this project will be good for our community.

The Whistling Ridge Energy Project does not breech the boundries of the Columbia River National Scenic Area, as the so called Friends of the Gorge would seem to want you to believe. They also were involved when the boundries of the NSA were set, but that was apparently a stepping stone for further advances against the survival of our local government. Now they are trying to incite the people, saying the project is in a avian migration path. This kind of mis-information can only further prolong the financial help this project can bring to our community.

Sincerely

James F. Ziegler

RECEIVED
JUL 19, 2010

Please put me on your project mailing list. (Note: You are already on the mailing list if you have received mailed notices.)

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Please mail your comments by July 19, 2010, to:
BPA Public Relations, DKC-7,
P.O. Box 14428 Portland, OR 97293-4428

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100065 - pace

The analysis of economic impacts of the project is very weak and uninformative. The project will have substantial benefits. These are susceptible to quantification. The analysis does not do the project justice in this respect. The interconnection of this project (and other wind resources) is problematic. Bonneville has not analyzed the environmental and social impacts of integrating wind. It also has not considered the impacts of BPA operations on designated critical habitat for ESA. For this reason, the interconnection aspects of the project should be deferred until Bonneville complies with law. The facility siting aspects, however, should proceed. As a general comment, Bonneville is not above the law. It cannot continue to pretend that the Administrator has discretion to violate the law. The law requires that you assess the environmental and socio-economic impacts of Bonneville's activities. The Endangered Species Act and Magnuson-Stephens Act require such consultation. It is irresponsible for Bonneville to continue to develop resources and plan transmission upgrades without considering these factors.

COMMENT LETTER 237

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100069 - Prothero

Re:Whistling Ridge Energy Project I am a summer resident of White Salmon, near Northwestern Lake. I have visited wind farm sites to the East, in the Gorge, and have listened to the sound levels at various distances. I have also visited the farms at night and noted the impact of the flashing red lights on top of the windmills. I am in favor of wind power and applaud its development in relatively sparsely populated areas to the East. My observations lead me to believe that noise levels at distances of a mile or more will most likely not be noticeable. However, the visual impact of the large array of flashing red lights will create a disturbing visual impact when directly viewed at night, and may reflect off low clouds, when present, and seriously affect the darkness of the night sky. Direct observations of the red lights on wind farms in Washington, from the Oregon side, creates a very distracting and potentially disturbing effect on the darkness of the environment. After a good deal of thought about trade-offs between impact to local residents, the need for renewable energy, and the availability of sites in relatively unpopulated areas, I have concluded that the project is incompatible with the proposed site. It will affect many residents in the Gorge, which is a national scenic area. Other sites to the east exist. I do not believe the that the local tourism and local residents deserve this impact. Another impact may be on property values, which would result in a decrease of income from this source, to the county. Thanks for accepting my comments.

COMMENT LETTER 238

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100071 - Canada/BestVibes

I just wanted to say that it sounds great and I am glad to see that there are companies looking to the future for renewable energy sources!

COMMENT LETTER 239

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100072 - Penswick

I am interested in seeing this Whistling Ridge Energy Project go forward. Protecting the Columbia Gorge Scenic act is also very important, but we need to promote renewable energy sources when the opportunity presents itself. I feel this proposed site will project a low impact on our Gorge image. It's important to look at the wider scope of this project and the potential benefits it can bring to this area.

COMMENT LETTER 240

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100073 - Jackson

I support developing alternative energy sources, including in some cases, wind, but I oppose this project.

It would destroy important wildlife habitat, including for the northern spotted owl. It would cover more than 1,000 acres of land in an area that is prized as beautiful, wild recreation land, where people in Oregon and Washington go to get away from "civilization" and the city. This project would ruin the beautiful view in the area. I support alternative energy projects that are developed in areas with zero or very minimal impact on the native wildlife and forest; that do not decrease the liveability of the area; and that are in the best interests of all citizens, not a company that is trying to profit. Such projects should be"owned" and overseen by regional and/or federal government bodies and fully reviewed for environmental soundness before they are implemented. Thank you.

BONNEVILLE POWER ADMINISTRATION WRE100074

COMMENT LETTER 241

Proposed Whistling Ridge Energy Project
Draft Environmental Impact Statement

1. I have the following comments about the Draft EIS for the Whistling Ridge Energy Project:

Please see attached

Please put me on your project mailing list. (Note: You are already on the mailing list if you have received mailed notices.)

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Please mail your comments by July 19, 2010, to:
BPA Public Relations, DKC-7,
P.O. Box 14428 Portland, OR 97293-4428

COMMENT

RECEIVED
AUG 3 2010

Subject : Whistling Ridge Energy Project Draft EIS

While the Whistling Ridge Wind Project proponents deserve credit for responding thoughtfully to some of the previous objections to their earlier proposals, the revised proposal remains of great concern. If allowed the proposed wind mills will still seriously impact the beauty of the Gorge Scenic Area. As presently proposed viewers from numerous locations including parts of the cities of White Salmon, Underwood, and Hood River, as well as the Columbia River itself will have their views of the Gorge defaced by 425 foot towers of steel, rotating blades and flashing strobe lights.

There are few areas in the world with as much natural beauty as we now have in this part of the Gorge. We should not sell it away. Granted our Nation needs alternative sources of energy and Skamania County needs new sources of revenue. But there are many less scenic areas of Washington, Oregon and the entire country which could also contain our windmills. Some things should not be traded for money.

Related Concerns:

1. A first Gorge Windmill project will set a precedent. Other proposals and very likely other windmill farms will follow. New companies (for example a conglomerate such as General Electric) will be much less concerned about the welfare of this area than our neighbors at SDS.

2. Wind farm derived tax revenues will not be the only economic consequence of a local wind farm. Probable negative consequences include decreased property values, reduced appeal to future tourists and prospective new residents because of diminished attractiveness of the area and likely increased infrastructure costs associated with building and maintaining a wind farm (including road maintenance and additional fire protection).

3. Huge steel towers with massive concrete bases would be with us a very long time. The costs of removing an obsolete windmill would be substantial. But how long would a wind tower be useful?

When I consider the dramatic and initially unforeseeable changes in energy demand and modes of production over the past 150 years (Particularly the last 50 or so) I am astounded. Who can predict whether 100, 50 or even 30 years from now massive 425 ft steel windmills will make any contribution to our energy needs?

But if we allow them here we will be stuck with them and their various consequences.

Please do not introduce wind farms into the Gorge Scenic Area. Encourage the Whistling Ridge proponents to relocate their project to a suitable site.

John Tyler

COMMENT LETTER 242

Friends of the Historic Columbia River Highway

[redacted]

http://www.hcrh.org

RECEIVED
AUG 3, 2010

Washington Energy Facility
Site Evaluation Council
905 Plum Street SE
Olympia, WA 98504-3172

BPA
Public Affairs Office – DKE-7
P.O. Box 14428
Portland, OR 97293-4428

RE: Whistling Ridge Energy Project DEIS

Dear Ladies and Gentlemen,

The Friends of the Historic Columbia River Highway has sincere and strong concerns about the proposed Whistling Ridge Energy Project's potential impacts on the Historic Columbia River Highway, a district listed in the National Register of Historic Places.

The Historic Columbia River Highway (HCRH) is a linear scenic and historic resource in Oregon, extending from Troutdale to The Dalles. All of the HCRH is a Key Viewing Area within the Columbia River Gorge National Scenic Area (CRGNSA). Portions of the HCRH that are a trail are designated as a National Recreational Trail. Portions of the HCRH are closer to the proposed project than the sites chosen for visual resource analysis. In particular, Mitchell Point is due south of the proposed project and within the Special Management Area of the CRGNSA. There is an existing viewpoint/overlook within the Oregon Parks and Recreation Department (OPRD) property at Mitchell Point, including an interpretive sign at the edge of the cliff overlooking the Columbia River. See photo.

Mitchell Point was the site of the famous Mitchell Point Tunnel (also know as the Tunnel of Many Vistas because of its five "windows" overlooking the Columbia River) on the Columbia River Highway (see photos). While the original tunnel is gone, planning efforts since 1987 have looked at ways to reconnect the HCRH in this area. In 2008 the Friends of the Historic Columbia River Highway financed an engineering feasibility study that concluded that it is feasible to construct a new tunnel at this site, which could have "windows" at the former location of the viaduct. This proposal is included in the Mile Post 2016 Reconnection Projects, the most recent planning document published (see attachments). In addition, OPRD is currently developing a project to enhance the existing viewpoint.

The Mitchell Point overlook is even more visually sensitive than Interstate 84, both because it is higher in elevation and because it is a place where people stop and get out of their cars to take photos. It is closer to the proposed project than Viento State Park, Koberg Beach State Park and the single location on the Hood River to Mosier section of the Historic Columbia River Highway

State Trail that were analyzed. This site must be analyzed for visual impact from the proposed project.

When the highway was constructed in 1913-1922 Samuel C. Lancaster wrote: "our first business was to find the beauty spots, or those points where the most beautiful things along the line might be seen in the best advantage, and if possible to locate the road in such a way as to reach them." This was accomplished by directing curves to draw attention to dramatic viewsheds and design features that enhance the appreciation of dramatic scenic landscapes. These design techniques are a critical component of the historic value of the Historic Highway, the first scenic highway in the country. Harming the views from these viewing locations directly undermines the historic integrity of this nationally important historic resource. The view from Mitchell Point in particular highlights the important relationship between highway design and maximizing appreciation of scenic landscapes. The original Tunnel of Many Vistas provided enhanced views of the Columbia River and the geologic features across the river on Underwood Bluff. The recreated tunnel will also highlight similar views. The proposed development would directly harm these views.

As evidenced by the attached photos and the design features that highlight views from the "Tunnel of Many Vistas" underscore the views' significance to the highway designers. The significance of this view was further confirmed when the Management Plan for the CRGNSA was adopted in 1991. The Underwood Bluff was given an Open Space zoning designation and a Gorge Walls, Canyonlands, and Wildlands landscape setting designation. Both designations were adopted in part in response to scenic resource inventories that established visually quality objectives. The DEIS fails to acknowledge the scenic resource inventory or how the proposed development would impact this view. The development would include enormous industrial structures with moving parts and flashing lights that would break the sky-line of this view. Attention would be drawn away from the historic view and be focused on modern industrial development. This would cause significant adverse effects to the views.

While the most severe impacts would occur to views from the HCRH at Mitchell Point, significant adverse impacts to views from miles of the HCRH would occur. The DEIS must be revised to accurately reflect the impacts to the length of the HCRH. The single simulation of a view from the Mosier to Hood River section of the HCRH State Trail (Viewpoint 19) is both misleading in its presentation and incomplete. There is no analysis of impacts to the view corridor. Notably, this section of the HCRH are part of a separate multi-agency restoration project that reconnected and restored the HCRH for public enjoyment. Millions of dollars were spent to restore this resource so the public could enjoy pristine and historic views. The DEIS fails to take this context into account.

In sum the DEIS fails to adequately analyze the likely impacts to views from the Historic Columbia River Highway. Because the impacts were not adequately addressed, appropriate alternatives were not analyzed and appropriate avoidance and mitigation measures were not considered.

Friends of the Historic Columbia River Highway encourage EFSEC and the BPA to revise the DEIS to actually reflect the likely impacts of the proposed development on the Historic

Columbia River Highway. The revised DEIS must include alternatives that would not include any turbines within viewsheds from the HCRH. At the least, the agencies must consider an alternative that would avoid impacts viewsheds from important viewpoints such as Mitchell Point.

Thank you for the opportunity to comment on this DEIS.

Sincerely,

Jeanette B. Kloos
President

View from Mitchell Point – 2010

Historic Views of Mitchell Point

Segment 8 – Mitchell Point Tunnel

At this location, a tunnel originally connected the two intact historic highway segments on either side of Mitchell Point. The "Tunnel of Many Vistas" was 390 feet long and had five adits, or "windows," with magnificent views of the scenic Columbia River. The tunnel was 18 feet wide and 19 feet high at the crown. A viaduct was used to access the tunnel's west portal, and a cut into the hillside accessed the west end of this span. The state closed the old highway route through the Mitchell Point Tunnel in 1953 because of increased vehicle size and rockfall hazards. The tunnel and much of the approach route to the west, including the viaduct, were removed when the state removed the hillside to make room for full build-out of Interstate 84. The only remnants of the tunnel are narrow ledges at the west and east approaches. These benched areas are located about 200 feet above Interstate 84 and currently used as rockfall catchment areas in conjunction with other catchments adjacent to Interstate 84 below.

Reconstruction of Mitchell Point Tunnel would not only provide a way through Mitchell Point but also provide future trail users and visitors a unique way to experience the historic highway and Columbia River Gorge. In spring 2008, the Friends of the Historic Columbia River Highway contracted with GRI, geotechnical engineers, to prepare a geotechnical feasibility study for a new tunnel through Mitchell Point.

Their report envisions a tunnel that connects the two old highway segments east and west of Mitchell Point near the original grade of the historic highway. With a tunnel width and height of 18 feet and length of about 1,200 feet. Tunnel report includes three to five adits (windows) from the main tunnel to the cliff face to the north to provide viewing areas and allow for natural light. The west portal is located at the existing rock outcrop near the northeast corner of the parking area. The east portal requires a cut in soil and decomposed rock before tunneling can begin.

Photo 8A : *Oregon Parks and Recreation Department recently received funding to enhance the parking lot and interpretive opportunities at Mitchell Point, a scenic, yet often overlooked wayside and State Park.*

Photo 8B : *View from the west side of Mitchell Point looking northwest at a striking view of the Columbia River Gorge.*

Photo 8C: *View from the east side of Mitchell Point looking northwest towards the Columbia River. Remnants of the historic highway are visible in the foreground.*

SITE PLAN A

Trail Segment Highlights:

- A tunnel would become a landmark, a monument, and a tourist attraction. This is the most cost effective way around Mitchell Point (Photo 8C).
- OPRD recently received funding through Forest Highway Enhancement Funds to redesign and enhance the parking lot at Mitchell Point (Site Plan A and Photo 8A).
- Most visually subordinate of the all options to get around Mitchell Point.
- Site is accessible to eastbound I-84 motorists.
- Incredible Columbia River Gorge views (Photo 8B)

Segment 8 – Preliminary Cost Estimate

Station	Item	Cost
0+00 to 12+00	1200LF Tunnel with 3-5 Side Adits (Per GRI Geotechnical Evaluation)	$ 5,654,000
0+00 to 12+00	Trail (3" AC x 12 wide, 10"CR Base X 16')	36,000
0+00 to 12+00	Lighting (Allowance)	150,000
0+00	West Portal (For Rockfall Protection)	90,000
N/A	Traffic Control on I-84 (Allowance)	100,000
	Raw Construction	6,030,000
	Engineering & Permits (20%)	1,206,000
	Construction Engineering (15%)	904,500
	Sub Total	8,140,500
	Contingency @ 40%	3,256,200
	Estimated Project Cost (2008)	11,396,700
	Estimated Inflation (2008-10)	1,139,670
	Project Cost Estimate (2010)	**$ 12,536,370**

Please Note: *Not all stations shown in the Preliminary Cost Estimate tables are shown on the segment Feasibility Maps.*

Looking south at a view of Mitchell Point and "The Tunnel of Many Vistas" from the Columbia River, c. 1920s.

HCRH Reconnection Strategy - Segment 8
Mitchell Point Tunnel

WRE100077

BONNEVILLE POWER ADMINISTRATION

COMMENT LETTER 243

RECEIVED
AUG 9 2010

Proposed Whistling Ridge Energy Project
Draft Environmental Impact Statement

1. I have the following comments about the Draft EIS for the Whistling Ridge Energy Project:

Our home is located within sight and sound of the Whistling Ridge Project and we absolutely agree wind and solar time has come.

Opponents, fearful of the terrible "noise" probably don't even notice the "rumble" of the trains at the bottom of Underwood mountain. As with many daily sounds, it is something to which we can become accustom.

Technology has given us a chance to use the sun and the wind supplied to us each and every day.

Our family approves the project plan and we commend the people with the courage to fight for the Whistling Ridge project

Russ and LaDonna Pollard
Underwood

COMMENT LETTER 244

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100078 - Smith

I am in opposition of the Whistling Ridge Energy Project. I vote the proposed project is denied. I will be contacting the Washington State Energy Facility Site Evaluation Council.

COMMENT LETTER 245

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100079 - Dye

I would like express my disapproval of the Whistling Ridge Energy Project. The project is inappropriate in that it addresses only the fiduciary interests of a local company and not overall needs of the County, it's residents or the Nation. In a time of rapidly decreasing forested areas in the world and climate change removing forest forever, i.e., 9 feet of concrete to support windmills, destroying watershed, creating lanes to move power with towers, destroying wildlife habitat, makes little sense. From an energy standpoint Eastern Oregon has thousands of square miles of useful high desert county that would be more useful. It appears that there is a stall on the April 2009 Wind Power Guidelines so that federal subsidies may be taken advantage of by proprietary interests. This also appears to be stalled so that there would be fewer costs for mitigation. Where is the oversight? The Gorge Commission appears to have been influenced by special interests.

COMMENT LETTER 246

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100081 - Bushman, comment made by telephone.

Mr. Bushman phoned on 8/25 to register his opposition to the Whistling Ridge wind farm that is being proposed. He is not opposed to alternate means of energy such as wind, but he does not want it in the scenic area of the gorge.

COMMENT LETTER 247

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100082 - Bushman, comment made by telephone.

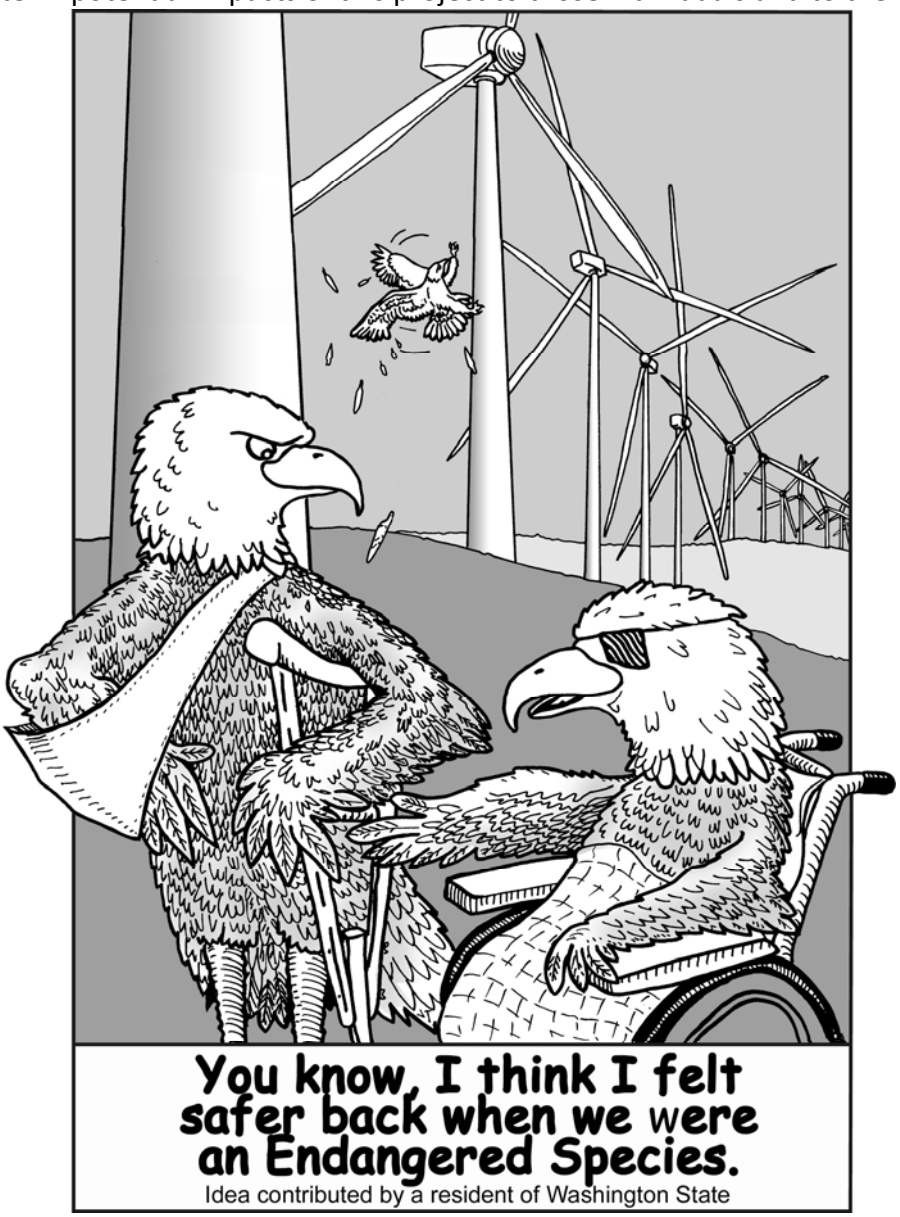
Laura Bushman phoned the comment line on 8/25 to register her oppostion of the wind farms that is being proposed in the gorge (Whistling Ridge). Our area has this beautiful scenic area and she doesn't understand why people want to ruin it by adding windmills. Her and her husband were over at friends the other evening, and they had the perfect view of the river and the gorge. It was absolutely beautiful! If this wind farm has to be built (which she is opposed to), it should be built on the other side of the ridge so that it can't be seen. She knows this wind farm proposed is actually outside of the scenic corridor, but it still ruins the views of the gorge.

COMMENT LETTER 248

Vicki Pryse
Skamania County Resident
Underwood, WA
2 miles from Proposed WRE Project

Re: Comment regarding WRE DEIS

Bald Eagles are observed flying overhead in our area, including the proposed Whistling Ridge project site. The central Columbia River Gorge and its tributaries are becoming havens for the recently delisted Bald Eagle. This area in the central gorge is increasingly utilized by overwintering eagles from northern regions. Some eagles have found the area to be suitable for nesting and rearing young. The extent of use of the area, and the long term potential impacts of this project to those individuals and to the breeding and overwintering eagle population as a whole is not enumerated or discussed in the DEIS.



Before the full impacts of the WRE project can be assessed by the decision makers, it is imperative that the a careful and honest analysis is performed. Obviously, the Applicant was not able to perform this task, so please see that qualified experts are involved in this issue. The future of the Bald Eagle, once on the brink of extinction is dependent on this.

The Bald Eagle is our nations symbol. Are we going to put at risk our nations symbol and replace it with a symbol of how the public was duped to pay for a sprawling, inefficient, unreliable and environmentally damaging power plant?

I have included the attached cartoon for emphasis, which is freely distributable from www.windtoons.com.

Thank you for your diligent review of this poorly placed renewable energy project.

COMMENT LETTER 249

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100086 - Gresh

I am a resident of Oregon and live in Portland but my wife and I own a secon home in Mill A, Washington. It is my feeling that the assessment of directm indirect, and cumulative visual impacts caused by the project are inadequate. The methodology used was to evaluate the potential visual impacts from specific view points and that method does not account for the potential to the most common viewer of the Columbia River Gorge Natialal Scenic Area, thos that pass through and view the area as a whole, not the sum of its parts. I feel that this cumulative imapcts analysis should include the following future projects: Cascade Locks Tribal Casino Broughton Mill Redevelopment Both of these projects have been evaluated and have had more than enough analysis to include in the cumulative analysis. I feel this is particularly important because SDA Lumber is responsible for both the Broughton Mill development and the Whistling Ridge Energy project. While the CGNSA plan includes the allowances for economic development in addition to the preservation of the uniques scenic beauty of the Gorge, it is crucial that such projects as whistling Ridge include a thorough analysis of cumulaitve affects when such significant development projects threaten the scenic elements of the Gorge that warranted the creation of the NSA.

COMMENT LETTER 250

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100087 - Douglass

I am dead against the Whistling Ridge Energy Project. I can support wind energy projects but not with a location on the border of the National Scenic Area. The views from this protected region need to be protected also -- 400+ foot high turbines destroy part of what the Scenic Act stands to protect. These are not the views from a few local homes or a couple of small towns - these are the views of an entire region -- a protected region. Please do not degrade the Columbia River Gorge. I am also concerned about the environmental impacts on the area and wildlife.

Michelle, Kayce (UTC)

From: tood douglass [redacted]
Sent: Wednesday, August 25, 2010 9:42 PM
To: EFSEC (UTC)
Subject: NO to Whistling Ridge Project

Please accept my comments below regarding the Whistling RIdge Energy Project, also submitted to BPA.
Thank you,
Carol Douglass

I am dead against the Whistling Ridge Energy Project. I can support wind energy projects but not with a location on the border of the National Scenic Area.

The views from this protected region need to be protected also -- 400+ foot high turbines destroy part of what the Scenic Act stands to protect. These are not the views from a few local homes or a couple of small towns - these are the views of an entire region -- a protected region. Please do not degrade the Columbia River Gorge.

I am also concerned about the environmental impacts on the area and wildlife.

COMMENT LETTER 251

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100089 - London, comment made by telephone.

Ms. London phoned the Public Involvement extention on 8/26/10 at 7:05 am to voice her displeasure about the Whistling Ridge project. She said they should focus on another project. This would ruin the gorge -- and the view.

COMMENT LETTER 252

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100108 - Ransmeier, comment made by telephone.

Ms. Ransmeier called at 1:30 pm on 8/26/10. She said she agrees with the Friends of the Gorge that it is not a good idea to build the windfarm where proposed. She would like it denied as it will ruin the beauty of the gorge.

COMMENT LETTER 253

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100110 - Stege, comment made by telephone.

Mr. Stege called on the Public Involvement line on June 17. "I drive through the gorge quite often. I think wind power is a good thing, but not in the gorge because of the scenic area and could have impacts on wildlife and plants. That would degrade the scenic area. For this reqson this project should be denied."

COMMENT LETTER 254

Comments posted to BPA's Comment Website, www.bpa.gov/comment

WRE100111 - Roberge

I am totally opposed to it.

COMMENT LETTER 255

Comments posted to BPA's Comment Website, www.bpa.gov/comment

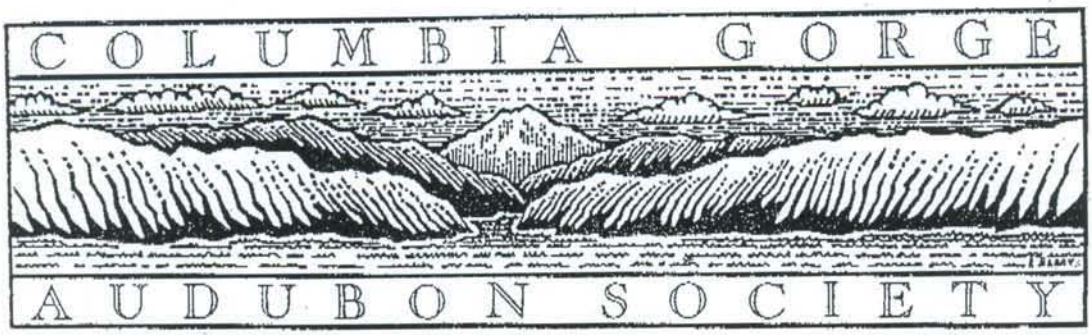
WRE100129 - Bryan

To those charged with making a decision on the proposed Wind turbine project on Whistling Ridge: We support wind energy projects, however: Not near houses Not where they are visible to the National Scenic area. Not in the middle of a forest where animals become endangered. Perhaps the Broughton Lumber Company would be able to trade the proposed site for one further removed from houses and the Gorge. Alison and John Bryan

INRE100139

COMMENT LETTER 256

1



BPA

August 26, 2010

Re: Public comment on the proposed Whistling Ridge Energy Project.

Columbia Gorge Audubon Society opposes this project.

The history of NW wind power offers very little to be proud of. The first question regulators should be asking is why wind power is being developed in the NW when most or all of the power is being sold in the SW? The history of SW wind power would raise a lot of red flags for NW wind power development, issues that are being ignored here. It seems we are doomed to repeat all of the mistakes that are now fairly well understood in the SW.

When wind power burned too many bridges in the SW and they decided to move into our region, and the Federal government warned them that they would be facing arrest and jail if they killed federally protected birds, and that they had to solve the bird problem before they would be allowed to develop in the NW. They did solve it, but not in a way that would save even one bird, instead they did an end run and solved the problem politically. Ever since then the regulatory agencies have been playing the "Go along, to get along" song to protect their budgets from cuts from above. As a result, wind power has been allowed to develop projects just about anywhere they want, no matter the consequences.

If things are so bad, where are the environmental groups? Why aren't they out protesting? Early on the wind power industry effectively dealt with the environmental groups. They rounded them up in a BPA round table discussion to generate mutually agreeable siting standards for wind power. This kept the environmental groups busy and made them feel like they were involved in the process while wind power developers where out securing sites for their projects. The round table talks ended with agreement on five voluntary siting criteria, all five of which were violated in the first proposed projects.

Another aspect of the wind industries plan was to bring in wind power promotional groups. These "environmental" groups gave the appearance of a divided environmental community on the issues of wind power.

The third method that the wind power industry used to control environmental groups has been to give (or deny) them money. The Bullitt Foundation has been the major source of grant money used to control groups in the NW. The Bullitt Foundation promotes wind power. When wind power was planning on moving into the Hood River Valley it was not coincidence that the Hood River Valley Residence Committee had just received a Bullitt grant for $17,000. That proved an effective grant. When The Friends of the Gorge protested wind power development overlooking the Columbia River Gorge they had their Bullitt grant pulled for the first time in years. National Audubon Society and Audubon Washington are major receivers of Bullitt grants, and we believe this has kept them from doing the one and only thing that Audubon could do that would effectively check wind power abuses, and that is to expose them in the media. We have pleaded with Audubon Washington to launch a media attack on wind power abuses, but they have ignored us. They know what would happen to their Bullitt grants if they were to take effective action against even the most abusive projects. Do not think that all is well, just because dozens of groups are not protesting Gorge wind power development. Most groups have been targeted and effectively muzzled.

Last year I attended an Underwood Community Council meeting because I read in the local news paper that the SDS wind power project proposed for the Underwood Mountain area was going to be discussed. A representative from SDS was there and there was an SDS wind power booster in the audience. The council was upset because they had not received proper public notice and the public hearing was to be held in Stevenson, 20 miles from the site, when the Underwood Hall was available and located in the community that would be impacted the most. The SDS representative and the booster in the audience did all they could to block effective council representation, including trying to block a letter in protest regarding the basic issues of public notification and moving the meeting to Underwood so locals could more easily participate. They also insisted that the council could not act until they contacted every community member and secured their approval of the protest letter or any other action. Interesting, they wanted every community member's approval on a motion, but they opposed holding the hearing in Underwood. Needless to say, requiring the approval of every citizen would bring any federal, state or county government to gridlock, but SDS tried to hold a local elected council to this ridiculous standard. This further illustrates how SDS seeks to control and manipulate all of the active parties, from the top to the bottom, that are considering the SDS proposal.

It was not that long ago when SDS proposed a major co-gen development for their mill. When they reached the public comment period for the proposal a member of the public discovered that the permit that they applied for was for a small mobile unit. The small mobile unit permit would have avoided major regulatory requirements. SDS immediately dropped their proposal. We seriously doubt that SDS or DOE could have gotten that far in the process without realizing that the wrong weaker permit was being applied for.

All of this provides context for this proposal. The context you are getting here is more relevant than the false context that tells you that NW wind power makes sense, that proper siting is being applied, that the regulatory agencies are on the ball, and that the groups that you would expect to be in opposition are holding back because they really believe that wind power is not a problem.

When new energy production is promoted you can take it as standard operating procedure that the need for energy will be over inflated. Studies are conducted to "prove" the inflated energy numbers. The nuclear industry did it when they promoted the infamous "WHOOPS!" nuclear development, and we believe that the wind industry and their boosters are doing the same thing. Over the last few years the Columbia River aluminum industry has closed its doors and around one third of Oregon and Washington's electrical energy has become available for other uses. The recent recession only gets deeper and deeper and this is bound to cause a reduction in energy use. These major impacts on NW energy use are virtually ignored. But they are real, and to a large extent this is why our transmission lines are flooded to capacity and most of the energy is going to the SW. This is why about a third of the wind machines are turned off at any one time. This is why many of them that are spinning are not even hooked up to transmission lines. All of this is ignored while you focus of hocus-pocus studies that inflate-create a huge imaginary need for power. You cannot serve the real interest of the people if you cannot keep your feet grounded in reality.

About this time these objections are usually dismissed with the argument that we must save the world from green house gasses. The problem is that wind power will not accomplish that. Because wind power only produces energy when the wind is blowing – and even then it produces variable energy – it must have 100% back-up by conventional or nuclear energy sources. In this way, wind power is in fact driving the need for gas (preferred source) electrical plants that produce a lot of green house gasses.

Wind energy is expensive. It costs about four times the cost of hydropower. The 100% back up will add to the costs. The new transmission lines necessary for transmitting wind power and the conversion to "smart" lines will add to the costs. Using wind power to pump water up behind huge earthen dams – as are planned on the Columbia Hills – so that it can be released and run through generators when transmission lines are open will add to the expenses of wind

power. In the end, wind power will be so expensive that rate payers will not be able to afford it. The excessive expenses associated with wind power, combined with recent revelations of wind power corruption, are opening the eyes of people all over the NW. What will happen to wind power, and the extensive infrastructure that is being built to support it, if the citizens of Oregon and Washington decide to vote out the requirement that energy providers must incorporate wind energy in their portfolio? You had better give a lot of thought to that question, because in all likelihood that is where we are headed.

How can wind power continue on as such a powerhouse if it is economically infeasible? The answer is that the suppliers and builders are taking their profits off of the front end. That is the only place in the process of wind power development that is economically viable. They receive the tax credits, they are protected by the warranties and they get paid while the projects are relatively new and in good shape. The builders realize that the front end is the only place to be on these projects. That is why they usually sell the project even as it is being built. They realize the dangers of long term commitment. This is why we doubt SDS's claim that they want to diversify their holdings. If SDS is as smart as we believe them to be, they will sell and collect a handy monthly payment until the buyer pays off the loan, and then SDS will continue receiving monthly payments for each machine on their property.

Wind power promoters like to denigrate the sites of their proposed projects, and the Whistling Ridge proposal is no different. The DEIS states the site is commercial forest lacking native plants. (I.9) Perhaps SDS shipped those trees in from some other bio-region, but we doubt it. In fact, it is likely that just about all the plants on the site are native, and that they serve as habitat for animals and birds.

The location of the site is significant. The site is on a ridgeline bordered to the east by the White Salmon Wild and Scenic River and to the south by the Columbia River Gorge National Scenic Area. These rivers and the ridgeline the project would be on are known areas frequented by raptors, including bald and golden eagles. Raptors are known to be susceptible to wind power blade strike because they are looking down for prey. Just up the ridge and to the north is DNR land that has been identified by the DNR as significant habitat for spotted owls. DNR recently "forgot" that fact and were forging an agreement with SDS that was to allow them to extend their wind power project onto those public lands. It seems the development on public lands was necessary to make the proposal on the SDS land economically viable. Then members of the public, including CGAS, reminded DNR of their commitment to the spotted owl, and the SDS project on DNR lands was dropped. We believe this to be yet another example of how this powerful corporation seeks to manipulate agencies.

Would the proposed Whistling ridge wind power project negatively impact the nearby spotted owl habitat on DNR lands? We believe it would. If the project was built of SDS lands, would

the fact that a project is up and running so close to the DNR spotted owl protection zone make that zone less desirable as critical habitat? We believe that argument could be made. Would the fact that SDS has already claimed an economic need for the DNR site, and the fact that infrastructure like transmission lines and roads would be close by encourage SDS to bid once more for the public lands site? We believe they would. Is this how important bird habitat is encroached upon or lost? Yes, this is exactly how it happens.

The bird studies we have reviewed over the years are typically faulty or the conclusions are the opposite of what the information actually suggests. This is not just our opinion, it is the opinion of Washington Department of Fish and Wildlife and the Fish and Wildlife Service, both of whom have repeatedly been extremely critical of the bird "studies" for wind power proposals. Some of those studies have recently come home to roost in Klickitat County immediately to the east of the proposed project site. WDFW recently placed the first monitor on an eagle and it was immediately killed by a wind machine to become the first (known) eagle to be killed by a wind machine in the NW. Quite a coincidence! Then an independent study was done to determine bird kills on a Klickitat County wind power project, and the result was that eight to sixteen times more birds were killed than predicted. Since bird kill projections are important to securing permits for projects, we believe this to the tip of the ice berg on deflated bird kill projections. We suggest that you increase the projected kills by eight to sixteen times. This means that most projects would not be allowed.

The DEIS summary emphasizes that no hazardous waste would be produced by the project. Actually there is a significant release of hazardous wastes my each machine. Lubricants run down the blades and are flung for quite a distance. Solvents and other cleaning materials are used to de-grease the tower and blades, and these hazardous wastes go right into the ground. When the first wind machines (the MOD-II's) were built on the Goodnoe Hills section of the Columbia Hills (and later removed due to engineering failure) Natives reported that they could no longer gather traditional herbs and roots on the site due to pollution by lubricants and solvents. While we have no authority to speak for Natives (nor would we attempt to do so), we do believe that we can report on what is public knowledge.

Proponents dismiss wind power noise, but we know that people do not like the noise. They may seem quiet to a casual listener passing by, but it is different if you live within the sound of the machines and must listen to them every day and every night. Sometimes they are noisier than other times, sometimes they can be very noisy, and as they age they can become extremely noisy. Industrial noise is significant in rural areas because people are used to hearing natural noises. When industrial noise is introduced the human ear goes right to it and experiences it as an annoyance. When industrial noise is heard in the country, where it is mostly unexpected, it is experienced as a 100% increase in noise. This fact is not reflected in

noise studies that tend to dismiss wind power noise as insignificant, and also to dismiss the impacts. It may be of interest to you that nearby Klickitat County had to raise the noise level allowed in rural areas twice before wind power was determined to be within allowed limits. To us, this suggests that noise is a genuine issue.

Washed out photographs and simulations of wind towers may lead you to conclude that the visual impact of wind power is insignificant. Once again, the studies do not reflect how the human mind actually works. First of all, the human eye is drawn to movement, and the wind tower blades are huge and moving. At night the blinking lights attract your attention. Then there is the problem of size. The human eye is attracted to size, especially on ridgelines. The photographs and simulations simply do not capture the actual human experience when these wind machines come into view. The studies diminish the impact where the actual experience is that the machines command your attention, even when you try to ignore them. It becomes difficult to see the natural environment when those big towers move and blink at you, and the natural environment is what most people living in the county are there to enjoy. It should be no surprise that rural people do not appreciate their county views turned into industrial zones, neither should it surprise us that proponent studies will seek to diminish the significance of this fact.

Wind power proponents dismiss the notion that wind power projects might decrease the value of people's properties. In fact, they claim that studies show that the value of your land does not decrease when wind power moves into your neighborhood. Perhaps if you are a large land owner and it is likely that you will be approached about having a wind farm on your property, the value of your land might not decrease. But if you own a smaller property that is or could become residential property, the value of your property is likely to diminish, especially if your property is view property, as most of the residential property within sight of this proposal is. In a discussion with a Klickitat County assessor we learned that they are having a difficult time estimating land values in areas where new wind power development has occurred because there have been no new sales in those areas. We have been told that at least one man let the county take his land – not because he could not pay the taxes – but because he could not sell his land and was tired of paying taxes on land that he could not sell. If you cannot sell your property for any price, how much is it worth? Can you really believe the notion that wind towers would not negatively impact residential properties within sight of wind power towers? We just do not believe that a reasonable person could come to that conclusion, unless you were paid to do so.

Proponents like to tout the long list of mitigation measures that they must comply with. After reviewing many such lists we have been hard pressed to discover how any of the mitigation measures will save even one bird. The hard fact is that mitigation is a fraud. There is no

mitigation for improperly sited wind power projects, and any project sited in or near the Gorge is an improperly sited project. The Gorge and the Cascades are major bird flyways, and projects here are bound to have major impacts, especially as cumulative affects set in, as we believe they already are. Also, we have noticed that mitigation measures are often worded in a manner that allows the proponent the choice of whether or not the mitigation measure will actually be implemented. And, we have noticed that proponents often ask that mitigation measures be quietly withdrawn once the permit is in hand, and very often that is exactly what happens.

Decommissioning of this project is a huge environmental issue and will involve a huge expense, and yet the DEIS contains no meaningful discussion about how this will actually occur. No plan is offered for project decommissioning, no commitments are made, let alone secured. How can the environmental impacts of "back end" project decommissioning be considered without a meaningful discussion about who will do what, and when? In fact, no environmental impacts of decommissioning can be considered without this information. We believe decommissioning is ignored because the proponent does not want to pay their fair share of decommissioning fees. Typically proponents "flip" (sell) their projects as soon as they can, but they retain legal right to the project until the buyers make their last payment. The proponents like to put off consideration of decommissioning plans until the buyer becomes the responsible party. This may be good for the proponent, but it is poor planning because it shifts decommissioning responsibilities to the back end of the project, where the profit margin is decreasing and the expenses are rising. If this is allowed to continue, it is very likely that the public will get stuck with the decommission expenses of thousands of NW wind power machines. This should not be allowed to occur. Bonding should be secured that will be sufficient to cover all of the decommissioning expenses and the bulk of the payments should be paid in the first half of the machines life, when the profits are the highest, and the expenses are the lowest.

If you still believe that the wildlife agencies will step in to prohibit significant and unnecessary loss of birds to NW wind power, then considers the following true account that demonstrates what is actually occurring. National Audubon Society has designated the Columbia Hills in Klickitat County an Important Bird Area. The Important Bird Area program is National Audubon's plan for saving critical bird habitat areas with proven significant bird populations. It is not easy to secure the IBA designation, the review process is strictly run by NAS bird scientists. Federal and State wildlife agencies have repeatedly warned the wind power industry away from developing on the Columbia Hills, but even though they know the significance of the area for birds these agencies are allowing border to border wind power development of the Columbia Hills Important Bird Area. The next project for the Columbia Hills would involve the creation of huge holding dams that would allow wind power to store energy during periods that transmission lines are full. We thought things could not get worse on the Hills, but these man-

made lakes would prove us wrong when they attract even more birds to their doom. The agencies are failing in their duties to protect huge areas of very significant habitat, and they know it. And the wind power industry knows that if they can develop in this IBA, they can develop just about anywhere. The much touted claim that proper siting is the key to green wind power is just another fraud.

BPA shares in the responsibility for the wind power fiasco we are creating. Early on Columbia Gorge Audubon Society, a representative from Audubon Washington and Native spokesmen met with BPA representatives, and we pleaded with them to plan for wind power development and to determine which areas would be suitable and which would not be suitable. But we were snubbed and it became clear that wind power development would be allowed to proceed without any environmental planning by BPA. Now we are reaping the whirlwind of that decision, and BPA just continues to allow the situation to get worse. BPA has responsibilities to assure that the power they transmit is coming from responsibly sited projects that are not unnecessarily killing significant numbers of birds. How can BPA claim that power from the Columbia Hills IBA is environmentally responsible power? They cannot. Federally protected birds are being killed, and BPA looks the other way.

We beg you to not add yet another bird killing wind energy "farm" to the thousands of machines already up. The only good that would come out of this is more money for a few people who have more money than they know what to do with; the damages and the costs would be equally distributed among the rest of us. It is time – past time really – to say no to yet another wind power project, and to place a moratorium on further wind power development until the environmental impacts of so many projects and machines can be properly considered.

Sincerely,

Dave Thies

Dave Thies, President

Columbia Gorge Audubon Society

[redacted]

USDA United States Department of Agriculture | Forest Service | Columbia River Gorge National Scenic Area
902 Wasco Ave., Suite 200
Hood River, OR 97031
541-308-1700
FAX 541-386-1916

RECEIVED
AUG 25 2010
ENERGY FACILITY SITE EVALUATION COUNCIL

COMMENT LETTER 257

File Code: 2380
Date: August 23, 2010

Stephen Posner
Energy Facility Site Manager
Washington EFSEC
905 Plum Street SE – Third Floor
Olympia, WA 98504-3172

Dear Mr. Posner:

Thank you for the opportunity to review the Draft environmental Impact Statement (DEIS) for the Whistling Ridge Energy Project.

The project has many positive features and will make a positive contribution to the region. The National Scenic Area supports renewable energy development and believes that the Whistling Ridge Energy Project will be enhanced with consideration given to the scenic values associated with the Columbia River Gorge National Scenic Area (CRGNSA).

As described in your analysis on Table 3.9.2 (Viewpoints 13 and 14) the Columbia River gorge has moderately high to high levels of visual quality. Visitors and residents within the gorge place a high value on scenic quality and viewer sensitivity is substantially higher than described in the DEIS. As such, I would ask that you consider potential scenic effects throughout project design and implementation. Considerations such as turbine placement, color and size through project design and implementation will help to ensure scenic quality, as viewed from within the CRGNSA, will be maintained and/or scenic modifications minimized.

Sincerely,

Daniel T. Harkenrider

DANIEL T. HARKENRIDER
Area Manager

COMMENT LETTER 258

Michelle, Kayce (UTC)

From: Addison Jacobs [redacted]
Sent: Friday, August 20, 2010 8:11 AM
To: EFSEC (UTC)
Subject: Wind Energy Letter from the Port of Vancouver
Attachments: Wind Energy Letter.pdf

To Whom It May Concern:

Please see attached letter in support of wind energy business. This is forwarded at the request of Jason Spadaro of the SDS Lumber Company.

[redacted]

Port of Vancouver USA

August 18, 2010

To Whom It May Concern:

The Port of Vancouver is an active participant in regional and national associations promoting alternative energy, particularly wind energy. We support alternative energy credit programs and state and national alternative energy standards. In addition, the port advocates for the expansion of the wind energy grid in the Pacific Northwest and nationwide.

Over the last five years wind energy cargoes have contributed to the diversification of cargoes at the Port of Vancouver, expanding overall revenues and stabilizing income through the tough economic times. Two large mobile harbor cranes acquired during this time have greatly enhanced the port's ability to attract and support the growth of the wind energy logistics trade. In 2009 alone the port handled 2,700 pieces of wind energy business, generating 55,897 labor hours.

Wind energy business means jobs and economic return for our community in southwest Washington. For this reason, the Port of Vancouver intends to continue its active role in the receipt and delivery of component parts for the wind energy business well into the future.

Sincerely,

Larry Paulson

Larry Paulson
Executive Director

[redacted]

COMMENT LETTER 259

Michelle, Kayce (UTC)

From: Amanda Hoey [redacted]
Sent: Thursday, August 19, 2010 10:32 AM
To: EFSEC (UTC)
Subject: Fwd: Whistling Ridge
Attachments: jason spadaro RE letter 0610.pdf

Attached is Mid-Columbia Economic Development District's letter regarding renewable energy projects. As requested, we are sending this along.

"Mid-Columbia Economic Development (MCEDD) supports the utilization of our renewable energy assets to diversify our economy and stabilize our economic base. We support development of wind, solar, biomass, geothermal, and other renewable energy projects in our region which are designed in a manner consistent with local regulations.

MCEDD has supported the creation of the Columbia Gorge Bi-State Renewable Energy Zone as a means to engage in a cross-jurisdiction, inter-agency, bi-state collaborative approach to renewable energy development. In establishing the Columbia Gorge Bi-State Renewable Energy Zone, we took into consideration a variety of factors, all linked by the regional economy. These include the renewable energy resource itself (wind, solar, hydro, geothermal, biofuels, and biomass), financial investment in those resources by renewable energy industry, existing transportation networks {roads, rail, river and air), high-speed telecommunications networks, education and workforce training capacity, public utilities, resident workforce, transmission capacity, industrial lands base, and quality of life. The economic benefits of renewable energy projects can provide a base for connecting all these components into a networked system that would generate familywage employment in a rural, traditionally depressed economy"

Amanda

--
Amanda Hoey
Executive Director
[redacted]

Mid-Columbia
MCEDD
ECONOMIC DEVELOPMENT DISTRICT

June 14, 2010

Jason Spadaro
[redacted]

Dear Jason,

Mid-Columbia Economic Development (MCEDD) supports the utilization of our renewable energy assets to diversify our economy and stabilize our economic base. We support development of wind, solar, biomass, geothermal, and other renewable energy projects in our region which are designed in a manner consistent with local regulations.

MCEDD has supported the creation of the Columbia Gorge Bi-State Renewable Energy Zone as a means to engage in a cross-jurisdiction, inter-agency, bi-state collaborative approach to renewable energy development. In establishing the Columbia Gorge Bi-State Renewable Energy Zone, we took into consideration a variety of factors, all linked by the regional economy. These include the renewable energy resource itself (wind, solar, hydro, geothermal, biofuels, and biomass), financial investment in those resources by renewable energy industry, existing transportation networks (roads, rail, river and air), high-speed telecommunications networks, education and workforce training capacity, public utilities, resident workforce, transmission capacity, industrial lands base, and quality of life. The economic benefits of renewable energy projects can provide a base for connecting all these components into a networked system that would generate family-wage employment in a rural, traditionally depressed economy.

Sincerely,

Amanda Hoey
Executive Director

[redacted]

COMMENT LETTER 260

LATE Agency Comment #10
Replaces Public Comment #541
At Submitters Request

State of Washington
Department of Fish and Wildlife

Mailing Address: 600 Capitol Way N, Olympia WA 98501-1091, (360) 902-2200, TDD (360) 902-2207
Main Office Location: Natural Resources Building, 1111 Washington Street SE, Olympia WA

September 17th, 2010

Stephan Posner
EFSEC
905 Plum Street SE
Olympia, Washington 98504-3172
efsec@commerce.wa.gov

SUBJECT: Whistling Ridge Energy Project Draft Environmental Impact Statement: EFSEC Application 2009-01

Dear Mr. Posner,

The Washington Department of Fish and Wildlife (WDFW) has reviewed the above-referenced documents and offer the following amended comments at this time. This letter replaces the previously submitted August 27th, letter from WDFW. Other comments may be offered as the project progresses.

WDFW has carefully reviewed the habitat evaluation prepared by the applicant. The Whistling Ridge Wind Resource Area (WRWRA) is a forested site managed for over 100 years. It is not in a natural or native coniferous forest condition. The pre-project assessment and avian/bat use surveys are consistent with standard protocols utilized throughout the U.S. and are consistent with the WDFW Wind Power Guidelines (WDFW 2009). Because the relationship between avian use and mortality has been reasonably consistent across other habitat types and locations, it is likely that the relationship between avian use and mortality would be similar to that evaluated in other projects. While no similar data exist for constructed wind energy projects in managed coniferous forest habitats that might help inform impact predictions for Whistling Ridge, as we previously confirmed in the attached letters, WDFW confirms that these data represent the best available science for predicting avian impacts at Whistling Ridge. Therefore, if the WRWRA is constructed, WDFW anticipates the opportunity to better understand the relationship between wind energy development in western coniferous forests and wildlife response.

WDFW would like to emphasize that fluctuations in raptor populations, as well as other avian species, may result in greater mortality than what is predicted in the *Final Report.* As a result, operational controls may be necessary to address avian mortality that exceeds predicted mortality.

In closing, WDFW would like to acknowledge that the applicant has submitted a preliminary mitigation plan that we are currently reviewing. This mitigation proposal was developed consistent with the WDFW Wind Power Guidelines at a 2:1 replacement ratio. The preliminary mitigation plan encompasses approximately 100 acres in Klickitat County 12 miles due east of the project site. The mitigation site is forested with Oregon White Oak with some Douglas fir and Ponderosa pine and shares a portion of its northern boundary with 40 acres of WDNR land and. This mitigation site provides habitat for several PHS entries including Western gray squirrels. Additionally, the site includes the fish-bearing Silva Creek, a tributary to the Klickitat River.

We look forward to working with the applicant as this project moves forward.

Sincerely,

Travis Nelson
Renewable Energy Section Manager

Talburt, Tammy (UTC)

Subject: FW: Whistling Ridge Amended Comments WDFW
Attachments: WR.SDS.DFW.9.17.10.pdf; DFW.DEIS.WR.COMMENT.1.19.10.pdf; DFW.CLARIFICATION.9.22.09.pdf

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From: Nelson, Travis W (DFW)
Sent: Friday, September 17, 2010 4:10 PM
To: Posner, Stephen (UTC)
Subject: RE: Whistling Ridge Amended Comments WDFW

Stephen,

Please see attached amended letter and previously submitted letters.

Travis Nelson
WDFW - Renewable Energy Policy
360.902.2390
Travis.Nelson@dfw.wa.gov

State of Washington
Department of Fish and Wildlife

Mailing Address: 2620 North Commercial Avenue (509) 543- 3319
Main Office Location: 2620 North Commercial Avenue – Pasco, WA 99301

MWR-01-10

January 19, 2010

Katy Chaney
URS Corporation
Century Square
1501 4th Avenue, Suite 1400
Seattle, WA 98101-1616

SUBJECT: Preliminary Draft Environmental Impact Statement (DEIS), Whistling Ridge Energy Project

Dear Ms. Chaney:

The Washington Department of Fish and Wildlife (WDFW) has reviewed the above reference document and offers the following comments at this time. Other comments may be offered as the project progresses.

Overall, the Preliminary DEIS is consistent with the 2009 WDFW Wind Power Guidelines, including early and regular consultation, as well as avian and bat studies, habitat characterization, and impact analysis.

WDFW is in agreement with the following excerpt from *Section 3.0 Affected Environment*:

> "For permanent impacts to vegetation and habitat, the Section 8.2 of the Wind Power Guidelines (WDFW 2009) recommend mitigation be tailored to specific classifications. The project is located within the classification for "Forestry," which are those commercial forested areas defined and regulated under the Forest Practices Act. Minimization of conversion of forested areas is suggested, and consultation with WDFW is the only recommended mitigation. No form of acquisition, restoration or conservation of lands is suggested by the guidelines."

However, we would like to further discuss the proposal as it relates to the table in Section 8.2 of the 2009 WDFW Wind Power Guidelines mitigation for both temporary and permanent impacts.

We support the two-year minimum post-construction avian mortality study, as well as the development of a Technical Advisory Committee (TAC)

WDFW is in general agreement with the proposed commercial forestry operations within the vicinity of each turbine as described in Section 3.0 ("turbine timber buffer") and would like to offer the following interpretation.

According to Section 3.0, "Vegetation surrounding each turbine would be managed according to the following specifications:

- A circular area extending 50 feet from each turbine tower base would be harvested and graveled
- From 50 feet to 150 feet from the base of the turbine towers, tree heights would be limited to 15 feet above the elevation of the base of the turbine
- From 150 feet to 500 feet from the base of the turbine towers, tree height would be limited to 50 feet above the turbine base within an area formed by a 90 degree arc centered on the ordinary downwind direction."

From this, we conclude that within a diameter of 100 to 300 feet surrounding each turbine, tree heights would be limited to 15 feet, and from a diameter of 300 to 500 feet, tree heights would be limited to 50 feet, but only within a 90-degree arc on either side of the turbine aligned with the direction of the prevailing wind. The other 90-degree arc on either side of the turbine perpendicular with the direction of the prevailing wind will essentially be unchanged habitat (i.e. existing commercial forest). We are interested in how this type of habitat and commercial forest management in the immediate vicinity of operating wind turbines will or will not affect the avian and bat mortality. We look forward to working with Whistling Ridge through the TAC to address this issue and cooperatively develop management strategies, if needed, to reduce avian and bat mortality.

Thank you for the opportunity to review the Preliminary DEIS and offer these comments.

Sincerely,

Michael Ritter

Michael Ritter
Wind Mitigation Biologist

State of Washington
DEPARTMENT OF FISH AND WILDLIFE

Mailing Address: 600 Capitol Way N • Olympia, WA 98501-1091 • (360) 902-2200, TDD (360) 902-2207
Main Office Location: Natural Resources Building • 1111 Washington Street SE • Olympia, WA

September 22, 2009

Mr. Jason Spadaro
SDS Lumber Company
Post Office Box 266
Bingen, Washington 98605

Dear Mr. Spadaro:

Thank you for your letter dated August 21, 2009, concerning the Whistling Ridge Energy Project. You requested clarification on several specific issues raised in correspondence from the Washington Department of Fish and Wildlife (WDFW) on May 14, 2009, and June 11, 2009.

You are concerned that the letters from WDFW provided an incomplete and inaccurate analysis of wildlife data that has been collected for the proposed project since 2003, and that our conclusions regarding potential project impacts to birds and bats are unwarranted and unsubstantiated. It is my goal to provide clarification to our previous letters that will allow you to continue to develop your proposal for this wind power project, at Whistling Ridge, using our Wind Power Guidelines.

You raised concern of how receptive WDFW is to Best Available Science (BAS) and its application to the project. WDFW views BAS as an integral component of your project assessment, therefore, we will consider all current and future BAS related to your existing and future proposals and review the findings objectively. Your supplemental information concerning goshawks, spotted owls and other avian species and Western grey squirrel use of the project site that you included in your August 21 letter, fits this definition of BAS. We will use this information to refine our analysis of the impacts of this project. Our analysis will focus on current habitat conditions and species presence. We will also treat any additional information you may submit in the future as BAS.

I acknowledge projections of post-construction bat mortalities that we made, that were based on pre-construction activity levels, are not necessarily a good predicator of numbers of post-construction mortalities; they only provide an indicator of relative risk, as documented at other wind farms around the country. Pre-construction activity levels are also important as a

guide to avoid and minimize collisions (post-construction) through the placement of the wind turbines, and to assess the potential length of post-construction fatality studies.

I am encouraged by your commitments to adaptive management for this project and am certain we will agree on a plan that will ensure that avoidance, minimization, and/or mitigation goals are met once the project is completed.

I look forward in working with you to get on track and to continue towards building a collaborative working relationship and to assist you in developing a proposal for the Whistling Ridge Energy Project that will be protective of wildlife.

Sincerely,

Greg Hueckel, Assistant Director
Habitat Program

cc: Governor Christine Gregoire
Phil Anderson, WDFW Director
Allen Fiksdal, EFSEC Siting Manager

WR - DEIS
Public Comment #370

RECEIVED
AUG 24 2010
ENERGY FACILITY SITE
EVALUATION COUNCIL

Additional Comments, Whistling Ridge DEIS
Keith Brown, Ph.D. and Teresa Robbins

Energy Facility Site Evaluation Council
905 Plum Street SE
P.O. Box 43172
Olympia, WA 98504-3172

August 20, 2010

Dear Council Members/BPA Representatives:

We appreciate that EFSEC and BPA recognized that more time was warranted in relation to public comment on the Whistling Ridge DEIS. We purposely limited our attention to the noise element portion of the DEIS and have continued to thoroughly review and research available information. Extensive and thorough perusal has deepened our concern and substantially confirmed the original deficiencies and suggestions we identified in our written and verbal testimonies dated June 16th and July 15th of 2010. We stand strongly by our original analysis.

The DEIS is a poorly constructed house of smoke and mirrors...'don't look there, just over here', thus sadly misleading the public. It appears that rather than 'sleight of hand' it's 'sleight of facts'.

We offer the following DEIS statements as some specific examples of additional deficiencies which are amply contradicted by current research.

"Low frequency sound typically ranges from 100 Hz to 20 Hz..." (DEIS p. 3-119)

Multiple sources indicate the upper range of low frequency noise is 200 Hz:
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"These wind turbines are not a source of substantial low frequency noise." (DEIS p. 3-115)
"... low frequency noise is not anticipated to be an issue for this project." (DEIS p. 3-130)
"... modern turbine designs have been modified to reduce or eliminate low frequency sound." (DEIS p. 3-131)

These statements are thoroughly contradicted by the following <u>current</u> research, journal articles and expert opinion, demonstrating that there <u>is</u>

significant low frequency noise emission by the upwind turbines slated for this project:

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The interaction of the blade with the wind creates low frequency noise.

"… the BPF (blade passing frequency) ***noise of modern large wind turbines belongs to infrasound and low-frequency noise."***
"… the low-frequency noise of … wind turbines in the frequency range over 30 Hz is found to be audible (or capable of being felt) by the average person and would probably lead to psychological complaints from ordinary adults." –Jung et al (2008)

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"Sound generated by wind turbines has particular characteristics and it creates a different type of nuisance compared to usual urban, industrial, or commercial noise. The interaction of the blades with air turbulences around the towers creates low frequency and infrasound components, which modulate the broadband noise and create fluctuations of sound level." –Soysai and Soysai (2007)

This "only temporal modulation of sound" ***(infra-sound, low-frequency, and higher frequencies) is the factor that makes wind turbine noise far more disruptive and intrusive than smooth noise. –Thorne (2009)***

Leventhall (2006) (your cited expert) ***states "A time varying sound is more annoying than a steady sound of the same average level" and should be "accounted for by reducing the permitted level of wind turbine noise."***

"... environmental noise effects are typically limited to subjective impacts (e.g., annoyance, nuisance, dissatisfaction) and activity interference (i.e., impacts to sleep, speech, and learning.). Despite attempts by prominent acousticians to quantify the association between measurable sounds levels and corresponding reactions of annoyance and dissatisfaction, there is no way to measure the subjective impacts of noise. Further, the aforementioned variability of individual human sensitivity and/or tolerance to noise defies creation of a common standard." (DEIS p. 3-115)

"Scientific articles suggest that low frequency noise does not pose a health risk (Leventhall 2006). There may, however, be some correlation between an individual receptor's psychological sensitivity to the noise source (like or dislike for the noise source) and complaints regarding discomfort from that noise source. These are sometimes associated with complaints regarding sleep disturbance. Because sensitivity to noise can be influenced by such psychological factors and can subjectively be deemed significant by an affected individual, regardless of measurable frequency or amplitude level, it is difficult to quantify these impacts or to impose mitigation." (DEIS p. 3-130)

The cited article by Leventhall addresses primarily infrasound, noting the difference between infrasound and low frequency. It presents, however, no scientific evidence to prove that wind turbine low-frequency noise poses no health risk. Conversely...

" There is no medical doubt that audible noise such as emitted by modern upwind industrial wind turbines sited close to human residences causes significant adverse health effects... This is settled medical science."
"There are many peer-reviewed studies showing that infra and low frequency sound can cause adverse health effects, especially when dynamically modulated. Modern upwind industrial scale turbines of the types now being located in rural areas of North America require study. The extent to which infra and low frequency noise from wind turbines inside or outside homes causes direct adverse effects upon the human body remains an open question." –The Society for Wind Vigilance (2010)

"There is ample scientific evidence to conclude that wind turbines cause serious health problems for some people living nearby."
"The reported health effects, including insomnia, loss of concentration, anxiety, and general psychological distress are as real as physical ailments, and are part of accepted modern definitions of individual and public health."
"The reports that claim that there is no evidence of health effects are based on a very simplistic understanding of epidemiology and self-serving definitions of what does not count as evidence. Though those reports probably seem convincing prima facie, they do not represent proper scientific reasoning and in some cases the conclusions of those reports do not even match their own analysis." –Phillips (2010)

"In weighing the evidence, I find that, on the one hand there is a large number of reported cases of sleep disturbance and, in some cases, ill health, as a result of exposure to noise from wind turbines supported by a number of research reports that tend to confirm the validity of the anecdotal reports and provide a reasonable basis for the complaints. On the other, we have badly designed industry and government reports which seek to show that there is no problem. I find the latter unconvincing. " (emhasis added) – Hanning (2009)

Years of experience and the current research of Dr. Thorne (2010) compels his opinion that noise from wind turbine farms, if placed too close to a residence (within 2000 meters), does pose quantifiable risks for potential adverse health effects.

"There is increasingly clear evidence that audible and low-frequency acoustic energy from these turbines is sufficiently intense to cause extreme annoyance and inability to sleep or disturbed sleep in individuals living near them." –Punch et al (2010)

The DEIS statements that "there is no way to measure the subjective impacts of noise", ***and*** "it is difficult to quantify these impacts or to impose mitigation" ***lack credibility. The EPA standards were based upon measurements of the subjective impacts of noise. The European Union has invested considerable resources in investigating the impact of wind turbine noise. Current research by Pederson (2007) is devoted to determining subjective impact from various levels of wind turbine noise. The Thorne Ph.D. thesis 2009, Assessing Intrusive Noise and Low Amplitude Sound, specifically addresses this topic.***

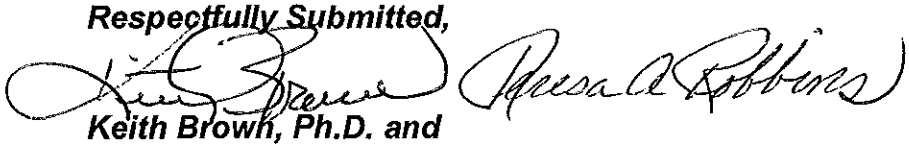
While it may require effort to determine subjective impact and annoyance, to suggest that it is impossible to mitigate for this flies in the face of all the scientific work that has been and is currently being done to mitigate the impact of highway, rail, airline and now wind turbine noise. Need we state the obvious? To mitigate, increase the setback distances so that the most sensitive individuals (typically young children and aging adults) are likely to be unaffected.

To provide for the welfare, health and an adequate margin of safety for people, Horonjeff (2010) forwards a well-researched argument based upon current evidence of adverse impact in rural areas. Reduce allowable decibel levels in a rural environment by 15 dB from that allowed in urban and/or suburban areas. This would be considered as recommended practice in the current American National Standard (ANSI S12.0-2005/Part 4). Another approach he recommends to achieve an adequate margin of safety would be to establish set back distances of 1.5 to 2 miles.

To determine necessary setbacks, the prediction models need to be based upon best available science and technology. The inadequacies of the prediction model used for the DEIS we identified in our earlier testimony are validated in Chapter 6 of Thorne's 2009 dissertation. It indicates that wind turbines need to be considered as a complex line source and further, that using the hub height in the prediction models (as done in the DEIS) can under predict by 7 decibels. He demonstrates that using broad lines for contours (rather than the fine line contours which are presented in the DEIS) presents a more complete picture of the probable impact. He also quantifies adjustments that must be made to account for other factors, such as 'in-phase beats', and fluctuations from two or more turbines (factors that significantly increase decibel levels experienced over and above the predicted levels). Such factors need to be built into the predictive calculations. These issues are also articulated in his Noise Impact Assessment Report Waubra Wind Farm. –Thorne 2010

A revised DEIS needs to be based on best available science... not the same old template that obscures reality and significantly underestimates the adverse impact. Continuing to turn a blind eye to the growing and ample body of scientific and medical evidence would simply be unacceptable and potentially tragic.

Respectfully Submitted,



Keith Brown, Ph.D. and
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[redacted]

REFERENCED MATERIAL:

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Additional Comments, Whistling Ridge DEIS
Keith Brown, Ph.D. and Teresa Robbins

Energy Facility Site Evaluation Council
905 Plum Street SE
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WR - DEIS
Public Comment #371
RECEIVED
AUG 25 2010
ENERGY FACILITY SITE
EVALUATION COUNCIL

COMMENT LETTER 262

Aug. 22, 2010

RE: Application No. 2009-1
Whistling Ridge Energy LLC

Dear EFSEC,
My name is Barbara Robinson. I live in the Columbia Gorge in Rowena, about 7 miles west of The Dalles, in OR. I will not see the proposed wind towers from my house. I strongly favor wind farms in eastern OR and WA, where the population density is low and the ranchers who live near the towers benefit financially. I frequently drive Wasco to Condon and enjoy seeing the towers. But I strongly oppose towers that are highly visible from National Parks and Scenic Areas, and other places valued and visited by many for their natural beauty, because wind towers are visually dominant and change the landscape. The specific thing that stimulated this letter was seeing a photo simulation of what the wind towers would look like from I-84 in a mailing sent to Gorge residents by wind farm advocates. I was quite shocked at how big and conspicuous they were, even in the advocate's literature. I am writing to oppose the Whistling Ridge wind farm, for the following reasons:
1. There are many appropriate places for Wind Farms in eastern WA where wind towers are currently going in, and many can be added. The big picture is that there is no pressing energy reason to put Wind Towers at the edge of the Columbia Gorge National Scenic Area where they are clearly visable in the Scenic Area and have a clear adverse affect on it. WA is not in short supply of good places for wind farms. In fact, the NW is getting close to capacity on how many wind farms the grid can handle. The only reason for putting wind towers in this particular place is to financially benefit a particular company - SDS Lumber owns the location and can make money this way.
2. The Wind Towers will have a clearly definable adverse impact on the CGNSA. In the Management Plan for the Gorge are a list of "Key Viewing Areas" and guidelines for color, height, etc. for anything built that can be seen from a key viewing area. (See below.) The guidelines are there to prevent new structures from having an adverse impact on key viewing areas. The wind towers proposed would be visible from several key viewing areas in the Gorge.and do not meet the quidelines in the management plan, so they will have a clearly defined adverse impact.
3. Approving this siting will set a precedent for decisions in the rest of WA when a wind farm is near a National Park or other scenically beloved area. The towers are not in the CGNSA, but are set very close (I have heard 20 feet from the boundary, but in any case a look at the enclosed map shows that they are very close) to the boundary. Because they are not in the boundary, the CGNSA has no legal authority over the wind farm placement. In OR, however, the Dept. of Energy Facilities Siting Council has written standards (enclosed) for siting. Two of them are that new energy facilities shall not have adverse effects on certain places, the Columbia Gorge being one, and second that new facilities shall not adversely affect scenic values recognized in federal or local land use plans, and the CGNSA Key Viewing Areas would be a perfect example. If the WA EFSEC fails in this case to consider well defined adverse impacts on a federal National Scenic Area, you are setting a precedent. I realize it is easy for WA government to sacrifice the Columbia Gorge because it is not near Seattle, but if you site towers here, what grounds will you use

to deny siting near scenic areas like Mt Rainier, Puget Sound, and the Olympics?
4. The Management plan set the afore-mentioned standards to protect the natural beauty of the Gorge from being overwhelmed by human construction. If you allow wind towers on the rim of the Gorge where they will be very visible, that makes a mockery of all these standards that private landowners have to abide by in building their houses in the CGNSA. Why should someone have to paint their house an inconspicuous dark brown if above him can be seen white spinning towers with red lights at night?
5. If you allow these towers on the rim of the Gorge, you are setting a precedent in the Gorge. On what grounds could you deny any others near the Gorge? This will lead to all the rims of the Gorge, at least on the WA side, being lines with towers, since the wind is good everywhere. In turn, that may break down the objections to towers on the OR side.

I would now like to go into more detail on especially point 2 - Clearly defined adverse scenic impacts:

The Columbia Gorge National Scenic Area was created 25 years ago to protect the beauty of the Gorge. No buffer zone was created for its boundaries, but at the time no one envisioned the possibility of huge (greater than 400 ft. tall) wind towers on the tops of all its ridges. Recently wind towers went in just east of the Gorge Scenic Area boundary along Hwy. 97 as it winds up out of the Gorge going to Goldendale. If you doubt that wind towers impact the landscape, drive that road. You may like them or not, but they are now the first thing you notice, not the land. In fact, their movement is so hypnotic that I have trouble watching the road.

The Gorge Management Plan that was created to carry out the National Scenic Area Act lists "key viewing areas" in the Gorge that deserve special protection, and the Management Plan gives clear standards for anything built that can be seen from the key viewing areas. The proposed wind towers will be just outside the boundary of "General Management Area (GMA)" coniferous forest land. I enclose the relevant Management Plan pages (2007 revision) that govern building on that category of land if it is visible from a "key viewing area.". Some of these are:
"Each development shall be visually subordinate to its setting as seen from key viewing areas." (p.1-1-7)
"The silhouette of new buildings shall remain below the skyline of a bluff, cliff, or ridge as seen from dey viewing areas." (p.1-1-8)
"..Colors of structures on sites visible from key viewing areas shall be dark earth-tones found at the specific site or in the surrounding landscape." (1-1-9)
"The exterior of buildings on lands seen from key viewing areas shall be composed of non-reflective materials or materials with low reflectivity.." (1-1-9)
*Exterior lighting shall be directed downward and sited, hooded, and shielded such that it is not highly visible from key viewing areas." (1-1-10)
"Structure height small remain below the forest canopy level. (1-1-17)

These towers will be visible from several "key viewing areas" Two of these key viewing areas are I-84, the freeway on the OR side, and the Cook-Underwood Rd.in WA. I have put those on the enclosed map as dots. Again, the towers will not be within the Scenic Area boundary, so the Scenic Area rules do not apply directly. On the other hand, the

Scenic Area guidelines for building (see above) give clear standards for what "adversely affects" the Columbia Gorge. I have heard that the towers closest to the Scenic Area boundary will be only 20 ft. away from it, but let us say it is 200 ft. I have also heard that the towers area taller than 400 ft, but let us say they are 400 ft, including the blade. By the map enclosed, I find that the Cook-Underwood Rd. simulation viewpoint in the URS is about 1 3/8 miles from the closest tower. Let us say that tower is 200 ft out ot the Scenic Area, and 400 ft. tall. A little math (enclosed) shows that this tower is the visual equivalent of a 389 foot tower built just on the boundary, as seen from the Cook Underwood Rd. Looking at the standards for building within the Scenic Area, it is clear that a 389 ft tower built just inside the boundary would violate every building guideline listed - it would be on the ridge against the sky, far above the trees, shiny white, with a red flashing light at night. In addition, it would be moving, and the human eye and brain instinctively focus on movement. (I taught perception in college, and that was one of the principles.) This tower would be about the furthest thing from "visually subordinate" that could be imagined. It would dominate the landscape. These building guidelines are in the Management Plan to prevent structures from having an adverse impact on the Gorge, and can therefore be taken as criterion for when something would have an adverse impact. In Oregon the Facilities Siting Council has written guidelines for siting energy facilities.(Division 22: General Standards for siting Non-Nuclear Energy Facilities) Two of these are:

(345-022-0040) Protected Areas

1)..the Council shall not issue a site certificate for a proposed facility located in the areas listed below. To issue a site certificate for a proposed facility located outside the areas listed below, the Council must find that, taking into account mitigation, the design, construction and operation of the facility are not likely to result in significant adverse impact to the areas listed below. (The Columbia Gorge National Scenic Area is a listed area.)

(345-022-0080) Scenic and Aesthetic Values

1) ..the Council must find that the design, construction, operation and retirement of the facility, taking into account mitigation, are not likely to result in significant adverse impact to scenic and aesthetic values identified as significant or important in applicable federal land management plans or in local land use plans in the analysis area described in the project order.

A proposed wind farm on the OR side of the Gorge on Sevenmile Hill also would have had towers next to the Scenic Area boundary and visible from many key viewing areas. The question was, is seeing wind towers an "adverse impact?" Given the standards for building structures visible from key viewing areas within the Scenic Area, and the fact that wind towers violate all those standards, there is an objective way of saying that seeing towers would be an adverse impact.

I do not know if the WA facilities siting authority has standards, but it should. Personally, I think that in certain cases it might be OK to see wind towers, and the standard could be quantified. I remember that in a previous version of the managemnet plan, or in Wasco County's ordinances, no house visible from Key Viewing Areas could be built more than 35 ft. high. On my calculations sheet I have figured how far a 400 ft

tower would have to be from the Cook-Underwood Rd. to be the visual equivalent of a structure 35 ft. tall at the Scenic Area boundary, 1 3/8 miles from Cook-Underwood. It would have to be 15.7 miles from the Cook-Underwood Rd. Maybe a standard could be make whereby any wind towers, rather than being totally invisible, would have to be equivalent to allowable heights of structures within the Scenic Area. This would mean nothing could be built really close to the boundary.

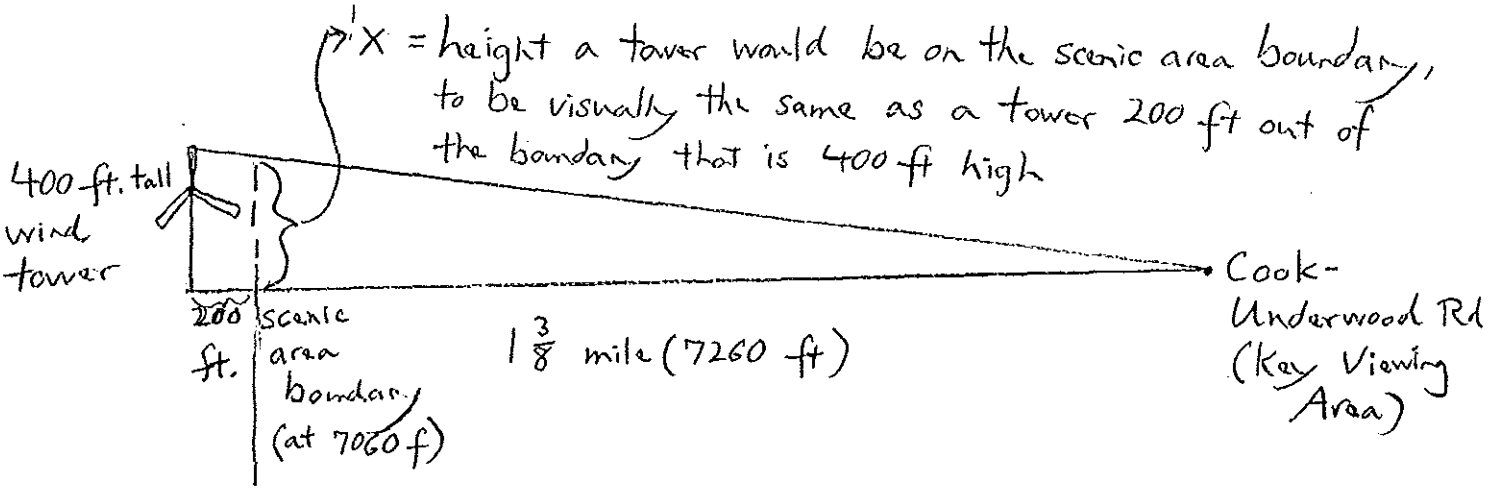
I hope that the WA council, like OR, will take into account large scenic values, especially when siting facilities near federally or state recognized preserved areas. I hope also that siting facilities of huge towers right on the boundary and very visible from a National Scenic Area will be rejected. I am for wind power, and find most of the wheat field siting satisfactory. But we do not need to put wind towers everywhere, just as we did not need to dam every river. Let us not make the same mistake again.

Very Sincerely,
Barbara Robinson

[redacted]

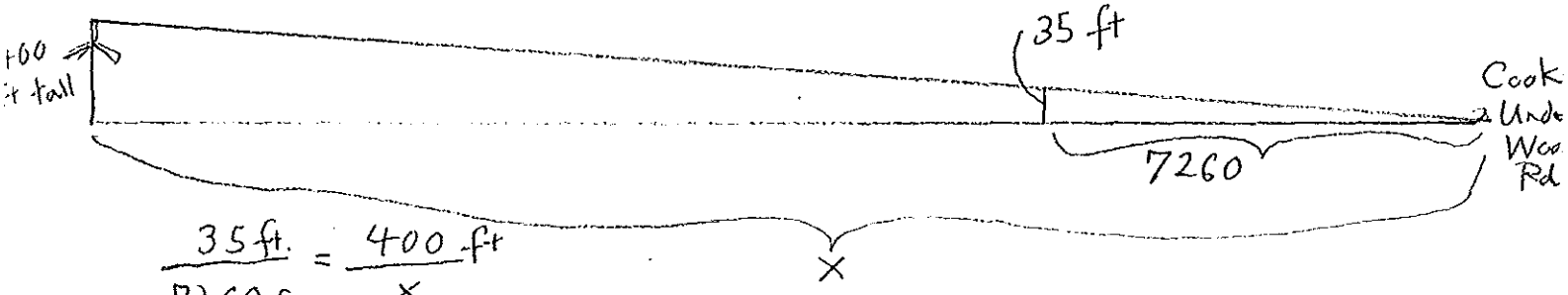
Barbara Robinson
8/22/10

Calculations



$$\frac{400\text{ ft}}{7260\text{ ft.}} = \frac{X}{7060\text{ ft.}} \qquad X = 389\text{ ft.}$$

How far away from the scenic area boundary would a 400 ft. tower have to be, to be the visual equivant on the boundary of a 35 ft tall structure (typical house height) as seen from the Cook-Underwood Rd.?



$$\frac{35\text{ ft.}}{7260\text{ ft}} = \frac{400\text{ ft}}{X}$$

$X = 82{,}971\text{ ft} = 15.7\text{ miles}$

p. 6 Protected Areas

Oregon Dept. of Energy
Facilities Siting Council
Rules + Standards
Division 22

DIVISION 22
GENERAL STANDARDS FOR SITING NON-NUCLEAR ENERGY FACILITIES

345-022-0000
General Standard of Review

(1) To issue a site certificate for a proposed facility or to amend a site certificate, the Council shall determine that the preponderance of evidence on the record supports the following conclusions:

(a) The facility complies with the requirements of the Oregon Energy Facility Siting statutes, ORS 469.300 to ORS 469.570 and 469.590 to 469.619, and the standards adopted by the Council pursuant to ORS 469.501 or the overall public benefits of the facility outweigh the damage to the resources protected by the standards the facility does not meet as described in section (2);

(b) Except as provided in OAR 345-022-0030 for land use compliance and except for those statutes and rules for which the decision on compliance has been delegated by the federal government to a state agency other than the Council, the facility complies with all other Oregon statutes and administrative rules identified in the project order, as amended, as applicable to the issuance of a site certificate for the proposed facility. If the Council finds that applicable Oregon statutes and rules, other than those involving federally delegated programs, would impose conflicting requirements, the Council shall resolve the conflict consistent with the public interest. In resolving the conflict, the council cannot waive any applicable state statute.

(2) The Council may issue or amend a site certificate for a facility that does not meet one or more of the standards adopted under ORS 469.501 if the Council determines that the overall public benefits of the facility outweigh the damage to the resources protected by the standards the facility does not meet. The Council shall make this balancing determination only when the applicant has shown that the proposed facility cannot meet Council standards or has shown, to the satisfaction of the Council, that there is no reasonable way to meet the Council standards through mitigation or avoidance of the damage to the protected resources. The applicant has the burden to show that the overall public benefits outweigh the damage to the resources, and the burden increases proportionately with the degree of damage to the resources. The Council shall weigh overall public benefits and damage to the resources as follows:

(a) The Council shall evaluate the damage to the resources by considering factors including, but not limited to, the following:

(A) The uniqueness and significance of the resource that would be affected;

(B) The degree to which current or future development may damage the resource, if the proposed facility is not built;

(C) Proposed measures to reduce the damage by avoidance of impacts;

and adverse impacts will be mitigated in accordance with rules of the Council applicable to the siting of the proposed facility; and

(C) The proposed facility is compatible with other adjacent uses or will be made compatible through measures designed to reduce adverse impacts.

(5) If the Council finds that applicable substantive local criteria and applicable statutes and state administrative rules would impose conflicting requirements, the Council shall resolve the conflict consistent with the public interest. In resolving the conflict, the Council cannot waive any applicable state statute.

(6) If the special advisory group recommends applicable substantive criteria for an energy facility described in ORS 469.300(10)(a)(C) to (E) or for a related or supporting facility that does not pass through more than one local government jurisdiction or more than three zones in any one jurisdiction, the Council shall apply the criteria recommended by the special advisory group. If the special advisory group recommends applicable substantive criteria for an energy facility described in ORS 469.300(10)(a)(C) to (E) or a related or supporting facility that passes through more than one jurisdiction or more than three zones in any one jurisdiction, the Council shall review the recommended criteria and decide whether to evaluate the proposed facility against the applicable substantive criteria recommended by the special advisory group, against the statewide planning goals or against a combination of the applicable substantive criteria and statewide planning goals. In making the decision, the Council shall consult with the special advisory group, and shall consider:

(a) The number of jurisdictions and zones in question;

(b) The degree to which the applicable substantive criteria reflect local government consideration of energy facilities in the planning process; and

(c) The level of consistence of the applicable substantive criteria from the various zones and jurisdictions.

Stat. Authority: ORS 469.470
Stat. Implemented: ORS 469.504

345-022-0040

→ **Protected Areas**

(1) Except as provided in sections (2) and (3), the Council shall not issue a site certificate for a proposed facility located in the areas listed below. To issue a site certificate for a proposed facility located outside the areas listed below, the Council must find that, taking into account mitigation, the design, construction and operation of the facility are not likely to result in significant adverse impact to the areas listed below. Cross-references in this rule to federal or state statutes or regulations are to the version of the statutes or regulations in effect as of August 28, 2003:

(a) National parks, including but not limited to Crater Lake National Park and Fort Clatsop National Memorial;

includes Columbia Gorge National Scenic Area on p. 7

Protected Area Standard

345-022-0060
Fish and Wildlife Habitat
To issue a site certificate, the Council must find that the design, construction, operation and retirement of the facility, taking into account mitigation, are consistent with the fish and wildlife habitat mitigation goals and standards of OAR 635-415-0025 in effect as of September 1, 2000.
Stat. Authority: ORS 469.470, ORS 469.501
Stat. Implemented: ORS 469.501

345-022-0070
Threatened and Endangered Species
To issue a site certificate, the Council, after consultation with appropriate state agencies, must find that:

(1) For plant species that the Oregon Department of Agriculture has listed as threatened or endangered under ORS 564.105(2), the design, construction, operation and retirement of the proposed facility, taking into account mitigation:

(a) Are consistent with the protection and conservation program, if any, that the Oregon Department of Agriculture has adopted under ORS 564.105(3); or

(b) If the Oregon Department of Agriculture has not adopted a protection and conservation program, are not likely to cause a significant reduction in the likelihood of survival or recovery of the species; and

(2) For wildlife species that the Oregon Fish and Wildlife Commission has listed as threatened or endangered under ORS 496.172(2), the design, construction, operation and retirement of the proposed facility, taking into account mitigation, are not likely to cause a significant reduction in the likelihood of survival or recovery of the species.
Stat. Authority: ORS 469.470, ORS 469.501
Stat. Implemented: ORS 469.501

345-022-0080
Scenic and Aesthetic Values

(1) Except for facilities described in section (2), to issue a site certificate, the Council must find that the design, construction, operation and retirement of the facility, taking into account mitigation, are not likely to result in significant adverse impact to scenic and aesthetic values identified as significant or important in applicable federal land management plans or in local land use plans in the analysis area described in the project order.

(2) The Council may issue a site certificate for a special criteria facility under OAR 345-015-0310 without making the findings described in section (1). However, the Council may apply the requirements of section (1) to impose conditions on a site certificate issued for such a facility.
Stat. Authority: ORS 469.470, ORS 469.501
Stat. Implemented: ORS 469.501

Section 2: fast track process for natural gas

From: Management Plan for the CGNSA as amended through June, 2007

B. If subject to state jurisdiction, whether an application has been received for a state reclamation permit and, if so, the current status of the application; and

C. For uses subject to state jurisdiction, any issues or concerns regarding consistency with state reclamation requirements, or any suggested modifications to comply with state reclamation requirements.

Scenic Area implementing agencies may request technical assistance from state agencies on reclamation plans for proposed mining not within the state agency's jurisdiction.

KEY VIEWING AREAS

GMA Goal

→ Emphasize protection and enhancement of Gorge landscapes seen from key viewing areas.

GMA Objectives

1. Establish scenic enhancement programs prioritizing enhancement of lands seen from key viewing areas.

2. Establish a program to phase-out existing quarries and associated activities and develop reclamation plans for such quarries at sites where the Gorge Commission determines that such uses adversely affect scenic resources on land visible from key viewing areas. The Gorge Commission shall initiate this objective by inventorying existing quarries visible from key viewing areas. Phase-out plans may require some additional quarrying for a limited time to best achieve contours that blend with surrounding landforms. Phase-out and reclamation plans for particular quarries shall include a specified time period for completion, not to exceed 5 years from the commencement of such plans.

3. Encourage mining reclamation methods and features that enhance wildlife habitat and wetlands, ameliorate visual impacts of existing quarries, and accelerate achievement of desired visual quality objectives.

4. Encourage use of planned unit developments, clustering, lot reconfiguration and consolidation, and other techniques to reduce visual impacts of new development on lands that are visible from key viewing areas and that possess high or critical visual sensitivity.

5. Encourage plantings of native species or species characteristic of the landscape setting to screen existing development that is not visually subordinate on lands that are visible from key viewing areas and that possess high or critical visual sensitivity.

GMA Policies

1. Important public roads, parks, and other vantage points providing public scenic viewing opportunities shall be designated as key viewing areas, as identified in the glossary of the Management Plan.

2. Except for new production and/or development of mineral resources, new development on lands seen from key viewing areas shall be visually subordinate to its landscape setting. This policy shall not apply to specified developed settings that are not visually sensitive (as identified in the "Landscape Settings" section), rehabilitation or modifications to significant historic structures, shorelines on the main stem of the Columbia River that adjoin Urban Areas, or other developments expressly exempted from this requirement in this chapter.

3. In developing conditions of approval, agencies shall emphasize those elements that, in combination, provide effective, long-term scenic resource protection.

4. New utility transmission lines, transportation and communication facilities, docks and piers, and repairs and maintenance of existing lines, roads and facilities shall be visually subordinate as seen from key viewing areas to the maximum extent practicable.

5. New buildings shall be prohibited on steeply sloping lands visible from key viewing areas.

6. Proposed projects involving substantial grading on lands visible from key viewing areas shall include a grading plan addressing visual impacts of grading activities. All graded areas shall be revegetated to the maximum extent practicable.

7. Development along the shoreline of the Columbia River and on immediately adjacent lands shall be limited to water-dependent development and water-related recreation development.

8. New production and/or development of mineral resources on sites visible in the foreground or middle ground from key viewing areas shall be permitted if fully screened from view from those key viewing areas. New production and/or development of mineral resources on sites visible in the background from key viewing areas shall be permitted if visually subordinate to its setting as seen from those key viewing areas.

9. Expansion of existing quarries on sites visible from key viewing areas shall be permitted if visually subordinate to its setting as seen from key viewing areas. Existing quarries are those determined not to be discontinued, pursuant to Guideline 4.D in "Existing Uses and Discontinued Uses" (Part II, Chapter 7: General Policies and Guidelines). Expansion refers to lateral expansion (expansion of mining activities into land surfaces previously unaffected by mining).

10. In addition to the guidelines contained in this section, applicable design guidelines specified for a particular landscape setting shall be used to ensure that new development on lands seen from key viewing areas is visually subordinate to its setting in a manner responsive to the unique character of that setting.

→ 11. The Commission and Forest Service shall maintain a *Scenic Resources Implementation Handbook*. The Handbook shall provide specific guidance for applicants and planners in implementing color, reflectivity, landscaping and other guidelines for development on sites visible from key viewing areas. It may be updated as needed, as determined by the Executive Director and Scenic Area Manager. In updating the *Handbook*, the Commission and Forest Service will collaborate with the implementing counties, and solicit other agency and public input.

The *Handbook* is intended to provide non-exclusive, recommended lists of exterior building materials (for reflectivity) and vegetation species.

GMA Guidelines

→ 1. The guidelines in this section shall apply to proposed developments on sites topographically visible from key viewing areas.

→ 2. Each development shall be visually subordinate to its setting as seen from key viewing areas.

3. Determination of potential visual effects and compliance with visual subordinance policies shall include consideration of the cumulative effects of proposed developments.

4. The extent and type of conditions applied to a proposed development to achieve visual subordinance shall be proportionate to its potential visual impacts as seen from key viewing areas.

   A. Decisions shall include written findings addressing the factors influencing potential visual impact, including but not limited to:

      (1) The amount of area of the building site exposed to key viewing areas.

      (2) The degree of existing vegetation providing screening.

      (3) The distance from the building site to the key viewing areas from which it is visible.

      (4) The number of key viewing areas from which it is visible.

(5) The linear distance along the key viewing areas from which the building site is visible (for linear key viewing areas, such as roads).

B. Conditions may be applied to various elements of proposed developments to ensure they are visually subordinate to their setting as seen from key viewing areas, including but not limited to:

(1) Siting (location of development on the subject property, building orientation, and other elements).

(2) Retention of existing vegetation.

(3) Design (color, reflectivity, size, shape, height, architectural and design details and other elements).

(4) New landscaping.

5. New development shall be sited to achieve visual subordinance from key viewing areas, unless the siting would place such development in a buffer specified for protection of wetlands, riparian corridors, sensitive plants, or sensitive wildlife sites or would conflict with guidelines to protect cultural resources. In such situations, development shall comply with this guideline to the maximum extent practicable.

6. New development shall be sited using existing topography and/or existing vegetation as needed to achieve visual subordinance from key viewing areas.

7. Existing tree cover screening proposed development from key viewing areas shall be retained as specified in the Landscape Settings Design Guidelines section of this chapter.

→ 8. The silhouette of new buildings shall remain below the skyline of a bluff, cliff, or ridge as seen from key viewing areas. Variances to this guideline may be granted if application of the guideline would leave the owner without a reasonable economic use. The variance shall be the minimum necessary to allow the use and may be applied only after all reasonable efforts to modify the design, building height, and site to comply with the guideline have been made.

9. An alteration to a building built before November 17, 1986, that already protrudes above the skyline of a bluff, cliff, or ridge as seen from a key viewing area, may itself protrude above the skyline if:

A. The altered building, through use of color, landscaping and/or other mitigation measures, contrasts less with its setting than before the alteration, and

B. There is no practicable alternative means of altering the building without increasing the protrusion.

10. The following guidelines shall apply to new landscaping used to screen development from key viewing areas:

    A. New landscaping (including new earth berms) shall be required only when application of all other available guidelines in this chapter is not sufficient to make the development visually subordinate from key viewing areas. Alternate sites shall be considered prior to using new landscaping to achieve visual subordinance. Development shall be sited to avoid the need for new landscaping wherever possible.

    B. If new landscaping is required to make a proposed development visually subordinate from key viewing areas, existing on-site vegetative screening and other visibility factors shall be analyzed to determine the extent of new landscaping, and the size of new trees needed to achieve the standard. Any vegetation planted pursuant to this guideline shall be sized to provide sufficient screening to make the development visually subordinate within five years or less from the commencement of construction.

    C. Unless as specified otherwise by provisions in this chapter, landscaping shall be installed as soon as practicable, and prior to project completion. Applicants and successors in interest for the subject parcel are responsible for the proper maintenance and survival of planted vegetation, and replacement of such vegetation that does not survive.

    D. The *Scenic Resources Implementation Handbook* shall include recommended species for each landscape setting consistent with the Landscape Settings Design Guidelines in this chapter, and minimum recommended sizes of new trees planted (based on average growth rates expected for recommended species).

11. Conditions regarding new landscaping or retention of existing vegetation for new developments on lands designated GMA Forest shall meet both scenic guidelines and fuel break requirements in Criterion 1.A of "Approval Criteria for Fire Protection".

12. Unless expressly exempted by other provisions in this chapter, colors of structures on sites visible from key viewing areas shall be dark earth-tones found at the specific site or in the surrounding landscape. The specific colors or list of acceptable colors shall be included as a condition of approval. The *Scenic Resources Implementation Handbook* will include a recommended palette of colors.

13. The exterior of buildings on lands seen from key viewing areas shall be composed of non-reflective materials or materials with low reflectivity, unless the structure would be fully screened from all key viewing areas by existing topographic features. The *Scenic Resources Implementation Handbook* will include a list of

recommended exterior materials. These recommended materials and other materials may be deemed consistent with this guideline, including those where the specific application meets recommended thresholds in the "Visibility and Reflectivity Matrices" in the *Implementation Handbook* (once they are created). Continuous surfaces of glass unscreened from key viewing areas shall be limited to ensure visual subordinance. Recommended square footage limitations for such surfaces will be provided for guidance in the *Implementation Handbook.*

14. In addition to the site plan requirements in "Review Uses" (Part II, Chapter 7: General Policies and Guidelines), applications for all buildings visible from key viewing areas shall include a description of the proposed building(s)' height, shape, color, exterior building materials, exterior lighting, and landscaping details (type of plants used; number, size, locations of plantings; and any irrigation provisions or other measures to ensure the survival of landscaping planted for screening purposes).

15. For proposed mining and associated activities on lands visible from key viewing areas, in addition to submittal of plans and information pursuant to Guideline 6 in the "Overall Scenic Provisions" section of this chapter, project applicants shall submit perspective drawings of the proposed mining areas as seen from applicable key viewing areas.

16. Exterior lighting shall be directed downward and sited, hooded, and shielded such that it is not highly visible from key viewing areas. Shielding and hooding materials shall be composed of non-reflective, opaque materials.

17. Additions to existing buildings smaller in total square area than the existing building may be the same color as the existing building. Additions larger than the existing building shall be of dark earth-tone colors found at the specific site or in the surrounding landscape. The specific colors or list of acceptable colors shall be included as a condition of approval. The *Scenic Resources Implementation Handbook* will include a recommended palette of colors.

18. Rehabilitation of or modifications to existing significant historic structures shall be exempted from visual subordinance requirements for lands seen from key viewing areas. To be eligible for such exemption, the structure must be included in, or eligible for inclusion in, the National Register of Historic Places or be in the process of applying for a determination of significance pursuant to such regulations. Rehabilitation of or modifications to structures meeting this guideline shall be consistent with National Park Service regulations for such structures.

19. New main lines on lands visible from key viewing areas for the transmission of electricity, gas, oil, other fuels, or communications, except for connections to individual users or small clusters of individual users, shall be built in existing transmission corridors unless it can be demonstrated that use of existing corridors

is not practicable. Such new lines shall be underground as a first preference unless it can be demonstrated to be impracticable.

20. New communication facilities (antennae, dishes, etc.) on lands visible from key viewing areas that require an open and unobstructed site shall be built upon existing facilities unless it can be demonstrated that use of existing facilities is not practicable.

21. New communications facilities may protrude above a skyline visible from a key viewing area only upon demonstration that:

    A. The facility is necessary for public service,

    B. The break in the skyline is seen only in the background, and

    C. The break in the skyline is the minimum necessary to provide the service.

22. Overpasses, safety and directional signs, and other road and highway facilities may protrude above a skyline visible from a key viewing area only upon a demonstration that:

    A. The facility is necessary for public service, and

    B. The break in the skyline is the minimum necessary to provide the service.

23. Except for water-dependent development and for water-related recreation development, development shall be set back 100 feet from the ordinary high water mark of the Columbia River below Bonneville Dam, and 100 feet from the normal pool elevation of the Columbia River above Bonneville Dam, unless the setback would render a property unbuildable. In such cases, variances to this guideline may be authorized.

24. New buildings shall not be permitted on lands visible from key viewing areas with slopes in excess of 30 percent. Variances to this guideline may be authorized if the guideline's application would render a property unbuildable. In determining the slope, the average percent slope of the proposed building site shall be used.

25. Driveways and buildings shall be designed and sited to minimize visibility of cut banks and fill slopes from key viewing areas.

26. All proposed structural development involving more than 200 cubic yards of grading on sites visible from key viewing areas shall include submittal of a grading plan. This plan shall be reviewed by the local government for compliance with key viewing area policies. The grading plan shall include the following:

established before approval. The interim time period shall be based on site-specific topographic and visual conditions, but shall not exceed 3 years beyond the date of approval.

30. An interim time period to achieve compliance with full screening requirements for new quarries located less than 3 miles from the nearest visible key viewing area shall be established before approval. The interim time period shall be based on site-specific topographic and visual conditions, but shall not exceed 1 year beyond the date of approval. Quarrying activity occurring before achieving compliance with full screening requirements shall be limited to activities necessary to provide such screening (creation of berms, etc.).

LANDSCAPE SETTINGS

GMA Goals

1. Maintain the diversity of Gorge landscapes to protect and enhance the Gorge's scenic beauty.

2. Retain the existing character of the Gorge's rural landscapes and two Rural Centers (Corbett and Skamania).

3. Protect existing riverfront landscape settings when providing additional recreational river access and ensure that riverfront recreation is provided in a manner compatible with those settings.

GMA Policies

1. New developments shall be compatible with their landscape setting and maintain the integrity of that setting. Expansion of existing developments shall be compatible with their landscape setting and maintain the integrity of that setting to the maximum extent practicable.

2. These goals, policies, and guidelines apply only to developments and uses subject to review, pursuant to the Management Plan. While agricultural and forest practices influence landscape settings, they are not subject to the goals, policies, and guidelines for landscape settings.

3. Because of the dynamic nature of landscape settings, these settings shall be reevaluated in the periodic plan review process. Substantial changes, particularly with respect to changes of large areas between wooded and agricultural settings, shall be reflected in periodic revisions to the Management Plan.

4. Maintenance of landscape settings shall be a key consideration in determining minimum parcel sizes for GMA land use designations. Recommended minimum parcel sizes for new land divisions to maintain landscape setting character are

included where applicable in the landscape settings descriptions. The Gorge Commission shall use these recommendations when considering minimum parcel sizes for either plan amendments or plan updates.

5. The "Compatible Recreation Use Guidelines" for each landscape setting shall provide the basis for evaluating cumulative effects of recreation proposals on landscape settings, including types and intensities of recreation uses.

GMA Descriptions and Guidelines

Pastoral

Overview and Land Use

Pastoral settings are essentially agrarian in character, typified by areas of pastures and intensive agriculture. This setting includes areas where orchards, vineyards, row crops, and irrigated pasture predominate the landscape. This setting often includes woodlots and scattered rural residential development. Visual features distinguishing this setting include large expanses of cultivated fields and pastures, punctuated by clusters of farm accessory buildings and hedgerows or poplar rows defining distinct fields. Some small parcels with residences occur, but many parcels range between forty and several hundred acres in size.

Landforms

These settings usually occur on level ground or gently rolling terrain. Some of these landscapes are found on relatively flat terraces and benches at the top of steep slopes that form the walls of the Gorge. Other pastoral areas occur in the fertile valleys of the major tributaries flowing into the Columbia River.

Vegetation

Non-native vegetation patterns are predominant. They include alfalfa fields and irrigated pasture, vineyards and fruit orchards, row crops, hedgerows, and poplar rows. Scattered woodlots interspersed throughout this setting reflect the natural vegetation of the portion of the Gorge in which they are located (e.g. Oregon oak and ponderosa pine in the eastern Gorge; Douglas-fir, big leaf maple, and western red cedar in the west).

Compatible Recreation Use Guideline

Resource-based recreation uses of a very low-intensity or low-intensity nature (as defined in the "Recreation Intensity Classes" section of Part I, Chapter 4: Recreation Resources), occurring infrequently in the landscape, are compatible with this setting.

Recommended Parcel Size for New Land Divisions

40 acres.

Design Guidelines

1. Accessory structures, outbuildings, and access ways shall be clustered together as much as possible, particularly towards the edges of existing meadows, pastures, and farm fields.

2. In portions of this setting visible from key viewing areas, the following guidelines shall be employed to achieve visual subordinance for new development and expansion of existing development:

   A. Except as is necessary for site development or safety purposes, the existing tree cover screening the development from key viewing areas shall be retained.

   B. Vegetative landscaping shall, where feasible, retain the open character of existing pastures and fields.

   C. At least half of any trees planted for screening purposes shall be species native to the setting or commonly found in the area. Such species include fruit trees, Douglas-fir, Lombardy poplar (usually in rows), Oregon white oak, big leaf maple, and black locust (primarily in the eastern Gorge).

   D. At least one-quarter of any trees planted for screening shall be coniferous for winter screening.

Coniferous Woodland

Overview and Land Use

These are primarily thickly forested areas characterized by forest uses and scattered residential development. Forest uses are often small to moderate in scale, particularly in the more settled portions of this setting. Parcels typically range between 20 and 160 acres in size. Large-scale silvicultural operations also occur in the less developed portions of this setting where land holdings tend to be relatively large (several hundred acres and larger) and residences fairly uncommon.

Landforms

These settings are found in hilly and mountainous portions of the Gorge, particularly on the Washington side of the western Gorge (in the GMA). The more gently rolling and accessible portions of this setting contain small-scale agricultural use and relatively more residences.

Vegetation

This setting is generally dominated by large conifer tree species associated with the ecosystems of the wet western slopes of the Cascades. Such species include Douglas-fir, western hemlock, western red cedar, and grand fir. Deciduous trees frequent the riparian corridors and also cover many slopes in the westernmost portions of the Gorge. Common deciduous species include big leaf maple, red alder, black cottonwood, and various species of willow trees. In the eastern portions of this setting and on dry, south-facing slopes, ponderosa pine and Oregon white oak are also common.

Compatible Recreation Use Guideline

Resource-based recreation uses of varying intensities may be compatible with this setting. Typically, outdoor recreation uses in Coniferous Woodlands are low intensity, and include trails, small picnic areas, and scenic viewpoints. Although infrequent, some more intensive recreation uses, such as campgrounds, occur. They tend to be scattered rather than concentrated, interspersed with large areas of undeveloped land and low-intensity uses.

Recommended Parcel Size for New Land Divisions

20 acres.

Design Guidelines

1. Structure height shall remain below the forest canopy level.

2. In portions of this setting visible from key viewing areas, the following guidelines shall be employed to achieve visual subordinance for new development and expansion of existing development:

   A. Except as is necessary for construction of access roads, building pads, leach fields, etc., the existing tree cover screening the development from key viewing areas shall be retained.

   B. At least half of any trees planted for screening purposes shall be species native to the setting. Such species include: Douglas-fir, grand fir, western red cedar, western hemlock, big leaf maple, red alder, ponderosa pine and Oregon white oak, and various native willows (for riparian areas).

   C. At least half of any trees planted for screening purposes shall be coniferous to provide winter screening.

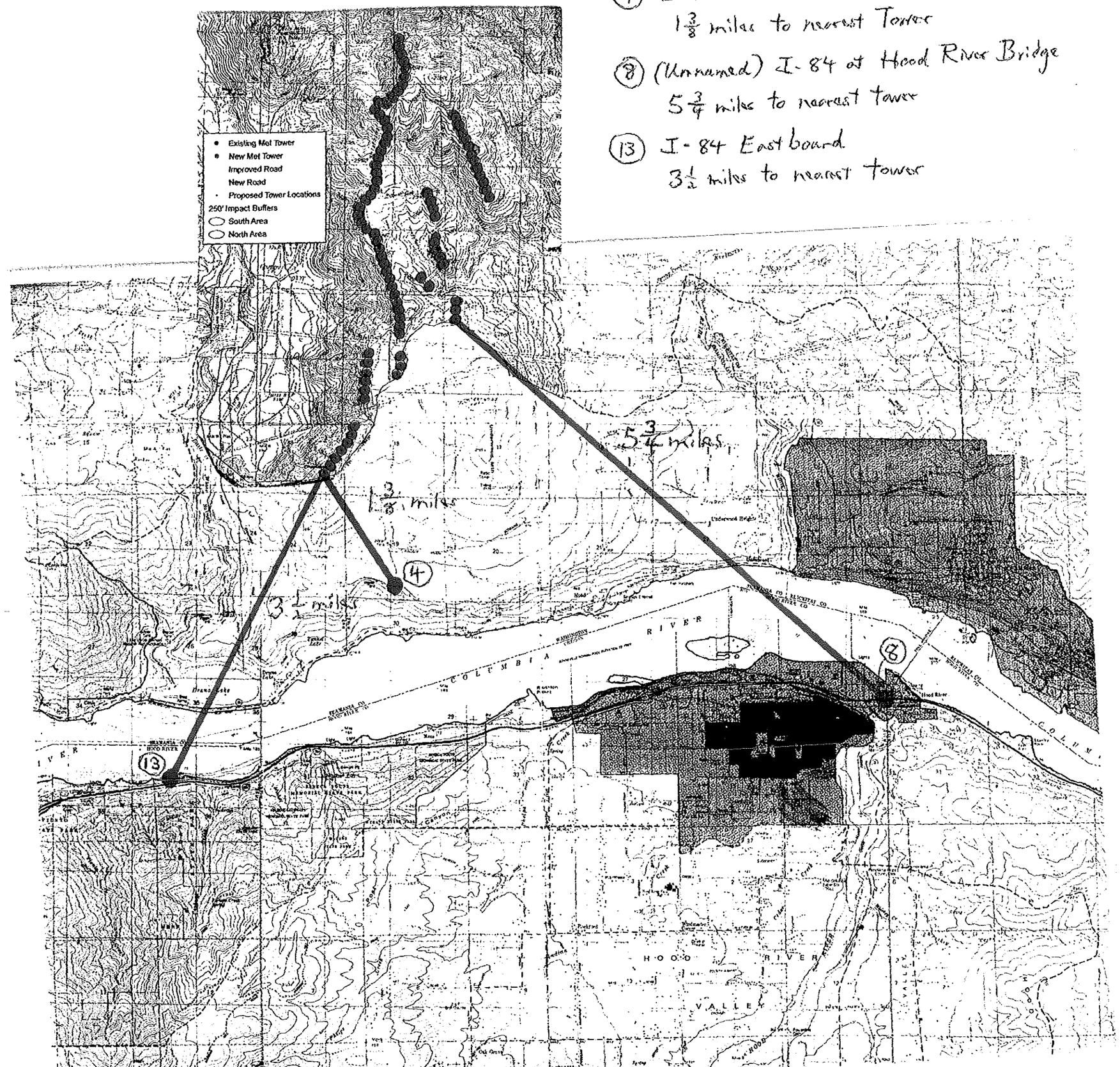
Barbara Robinson 8/22/10

Photo Locations - Key Viewing Areas

(4) Cook Underwood Rd x Ausplund Rd.
1 3/8 miles to nearest Tower

(8) (Unnamed) I-84 at Hood River Bridge
5 3/4 miles to nearest tower

(13) I-84 Eastboard
3 1/2 miles to nearest tower



COMMENT LETTER 263

Michelle, Kayce (UTC)

From: Loreley Drach [redacted]
Sent: Friday, August 20, 2010 12:54 PM.
To: EFSEC (UTC)
Subject: Whistling Ridge DEIS comment LD#1
Attachments: Jobs Watch_ Fresh breezes in the Gorge - Oregon Business.pdf

Dear EFSEC,

I wanted to submit the attached article and my comments, below, to the public comments for WRE DEIS.

Not identified or discussed in the DEIS is the fact that the Columbia River Gorge, and by overflow, Skamania County, are hotbeds of entrepreneurs. Insitu, one of the largest employers in the central gorge was founded by three people who moved here for the quality of life, the natural beauty of the Gorge. Still, to this day, this spirit lives. This area attracts and retains those educated innovative people who, partly out of necessity, create a living for themselves and as a result for others to continue living in this fabulous area.

Destroying the natural beauty which attracts well educated entrepreneurs is not going to help the Gorge or Skamania County in the long run.

Not stated is that MOST of the construction workers, if not nearly all, will be by people from out of the area. Just travel through the trailer parks in eastern Washington and Oregon where the turbines are becoming more common than cows, and take a gander at the license plates. This project will not solve the chronic unemployment problem that Skamania County has.

The DEIS FAILS to address EXACTLY what jobs are to be filled and how many FTE's will be performed for each job. Educational or skill status is not given, nor the pay scale they will be hired into. The 8-9 or so called longer term jobs are likely technical. The uneducated unemployed are NOT going to qualify for those jobs. Given the choice, I think the jobs produced by Insitu and other entrepreneurs are what the Gorge needs for its long term economic health, not jobs based on deforestation of our timber producing areas and scenic degredation of the Columbia Gorge National Scenic Area.

Additionally, this project is being subsidized by a Sales Tax exemption to the tune of approximately 7%. This amounts to roughly 7-10 million dollars. Eight or nine longer term jobs for the State of Washington at a cost of 7-10 million dollars does not sound like a good deal for Washington or the public. A lot of economic development agencies consider a public investment cost of $5,000 dollars per full time employee a good deal. WRE would cost $1M dollars per long term employee. This is approximately 200 times more expensive than traditional goals of economic development.

Perhaps instead we should be putting those dollars toward a state in need rather than a corporation in want.

Loreley Drach
Underwood, WA

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Jobs Watch: Fresh breezes in the Gorge

Ben Jacklet
Thursday, 19 August 2010

There aren't a lot of counties in Oregon with unemployment rates lower than the national average, but there are **three of them in the Columbia River Gorge**. Even as the state's economy has stagnated, the awesome rise of the robot plane pioneer Insitu as an aerospace powerhouse and other positive developments have done wonders for communities on both sides of the river, especially in the vicinity of Hood River.

I took a drive out to tiny Bingen, Washington just across the bridge from Hood River the other day, and it was nothing like it was in the not-so-distant past. No more cheap fried chicken at the convenience store as you pass through; we're talking gluten free crust on the pizza, locally brewed beers for four and a half bucks apiece, and specialty products like goat's milk hand lotion and local honey for sale by the register.

The venue was the **Solstice Wood Fire Cafe**, just next door to Insitu, and the event was a Pub Talk sponsored by the Oregon Entrepreneurs Network's Gorge chapter. Simply hosting such an event was a breakthrough for Bingen. Klickitat County economic development director Mike Canon had this to say: "If you'd mentioned that we'd get a pub talk on this side of the river a year ago, you'd have been hanging out in too many pubs yourself."

But there they were, investors and entrepreneurs and economic development evangelists, crammed into a small room to listen.

Three Gorge-based entrepreneurs spoke: Ken Levy of **4-Tell**, Richard Halpern of **EcoApprentice** and James Martin of **Copa Di Vino**.

Former Digimarc employee Levy launched 4-Tell, his fourth startup, 16 months ago with the goal of helping companies that sell products online increase sales through recommendations. He and his team have closed $250,000 in seed capital, but it hasn't been easy. By his count he's had 68 meetings with 51 private investors, in addition to high-pressure public pitch contests before investment groups.

But he's made progress in a tough economy, and he credits his success to speed, determination and practicality. He went from concept to business plan in six weeks and began generating revenue shortly thereafter. In this economy, he says, "It's almost impossible to get money until you have a product and sales."

He's also had the wisdom to stick with professional investors who understand risk rather than friends and family who expect quick and easy returns. In addition, he received a nice "**soft circle**" boost from a local investor well known in the community. That investor, Vesta CEO Doug Fieldhouse, allowed Levy to use his name to raise money and committed to investing so long as Levy met requirements. The soft support paid off, but the road ahead remains hard.

Halpern, whose business plan involves crowd-sourcing among college students to help businesses turn environmental challenges into opportunities, is much earlier along in the game. In fact, he

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OPINION POLL

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made the unusual choice of telling attendees that he was not ready for their money. Mostly he wanted advice.

Still, his idea could have serious potential with some refinement. Asked how he planned to make money, Halpern explained, "It's a freebie until it becomes a product worth paying for, and when it becomes a product worth paying for it will be worth a lot."

Martin, the founder and CEO of Copa di Vino, comes from from a seven-generation The Dalles family, and he weighed in on the other end of the confidence spectrum. He has launched his wine-by-the-glass product in 20 states, and the 21st, California, could be huge. He believes he has solved a long-standing problem for the wine industry with a patented packaging technology that bottles wine in glasses instead of bottles. As the first company to move into the **"ready to drink"** individual servings market for good wine, Martin hopes to disrupt the market until the big wine producers cannot ignore his product, then convince the big boys to partner with him.

"We want to bottle for the industry," Martin told the crowd, noting that he already has established a partnership with **Kendall-Jackson.** "We're trying to raise a million and a half dollars over the next six months."

He didn't get a million and a half that night in Bingen, but he did receive a lot of encouragement for his enterprise, which could bring many jobs to The Dalles if things go as planned.

After the event, Martin told me that raising money in this economy has been a frustrating endeavor. But he's confident he'll succeed over time.

If he does, there will be one more reason to bet on the long-term economic future of the Gorge.

Ben Jacklet is managing editor for *Oregon Business*.

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Oregon Business has launched the first **online real-time stream** dedicated to business news on its website, OregonBusiness.com. The service will deliver unprecedented statewide business and economic information in real time. **Read more.**

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The current newsletter is available from Jordan Schrader Ramis PC, featuring "Succession Planning: Now is the Time for Gifts — Done Right"
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COMMENT LETTER 264

Michelle, Kayce (UTC)

From: [redacted]
Sent: Monday, August 23, 2010 2:12 PM
To: EFSEC (UTC)
Subject: I support Whistling Ridge

Hello Energy Facility Site Evaluation Council,

As I wrote during the public comment period in 2009, I support the Whistling Ridge project. (I live in Stevenson, WA, and I would not object to installations in my \'back yard\' either, if it were possible.)

The EIS seems to me to be thorough and comprehensive. Obviously, there are potential problems/losses associated with wind turbines; but the outcomes, as described in the EIS, seem positive to me, overall.

I would like for EFSEC and the BPA to consider one aspect that is implied by some of the findings, but not stated (as far as I could find): a \'lookback\' study by relevant staff from one or more of our state\'s universities. Such dedicated research seems to me to be a missing ingredient in many of our more far-reaching and controversial developments. I think that the scope of such a study could easily be designed by both opponents and the appropriate EIS consultants, after cost negotiations with the facility operator and the pertinent agencies.

Sincerely,
Paul Spencer
[redacted]

COMMENT LETTER 265

Michelle, Kayce (UTC)

From: Lily Burton [redacted]
Sent: Monday, August 23, 2010 5:13 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negitively Impacts Columbia Gorge

I am writing about the DEIS for the Whistling Ridge Energy Project, proposed in Washington state, along the Skamania and Klickitat county lines.

Please help us protect the Gorge for future generations. It is a national treasure. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

The photo simulations in the DEIS are inadequate and misleading. Some of them have cloudy backgrounds, thus not adequately representing the full extent of the impacts, and other simulations are out scale. Additional viewpoints need to be considered, including views from the Historic Columbia River Highway. The DEIS erroneously concludes that the scenic impacts would not be significant, even though most of the turbines would be visible from designated key viewing areas within the National Scenic Area. In addition he BPA and EFSEC have not adequately consulted with the Yakama Indian Nation to ensure the protection of cultural resources.

The Gorge is priceless. Please help protect it. Thank you very much.

Lily Burton
[redacted]

COMMENT LETTER 266

Michelle, Kayce (UTC)

From: Cliff Snell [redacted]
Sent: Monday, August 23, 2010 6:17 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negitively Impacts Columbia Gorge

I am commenting on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, along the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

The DEIS has other flaws. The DEIS fails to adequately analyze the potential cumulative impacts of this project when considered with other existing and likely future wind energy projects and other development projects in the region. The photo simulations in the DEIS are inadequate and misleading. Some of them have cloudy backgrounds, thus not adequately representing the full extent of the impacts, and other simulations are out scale. Additional viewpoints need to be considered, including views from the Historic Columbia River Highway. The DEIS erroneously concludes that the scenic impacts would not be significant, even though most of the turbines would be visible from designated key viewing areas within the National Scenic Area. In addition he BPA and EFSEC have not adequately consulted with the Yakama Indian Nation to ensure the protection of cultural resources.

Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Cliff Snell
[redacted]

Michelle, Kayce (UTC)

From: Paula Kuttner [redacted]
Sent: Monday, August 23, 2010 6:37 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negitively Impacts Columbia Gorge

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Paula Kuttner
[redacted]

Michelle, Kayce (UTC)

From: John and Polly Wood [redacted]
Sent: Monday, August 23, 2010 11:20 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

John and Polly Wood
[redacted]

Michelle, Kayce (UTC)

From: Anne Simmons [redacted]
Sent: Tuesday, August 24, 2010 7:06 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Anne Simmons

Anne Simmons
[redacted]

Michelle, Kayce (UTC)

From: Marv Binegar [redacted]
Sent: Tuesday, August 24, 2010 8:36 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Marv Binegar
[redacted]

Michelle, Kayce (UTC)

From: Dave Miller [redacted]
Sent: Tuesday, August 24, 2010 1:05 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Dave Miller
[redacted]

Michelle, Kayce (UTC)

From: Jeff Roads [redacted]
Sent: Tuesday, August 24, 2010 1:46 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Jeff Roads
[redacted]

Michelle, Kayce (UTC)

From: John Gall[redacted]
Sent: Tuesday, August 24, 2010 10:01 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am commenting on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, along the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

The DEIS has other flaws. The DEIS fails to adequately analyze the potential cumulative impacts of this project when considered with other existing and likely future wind energy projects and other development projects in the region. The photo simulations in the DEIS are inadequate and misleading. Some of them have cloudy backgrounds, thus not adequately representing the full extent of the impacts, and other simulations are out scale. Additional viewpoints need to be considered, including views from the Historic Columbia River Highway. The DEIS erroneously concludes that the scenic impacts would not be significant, even though most of the turbines would be visible from designated key viewing areas within the National Scenic Area. In addition he BPA and EFSEC have not adequately consulted with the Yakama Indian Nation to ensure the protection of cultural resources.

Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

John Gallo
[redacted]

Michelle, Kayce (UTC)

From: Joyce Leggatt [redacted]
Sent: Monday, August 30, 2010 10:35 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Joyce Leggatt
[redacted]

WR - DEIS
Late Public Comment #546

Michelle, Kayce (UTC)

From: Ian Shelley [redacted]
Sent: Monday, August 30, 2010 11:50 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Ian Shelley
[redacted]

LATE WR - DEIS
Public Comment #556

Michelle, Kayce (UTC)

From: Toby McElravey [redacted]
Sent: Wednesday, September 01, 2010 11:42 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines..

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Toby McElravey
[redacted]

WR - DEIS
Public Comment #533

Michelle, Kayce (UTC)

From: Trina Frank [redacted]
Sent: Friday, August 27, 2010 8:34 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Trina Frank
[redacted]

Michelle, Kayce (UTC) **Late**

From: Maria Hall [redacted]
Sent: Saturday, August 28, 2010 10:29 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Maria Hall
[redacted]

Michelle, Kayce (UTC) **Late**

From: Wendell Wood [redacted]
Sent: Sunday, August 29, 2010 7:33 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Wendell Wood
[redacted]

Michelle, Kayce (UTC) **Late**

From: amerinda alpern [redacted]
Sent: Sunday, August 29, 2010 1:04 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

amerinda alpern
[redacted]

WR - DEIS
Public Comment #540

Michelle, Kayce (UTC) **Late**

From: David Grant [redacted]
Sent: Sunday, August 29, 2010 11:39 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

David Grant
[redacted] [redacted]

Michelle, Kayce (UTC)

From: John Daily [redacted]
Sent: Friday, August 27, 2010 10:12 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

John Daily
[redacted]

Michelle, Kayce (UTC)

From: Leslie Burpo [redacted]
Sent: Friday, August 27, 2010 3:17 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Leslie Burpo
[redacted]

Michelle, Kayce (UTC)

From: Joy Gohl [redacted]
Sent: Friday, August 27, 2010 4:36 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am also concerned about turbine noise pollution. The DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Joy Gohl
[redacted]

Michelle, Kayce (UTC)

From: Jo McCutcheon [redacted]
Sent: Wednesday, August 25, 2010 5:46 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Jo McCutcheon
[redacted]

Michelle, Kayce (UTC)

From: Eleanor Hughes [redacted]
Sent: Wednesday, August 25, 2010 5:48 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Eleanor Hughes
Member of Friends Of Columbia River Gorge

Eleanor Hughes
[redacted]

Michelle, Kayce (UTC)

From: james thompson [redacted]
Sent: Wednesday, August 25, 2010 5:55 PM
To: EFSEC (UTC)
Subject: Whistling Ridge DEIS Fails to Protect Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

The DEIS has other flaws. The DEIS fails to adequately analyze the potential cumulative impacts of this project when considered with other existing and likely future wind energy projects and other development projects in the region. The photo simulations in the DEIS are inadequate and misleading. Some of them have cloudy backgrounds, thus not adequately representing the full extent of the impacts, and other simulations are out scale. Additional viewpoints need to be considered, including views from the Historic Columbia River Highway. The DEIS erroneously concludes that the scenic impacts would not be significant, even though most of the turbines would be visible from designated key viewing areas within the National Scenic Area. In addition, the BPA and EFSEC have not adequately consulted with the Yakama Nation to ensure the protection of cultural resources.

Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

james thompson
[redacted]

Michelle, Kayce (UTC)

From: Emile Combe [redacted]
Sent: Wednesday, August 25, 2010 5:58 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Emile Combe
[redacted]

Michelle, Kayce (UTC)

From: David S. Nichols [redacted]
Sent: Wednesday, August 25, 2010 6:00 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

David S. Nichols
[redacted]t

Michelle, Kayce (UTC)

From: Peder Bisbjerg [redacted]
Sent: Wednesday, August 25, 2010 6:01 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Peder Bisbjerg
[redacted]

Michelle, Kayce (UTC)

From: Kelley Beamer [redacted]
Sent: Wednesday, August 25, 2010 6:10 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Kelley Beamer
[redacted]

Michelle, Kayce (UTC)

From: Patricia Nagle [redacted]
Sent: Wednesday, August 25, 2010 6:14 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record. Thank you also for acting in the best interest of all in the Columbia River Gorge.

Sincerely,
Sr. Patricia Nagle

Patricia Nagle
[redacted]

Michelle, Kayce (UTC)

From: Sarah Hafer [redacted]]
Sent: Wednesday, August 25, 2010 6:16 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Sarah Hafer
[redacted]

WR - DEIS
Public Comment #397

Michelle, Kayce (UTC)

From: Claudia Arabasz [redacted]
Sent: Wednesday, August 25, 2010 6:20 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Claudia Arabasz
[redacted]

Michelle, Kayce (UTC)

From: Colleen Wright [redacted]
Sent: Wednesday, August 25, 2010 6:21 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Colleen Wright
[redacted]

Michelle, Kayce (UTC)

From: John Laursen [redacted]
Sent: Wednesday, August 25, 2010 6:23 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

John Laursen
[redacted]

Michelle, Kayce (UTC)

From: Lawrence Nagel [redacted]
Sent: Wednesday, August 25, 2010 6:24 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

We are writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

We are highly concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Lawrence Nagel
[redacted]

Michelle, Kayce (UTC)

From: Holly Bard [redacted]
Sent: Wednesday, August 25, 2010 6:26 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Holly Bard
[redacted]

Michelle, Kayce (UTC)

From: Lor Dennis [redacted]
Sent: Wednesday, August 25, 2010 6:27 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Lor Dennis
[redacted]

WR - DEIS
Public Comment #403

Michelle, Kayce (UTC)

From: Mark McCallum [redacted]
Sent: Wednesday, August 25, 2010 6:27 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Mark McCallum
[redacted]

WR - DEIS
Public Comment #404

Michelle, Kayce (UTC)

From: Christopher Duran [redacted]
Sent: Wednesday, August 25, 2010 6:27 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Christopher Duran
[redacted]

WR - DEIS
Public Comment #405

Michelle, Kayce (UTC)

From: Lynn Putnam [redacted]
Sent: Wednesday, August 25, 2010 6:35 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Lynn Putnam
[redacted]

Michelle, Kayce (UTC)

From: John C and Brenda Morris Jr [redacted]
Sent: Wednesday, August 25, 2010 6:37 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

John C and Brenda Morris Jr
[redacted]

Michelle, Kayce (UTC)

From: Norma Reich [redacted]
Sent: Wednesday, August 25, 2010 6:41 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Norma Reich
[redacted]

Michelle, Kayce (UTC)

From: Robert Henry [redacted]
Sent: Wednesday, August 25, 2010 6:55 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Robert Henry
[redacted]

Michelle, Kayce (UTC)

From: Carolyn Eckel [redacted]
Sent: Wednesday, August 25, 2010 6:55 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Carolyn Eckel
[redacted]

Michelle, Kayce (UTC)

From: Katie Bretsch [redacted]
Sent: Wednesday, August 25, 2010 7:41 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Katie Bretsch
[redacted]

Michelle, Kayce (UTC)

From: Richard Gorringe, Ph.D. [redacted]
Sent: Wednesday, August 25, 2010 7:43 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

This is a comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Richard Gorringe, Ph.D.
[redacted]

Michelle, Kayce (UTC)

From: Rosalie Sable [r[redacted]
Sent: Wednesday, August 25, 2010 7:55 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Rosalie Sable
[redacted]

Michelle, Kayce (UTC)

From: Amy Rosenthal [redacted]
Sent: Wednesday, August 25, 2010 8:01 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Amy Rosenthal
[redacted]

Michelle, Kayce (UTC)

From: Ray Wood [redacted]
Sent: Wednesday, August 25, 2010 8:02 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Ray Wood
[redacted]

WR - DEIS
Public Comment #415

Michelle, Kayce (UTC)

From: Laurie Meyer [redacted]
Sent: Wednesday, August 25, 2010 8:10 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Laurie Meyer
[redacted]

Michelle, Kayce (UTC)

From: Neal Keefer [redacted]
Sent: Wednesday, August 25, 2010 8:15 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Neal Keefer
[redacted]

Michelle, Kayce (UTC)

From: Barry Armentrout [redacted]
Sent: Wednesday, August 25, 2010 8:20 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Barry Armentrout
[redacted]

WR - DEIS
Public Comment #419

Michelle, Kayce (UTC)

From: Steven Christian [redacted]
Sent: Wednesday, August 25, 2010 9:08 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

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This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Steven Christian
[redacted]

Michelle, Kayce (UTC)

From: Jane Harold [s[redacted]
Sent: Wednesday, August 25, 2010 9:16 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Jane Harold
[redacted]

Michelle, Kayce (UTC)

From: Ron Martin [redacted]
Sent: Wednesday, August 25, 2010 9:16 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Ron Martin
[redacted]

WR - DEIS
Public Comment #422

Michelle, Kayce (UTC)

From: Frances Hannah [redacted]
Sent: Wednesday, August 25, 2010 9:23 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Frances Hannah
[redacted]

Michelle, Kayce (UTC)

From: Don Jacobson [redacted]
Sent: Wednesday, August 25, 2010 9:38 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Don Jacobson
[redacted]

Michelle, Kayce (UTC)

From: Sandra Sellevaag [redacted]
Sent: Wednesday, August 25, 2010 9:40 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Sandra Sellevaag
[redacted]

WR - DEIS
Public Comment #426

Michelle, Kayce (UTC)

From: Susan Parsons [redacted]
Sent: Wednesday, August 25, 2010 10:06 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Sincerely,

[redacted]

Michelle, Kayce (UTC)

From: judy nelson [redacted]
Sent: Wednesday, August 25, 2010 11:17 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

judy nelson
[redacted]

Michelle, Kayce (UTC)

From: Matthew Kaminker [redacted]
Sent: Wednesday, August 25, 2010 11:49 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Matthew Kaminker
[redacted]

Michelle, Kayce (UTC)

From: John Gallo [redacted]
Sent: Thursday, August 26, 2010 2:18 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

John Gallo
[redacted]

Michelle, Kayce (UTC)

From: Vicki Kolberg [redacted]
Sent: Thursday, August 26, 2010 5:14 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Vicki Kolberg
[redacted]

Michelle, Kayce (UTC)

From: Heidi Jones [redacted]
Sent: Thursday, August 26, 2010 6:14 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Heidi Jones
[redacted]

Michelle, Kayce (UTC)

From: Jane Steadman [redacted]
Sent: Thursday, August 26, 2010 6:48 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Jane Steadman
[redacted]

Michelle, Kayce (UTC)

From: Hal White [redacted]
Sent: Thursday, August 26, 2010 6:57 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Hal White
[redacted]

WR - DEIS
Public Comment #438

Michelle, Kayce (UTC)

From: Cathy Huck [redacted]
Sent: Thursday, August 26, 2010 7:05 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Cathy Huck
[redacted]

Michelle, Kayce (UTC)

From: Teresa Jones [redacted]
Sent: Thursday, August 26, 2010 7:10 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Teresa Jones
[redacted]

Michelle, Kayce (UTC)

From: Jody Ellis [redacted]
Sent: Thursday, August 26, 2010 7:32 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Jody Ellis
[redacted]

WR - DEIS
Public Comment #441

Michelle, Kayce (UTC)

From: Jean Wyman [j[redacted]
Sent: Thursday, August 26, 2010 8:02 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Friends of Colombia Gorge speaks for me.

Jean Wyman
[redacted]

Michelle, Kayce (UTC)

From: George Cummings [redacted]
Sent: Thursday, August 26, 2010 9:00 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

George Cummings
[redacted]

Michelle, Kayce (UTC)

From: Sharon Ferren [redacted]
Sent: Thursday, August 26, 2010 9:45 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Sharon Ferren
[redacted]

Michelle, Kayce (UTC)

From: Bob Workmeister [redacted]
Sent: Thursday, August 26, 2010 10:01 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Bob Workmeister
[redacted]

Michelle, Kayce (UTC)

From: ann watters [redacted]
Sent: Thursday, August 26, 2010 10:03 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.
Do this today.

ann watters
[redacted]

WR - DEIS
Public Comment #453

Michelle, Kayce (UTC)

From: fred baisden [redacted]
Sent: Thursday, August 26, 2010 11:16 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

fred baisden
[redacted]

Michelle, Kayce (UTC)

From: Linda Bjornstad [redacted]
Sent: Thursday, August 26, 2010 11:20 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Linda Bjornstad
[redacted]

WR - DEIS
Public Comment #455

Michelle, Kayce (UTC)

From: Peny Gibbons [redacted]
Sent: Thursday, August 26, 2010 11:48 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

PLEASE KEEP the GORGE the way GOD build it

Peny Gibbons
[redacted]

WR - DEIS
Public Comment #456

Michelle, Kayce (UTC)

From: Lynette Boone [b[redacted]]
Sent: Thursday, August 26, 2010 12:03 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Lynette Boone
[redacted]

WR - DEIS
Public Comment #457

Michelle, Kayce (UTC)

From: joanna bagatta [redacted]
Sent: Thursday, August 26, 2010 12:10 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

joanna bagatta
[redacted]

Michelle, Kayce (UTC)

From: Mary Anne Joyce [redacted]
Sent: Thursday, August 26, 2010 12:34 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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Mary Anne Joyce
[redacted]

Michelle, Kayce (UTC)

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Mary Anne Joyce
[redacted]

Michelle, Kayce (UTC)

From: Glenn Johndohl [redacted]
Sent: Thursday, August 26, 2010 12:35 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Glenn Johndohl
[redacted]

Michelle, Kayce (UTC)

From: Planet Glassberg [a[redacted]
Sent: Thursday, August 26, 2010 12:39 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Planet Glassberg
[redacted]

WR - DEIS
'ublic Comment #463

Michelle, Kayce (UTC)

From: Nora Polk [r[redacted]
Sent: Thursday, August 26, 2010 12:44 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Nora Polk
[redacted]

Michelle, Kayce (UTC)

From: John and Polly Wood [redacted]
Sent: Thursday, August 26, 2010 12:59 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

John and Polly Wood
[redacted]

Michelle, Kayce (UTC)

From: Cora Grey [redacted]
Sent: Thursday, August 26, 2010 1:07 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Cora Grey
[redacted]

Michelle, Kayce (UTC)

From: Debra Rehn [redacted]
Sent: Thursday, August 26, 2010 1:15 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

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Debra Rehn
[redacted]

Michelle, Kayce (UTC)

From: Jesse Yettick [redacted]
Sent: Thursday, August 26, 2010 1:54 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Jesse Yettick
[redacted]1

Michelle, Kayce (UTC)

From: Susanna Askins [redacted]
Sent: Thursday, August 26, 2010 2:32 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

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Susanna Askins
[redacted]

Michelle, Kayce (UTC)

From: Barbara Tombleson [redacted]
Sent: Thursday, August 26, 2010 2:45 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Barbara Tombleson
[redacted]

Michelle, Kayce (UTC)

From: Candace Bolen [redacted]
Sent: Thursday, August 26, 2010 3:19 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Candace Bolen
[redacted]

Michelle, Kayce (UTC)

WR - DEIS
Public Comment #474

From: Rebecca Papke [redacted]
Sent: Thursday, August 26, 2010 4:21 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Rebecca Papke
[redacted]

Michelle, Kayce (UTC)

From: Barbara Manildi [redacted]
Sent: Thursday, August 26, 2010 5:31 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Barbara Manildi
[redacted]

Michelle, Kayce (UTC)

From: liz lamade [redacted]
Sent: Thursday, August 26, 2010 5:50 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

liz lamade
[redacted]

Michelle, Kayce (UTC)

From: Trudy Maney [redacted]
Sent: Thursday, August 26, 2010 6:52 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

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I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

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Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Trudy Maney
[redacted]d

Michelle, Kayce (UTC)

From: ANN TIBBOT [redacted]
Sent: Thursday, August 26, 2010 9:18 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

ANN TIBBOT
[redacted]

WR - DEIS
Public Comment #486

Michelle, Kayce (UTC)

From: Maria Young [r[redacted]]
Sent: Thursday, August 26, 2010 9:23 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Maria Young
[redacted]

Michelle, Kayce (UTC)

From: Charles Bronson [redacted]
Sent: Thursday, August 26, 2010 9:29 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Charles Bronson
[redacted]

Michelle, Kayce (UTC)

From: Cort Brumfield [redacted]
Sent: Thursday, August 26, 2010 10:35 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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Thank you for extending the public comment period and allowing me to submit these comments into the record. Your support is just so important & appreciated.

Cort Brumfield
[redacted]t

Michelle, Kayce (UTC)

From: Kelly & Roger Wood [redacted]
Sent: Thursday, August 26, 2010 11:12 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Kelly & Roger Wood
[redacted]

Michelle, Kayce (UTC)

From: Jack West [redacted]
Sent: Thursday, August 26, 2010 11:18 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Jack West
[redacted]

WR - DEIS
Public Comment #492

Michelle, Kayce (UTC)

From: Lisa Becker [l[redacted]
Sent: Friday, August 27, 2010 3:30 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Lisa Becker
[redacted]

Michelle, Kayce (UTC)

WR - DEIS
Public Comment #496

From: Michael Stathatos [redacted]
Sent: Friday, August 27, 2010 8:25 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Michael Stathatos
[redacted]

Michelle, Kayce (UTC)

From: Corie Lahr [c[redacted]
Sent: Friday, August 27, 2010 9:49 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

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Thank you for extending the public comment period and allowing me to submit these comments into the record.

Corie Lahr
[redacted]

COMMENT LETTER 267

Michelle, Kayce (UTC)

From: Andrew Grossman [redacted]
Sent: Monday, August 23, 2010 10:00 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negitively Impacts Columbia Gorge

I am a retired Fish and Wildlife Service biologist. I have studied impacts from wind turbines powerlines on wildlife resouces. I believe the location proposed by the developer for the Whistling Ridge Energy Project is ill advised, and potential impacts are not adequately analyzed in the DEIS. Ridgeline and forested boundaries would make this area highly hazardous for resident and migratory bird populations turbine construction and operation is allowed to go forth. Wind turbine Impacts to bats are only beginning to be addressed through research and are not adequately assessed in the DEIS. I can only surmise that land ownership and political considerations are driving this proposal at this location.

Such projects should be located in open country to the east, where potential wildlife impacts are considerably reduced. Furthermore, the high cultural and historic values of this area in the early exploration and settlement of this country dating to Lewis and Clark should make any development which affects land use subect to the highest scrutiny which has obviously not been the case with regard to this project.

The DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

This proposed project does not appear to have been adequately coordinated with the Yakima Indian tribes, and thereby places Native cultural resouces at risk. I would add that coordination with the general public seems deficient, and this critical purpose of NEPA has thereby fallen short.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Andrew Grossman
[redacted]

COMMENT LETTER 268

WR - DEIS
Public Comment #384

Michelle, Kayce (UTC)

From: Norm Krasne [redacted]
Sent: Wednesday, August 25, 2010 3:42 PM
To: EFSEC (UTC)
Subject: Proposed Wind Project

Dear Sirs: Like most folks with consciences, I certainly care about preservering our energy resources and producing clean energy7. However, the proposed wind project will surely damage the scenic ridgeline bordering the Columbia Gorge National Scenic area. Moreover, the planned turbines will do damage to the wildlife of the area, especially to birds of prey. Please look elsewhere for such projects.

Thank you.

Norman Krasne
[redacted]

RECEIVED
WR - DEIS
Public Comment #385
AUG 23 2010
ENERGY FACILITY SITE
EVALUATION COUNCIL

Don C. Brunell
[redacted]

COMMENT LETTER 269

August 17, 2010

Stephen Posner
Compliance Manager
State of Washington
Energy Facility Site Evaluation Council
905 Plum Street SE, 3rd Floor
Olympia, WA 98504-3172

Andrew M. Montaño
Environmental Project Manager
Bonneville Power Administration
Public Affairs Office – DKE-7
PO Box 14428
Portland, OR 97293-4428

SUBJECT: Whistling Ridge Energy Project

Dear Mr. Posner and Mr. Montaño:

As a resident of Clark County and as one who has been involved in the decisions regarding the Columbia River Gorge since before and after the Columbia River Gorge National Scenic Areas was established, I have a deep appreciation for the Gorge and a deep awareness of what it takes to operate a successful business in the Scenic Area and in the Pacific Northwest. My family and I enjoy visiting the Gorge frequently from our Vancouver home, and we are not interested in seeing the character of the Gorge destroyed or significantly altered.

Currently, I am president of the Association of Washington Business (AWB), but I am commenting on behalf of myself. AWB is Washington's state chamber of commerce and manufacturing and technology association. Our 7,000 members employ more than 650,000 workers in our state's private sector.

Prior to joining AWB in 1986, I was Washington public affairs manager for Crown Zellerbach Corp. (CZ). At the time, CZ owned and operated the Camas pulp and paper operation just to the west of the Scenic Area boundary and owned thousands of acres of commercial timberlands inside and adjacent to the Scenic Area on both sides of the Columbia River.

I was involved in the negotiations with the state of Washington to exchange our Gorge lands with the state of Washington for state timber sale contract relief in 1982, 1983 and 1984. In that process, I learned a great deal about the forest land potential, the forest practices and view corridor considerations and alterations, the productivity of the timberlands, and the people and companies inside and adjacent to the Scenic area who are dependent upon the industry and businesses. I also came to learn that some of our forested sites along the ridge lines had higher potential for other uses such as a wind farm, although generating electricity from the wind was in its development stages.

While CZ believed that we could manage those lands and our Camas operations so as to protect the unique features of the Gorge inside and around the Scenic Area, we also worked with those who wrote the legislation establishing the Scenic Area to protect the commercial activities within and around the Gorge. We recognized this would be an ongoing challenge, but we also realized that many of our employees and their families lived in and around the Scenic Area, had jobs and livelihood which depended upon commercial activity. Therefore, it was important to maintain and preserve the

commercial viability of private and public lands and the industries and businesses within and adjacent to the Scenic Area.

I sincerely hope that the Council appreciates the unique challenges that the private sector confronts in operating within the Columbia River Gorge National Scenic Area. We fully understand the concerns of those who provide private sector jobs and generate the tax revenues for local governments and schools with and around the Scenic Area should be paramount. So, that is why I agree that SDS Lumber, a long-held family-owned business, should be allowed to move forward with its Whistling Ridge Energy Project. Further, it seems to me that it makes sense for the State of Washington to lease the adjacent ridgeline so as to extent the wind farm and allow our state, which is severely financially strapped, to earn income from the public lands for schools, colleges and universities and rural counties such as Skamania.

Those of us in Clark County are aware of the onerous requirements imposed by the Act. While much of Clark and Multnomah counties only have a peripheral stake in the Gorge, 6% of Skamania's land mass is privately held, and much of that falls within the Scenic Area. The point is when opportunities arise to enhance the economy in Skamania County, add much needed renewable electricity to the grid, and provide new family-wage jobs; we should not pass that opportunity up.

We are also keenly aware that the last monthly adjusted unemployment figure released for the Portland-Vancouver metro area was 13.3%. Rural counties are also feeling the bite of high unemployment and the Whistling Ridge Energy Project not only brings construction jobs in these recessionary times but ongoing employment maintaining the turbines and transmission system.

Council members should, if they are not already, be aware of the history behind the Act and what is becoming a remarkable and implicit disregard for the takings of property rights that the Act seems to have spawned. The bitterness which has developed since passage of the Act is troubling especially for the communities in the Scenic Area. That bitterness is regrettable and is growing. It remains because advocacy groups campaign constantly for expansion of restrictions within and extensions beyond the defined CRGNSA boundary.

The Energy Facility Site Evaluation Council has already heard considerable testimony along these lines; testimony that bears no repeating here. My point is simply that none of what has been entered into the record is supported by the legislative intent of the Act's authors, or in the language of the Act as written. The proposition that whatever can be seen from within the Scenic Area should be treated as if it were within its boundary is ludicrous. It is also outrageous. I can tell you personally that when the law was written that was never the intent.

This is outrageous because a reduction in the capacity of SDS' wind farm will render the entire project untenable. Outrageous because prohibiting SDS from pursuing the highest and best use of its lands in ways fully compatible with timber production, is a blatant property rights taking. Outrageous because Whistling Ridge, with the jobs and tax revenue and local purchases it will engender, is a private economic stimulus for a community that urgently needs one. And finally, asserting a de facto expansion of the Scenic Area boundary is outrageous because it pours salt on the wound of decades of local residents' bitterness toward the original Act despite its clearly limited mandate; there never was, nor should be, a buffer around or extension of the CRGNSA boundary.

Finally, reflecting as I do as a citizen of Washington State, I'm hopeful that the Council will, in its deliberations, take cognizance of existing state policies which promote renewable energy development.

In other words, I trust that you will reflect in your decision, the policy priorities that the Governor and Legislature not to mention the electorate through I-937 have made law.

The Stevenson family and SDS as a company are good people who work hard and provide jobs and tax revenues. They are the kind of citizens and employers that our state and region needs. They are doing the right thing with Whistling Ridge project putting the land to its highest and best use while provided needed power to our business, hospitals, schools, factories and families.

It is inconceivable to me that a few people, with their own interests in mind, will succeed in stopping a well-designed wind farm project from being built on private land that is located outside the CRGNSA on the grounds that the project defiles the Gorge. Give me a break! It most surely does not, and their claims fail to approach any standard of common sense.

I strongly urge the Council to separate what is true from what is not, from what is self-service from what is in the best interests of the working families in south central Washington and north central Oregon, and that you recommend approval for the Whistling Ridge Energy Project to the governor. We also add that we hope that approval can be expedited.

Thank you for your consideration.

Don C. Brunell
[redacted]

WR - DEIS
Public Comment #551

RECEIVED
AUG 31 2010
ENERGY FACILITY SITE
EVALUATION COUNCIL

COMMENT LETTER 270

August 26, 2010

Washington EFSEC
905 Plum Street SE
Olympia, WA 98504-3172

RE: DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, along the Skamania and Klickitat county lines.

Dear EFSEC,

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a fair and balanced alternative analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

The DEIS has other flaws. The DEIS fails to adequately analyze the potential cumulative impacts of this project when considered with other existing and likely future wind energy projects and other development projects in the region. The photo simulations in the DEIS are inadequate and misleading. Some of them have cloudy backgrounds, thus not adequately representing the full extent of the impacts, and other simulations are out scale. Additional viewpoints need to be considered, including views from the Historic Columbia River Highway. The DEIS erroneously concludes that the scenic impacts would not be significant, even though most of the turbines would be visible from designated key viewing areas within the National Scenic Area. In addition he BPA and EFSEC have not adequately consulted with the Yakama Indian Nation to ensure the protection of cultural resources.

As the Gorge Commission has recently held EFSEC must determine if this project would require any road construction or ground-disturbing activities in the National Scenic Area.

In addition to these concerns above I am worried about the impact to human health due to turbine noise and light flicker.

Lastly, EFSEC and BPA need to fix the flaws in the DEIS and issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Sincerely,

Kate McCarthy

Kate McCarthy
[redacted]

COMMENT LETTER 271

WR - DEIS
Public Comment #552

RECEIVED
AUG 30 2010
ENERGY FACILITY SITE
EVALUATION COUNCIL

Confederated Tribes and Bands of the Yakama Nation
Established by the Treaty of June 9, 1855

Post Office Box 151
Toppenish Washington 98948

Washington EFSEC
905 Plum Street S.E.
Olympia, WA 98504-3172

8-26-2010

RE: Whistling Ridge Energy Project DEIS

Thank you for providing an additional opportunity for comment regarding the Whistling Ridge Energy Project Draft Environmental Impact Statement (DEIS). The Whistling Ridge Energy Project is located within the Ceded Lands of the Yakama Nation, the legal rights to which were established by the Treaty of 1855, between the Yakama Nation and the United States Government. The Treaty set forth that the Yakama Nation shall retain rights to resources upon these lands and, therefore, it is with the assistance and backing of the United States Federal Government that Yakama Nation claims authority to protect traditional resources. Yakama Nation's comments are provided by the Cultural Resources Program (CRP) of the Yakama Nation, established by Tribal Resolution T-66-84 as an arm of the Tribal Government. Comments are respectfully submitted by those whom the Tribal Government has designated to speak on behalf of the Yakama Nation regarding the protection of cultural resources in this matter.

A Yakama Nation Traditional Cultural Property (TCP) has been identified within project boundaries on Chemawa Hill, the proposed location of turbines A1-A7. At this time, the Yakama Nation Tribal Council is meeting to discuss potential impacts, proper treatment, and recommendations regarding the TCP. These recommendations of the Tribal Council will be available by mid-September.

A report identifying the presence of a TCP on Chemawa Hill was provided to the applicant by Yakama Nation CRP in December 2009. However, despite the availability of that information to the applicant, discussion regarding impacts to the TCP were omitted from the DEIS. This omission is highly concerning. The applicant has, on numerous occasions, suggested a willingness to work with Yakama Nation, however, the omission of this important information from the DEIS, does not currently indicate a willingness to consider the Tribe's concerns.

Yakama Nation CRP was not the only agency to express concerns regarding construction of wind turbines on Chemawa Hill. Several other organizations and agencies stated similar concerns and were also omitted from the DEIS. The Skamania County Agri-Tourism Association asked that the "A Towers" be re-sited; the USDI National Park Service recommended removing the A1-A7 turbines to alleviate negative visual impacts; Friends of the Columbia Gorge identified sensitive viewsheds that would be affected by the proposal, and the USDA Forest Service Columbia River Gorge National Scenic Area expressed concerns about visual impacts of the project from key viewing areas of the National Scenic Area.

Additional comments not fully considered under the DEIS included comments from agencies such as the Washington State Department of Fish and Wildlife, which expressed concerns about impacts to bats and birds, and the Attorney General of Washington Counsel for the Environment, who requested analysis of plant and animal species and habitats. Further comments regarding impacts to the natural and cultural environment included the Washington Department of Archaeology and Historic Preservation, which discussed the TCP identified by the Yakama Nation among other topics; The Seattle Audubon Society, which brought attention to Northern Spotted owls and other avian species; Friends of the Columbia Gorge, which discussed threatened and sensitive animal species, and Save Our Scenic Areas who provided comments regarding a number of important environmental concerns.

Given the above listed omissions, the Yakama Nation does not believe that the current information provided in the DEIS has adequately analyzed the environmental impacts associated with development of a wind facility at the proposed location. Furthermore, placement of turbines on Chemawa Hill must be addressed and analyzed with the fair consideration of all concerns submitted through this process. Among the concerns identified, Yakama Nation has notified the applicant and EFSEC of the presence of a Yakama Nation TCP on Chemawa Hill. As mentioned above, this issue is currently before the Yakama Nation Tribal Council and a decision regarding the appropriate treatment of this site will be forthcoming.

The protection of traditional resources within the Ceded Lands of the Yakama Nation is of utmost importance to CRP and the Tribal Government, which it represents. Diminishing habitat caused by development has greatly increased the scarcity of traditional plant and animal resources, as well as diminished access to and altered traditionally important places. Continued and unchecked development will immeasurably harm the traditional resources enjoyed by tribal members if a true and careful analysis of impacts and alternatives is not practiced.

Sincerely,

George Colby
Attorney for the Executive Committee
Yakama Nation Tribal Council
On Behalf of the Yakama Nation Cultural Resources Program
P.O. Box 6
Toppenish, WA 98948

Michelle, Kayce (UTC)

From: Jessica Lally [j[redacted]
Sent: Thursday, August 26, 2010 3:35 PM
To: EFSEC (UTC)
Subject: Whistling Ridge DEIS comments 8-26-2010
Attachments: Whistling Ridge DEIS Comments 8-26-2010.pdf

Please see attached Yakama Nation comments regarding the Whistling Ridge DEIS. A hard copy was sent via standard mail as well.

Thank you,

Jessica Lally
[redacted]

Confederated Tribes and Bands of the Yakama Nation
Established by the Treaty of June 9, 1855

Post Office Box 151
Toppenish Washington 98948

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905 Plum Street S.E.
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8-26-2010

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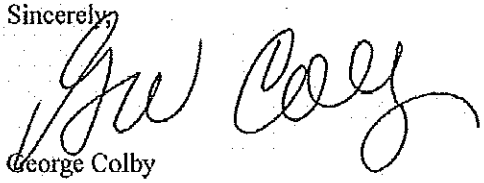
Sincerely,



George Colby
Attorney for the Executive Committee
Yakama Nation Tribal Council
On Behalf of the Yakama Nation Cultural Resources Program
P.O. Box 6
Toppenish, WA 98948

COMMENT LETTER 272

Michelle, Kayce (UTC)

From: sallie tucker jones [sa[redacted]
Sent: Friday, August 27, 2010 3:24 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Draft EIS Comments
Attachments: August 15 comments re Wind farm.docx

Hi Tammy, I hope this works. Thanks for your help, Sallie

August 26, 2010

[redacted]

Washington Energy Facility Site Evaluation Council
905 Plum Street
Olympia, Washington 98504-3172

Re: Whistling Ridge Energy Project May 2010 Draft Environmental Impact Statement

Members of the Council:

Thank you for extending the deadline for comments. Although it arrived at the very last minute, it was a generous extension and I hope that you will also extend the time you will take to review what I imagine will be the many additional submissions.

For the following reasons, as well as those that others have taken the time to bring to your attention, I strongly feel that a completely revised document must be created to stand as an accurate and unbiased presentation of information that Council members can use to make an informed decision regarding this proposal.

The existing document shows a lack of professionalism in many important areas that is inappropriate to both the SEPA/NEPA requirements and the process, as well as to the scale and potential impact of the proposal upon the region and its varied resources. Following are a few of the things that I find the most disturbing. Thank you for considering them when the Draft document is revised.

Section 1, 1.1, Pg 1 Para. 2 Interconnection and **Section 1, 2.2 Pg 4 BPA Purpose and Need for Action** I do not believe that BPA has yet responded to the request for interconnection. The nearby BPA transmission lines are at carrying capacity with a backlog of other requests for interconnection. Although the location is referred to in Section3, the precise location for the proposed Whistling Ridge Project interconnection is presently unknown, since no new transmission line has yet been constructed, nor has firm commitment from BPA to existing lines been granted. This renders the cumulative impacts assessment incomplete. It is also incomplete with respect to several other facets of this proposal as well. The BPA new line access corridor construction and interconnection costs, design and placement of any collector substation and interconnection structure, as well as an evaluation of the resulting environmental impacts of their construction and operation would be legitimate, mandatory elements for inclusion in this document.

Since BPA is partially responsible for the DEIS document, it should not be problematic for the agency to include an open and clearly understandable discussion of the agency's present interconnection problems as they relate to the current proposal, thus clarifying this aspect of the EIS. There is discussion of possibilities that were considered but rejected, however, the option finally chosen appears to be questionable, especially since BPA has offered no firm commitment.

Section 1, 2.3.2 Pg 6 ".....it is critical to locate projects in areas where transmission lines currently exist. The applicant thus needs to locate near existing high-voltage transmission , such as the FCRTS." As noted above (in Section 1, 2.2 notes), the currently existing BPA transmission line is running at capacity, with no possibility for the addition of large additional sources, such as this project's proposed output would comprise.

The critical issue regarding wind facilities is indeed appropriate siting, but not for the reason of proximity to transmission lines. The applicant (I assume this is the author) misunderstands the basic premise and need for an environmental impact statement. The lack of transparency regarding this issue is disturbing, and should be clarified in the BPA discussion of the issue, rendering this claim invalid. It should be removed from the document; it appears repeatedly in all Sections.

Section 1, 2.3.3 Pg 6 Business Needs of the Applicant An EIS is not a branch of any chamber of commerce nor is an EIS a forum for advertisement. The history of the applicant/company is already included in the Appendices. Other local background information is included in Section 3, 3.10.2.1 Historic Background and this is where it belongs. Every company has business needs but this is not the arena for such discussion. This heading and its text should be removed.

Section 1, 3.2 Pg 7 "The EIS will be used primarily to inform...." As it stands, I do not feel this document yet contains the essential information needed for informed, responsible decision-making, especially in the areas of wildlife impacts, soils/geology and cumulative impacts analysis. It must be improved significantly before it can serve its intended purpose. This may take more time, but it will certainly ensure that the final EIS is a more suitable document for unbiased decision-making, which at this point it is not.

Section 1, 3.3 and 4 Pgs 8, 9 NEPA Section 102 (2) (c) requires that alternatives to the proposed action be provided. There are **no** Action Alternatives offered in this document (the No Action Alternative is not considered a viable alternative.) Alternatives must be presented and discussed as real possibilities, not avoided by stating that alternatives were "considered but eliminated from detailed study" as is stated in Section 1, 4.3. The Applicant cannot choose to avoid this requirement. Although it is stated several times that the document "... is intended to fulfill the format and content requirements " of a joint SEPA/NEPA EIS, it falls well short in many areas.

Section 1, 4.1 Pg 9 Proposed Action The project site is stated to have a "proven, robust wind resource." There is no material to supply this "proof in the EIS document. If "robust " is interpreted to mean "good", then this statement is doubly inaccurate. The web-based National Renewable Energy Lab regional wind power mapping resource states that the proposal area provides only "marginal to fair" averaged wind resources compared to other sites in the state. The good to excellent areas are farther east. A BPA (among others)-sponsored wind mapping project on the Internet shows the area to have not particularly good wind resources as well.
The wind mapping data, referenced above, conflicts with the applicant's claim that the project site has a "'proven, robust wind resource." No scientifically stringent data is presented that supplies this "proof." This "proven, robust" ("steady") terminology appears repeatedly throughout the document and is misleading. A credible document needs to show at least an attempt at accuracy and objectivity.

There are other reasons as well, discussed on the following pages, that indicate the selected site may be a poor choice for a wind facility. Paramount to these, is the technical geologic study of the project site that has not yet, and must be been performed before suitability evaluations begin.

One of the factors that the Applicant used to identify site suitability was stated to be the "associated lack of native habitat, reducing or eliminating the need to clear additional forest land." Section 3 discusses the initial "need to clear trees to prepare ridge top sites for construction of turbine base pads and of specially configured parts delivery roadways. Information is even provided regarding where the logs will be taken after being cut. The applicant needs to choose one statement or the other and ensure that references to the eliminated statement are removed from the document as well. Which will it be? A credible document displays consistency.

A current aerial photograph of the steep (70% or more) southern side of the project area, in the vicinity of proposed turbine string A1 – A7 shows standing trees that were restricted from being cut by Washington State DNR when the applicant applied for a Forest Practices Application permit in 2003. What were the constraints that prevented this harvest? Will project approval permit the cutting of these trees, in order to clear for turbine pads and access roads, overriding the earlier DNR prohibition? The Council would need to investigate the nature of the DNR constraint before the evaluation process proceeds.

Again, mention of the alleged availability of nearby BPA transmission lines as a site selection factor: transmission lines that do not have the capacity to carry significant additional power. This issue needs to be clarified as discussed under " **Interconnection**" on pages one and two.

Lastly, the site was stated to have been chosen because it is close to an SDS mill site (even though it was stated above that no additional trees would have to be cut for the project) and to SDS business offices! Surely this declaration could be deleted lest it be concluded that convenience has a higher value than environmental factors when choosing a suitable location for a wind power facility. Perhaps if the reasoning behind the statement was elucidated, it might seem an appropriate inclusion.

Section 1, 4.1.2 states that a trench, approximately 8.5 miles long and 5 feet wide would be required to place collector cables. The DEIS mentions reseeding with of grasses and native plants, but does not mention what species, nor whether trees or shrubs that were removed would be replaced in-kind. If the plantings are to minimize noxious weed colonization would the reseeding areas be watered to ensure germination in time to counteract opportunistic germination of undesirable species? If so, the amounts used should appear in the Section 3 water use list and a watering regieme presented.

Will the removed soil be compacted as it is returned to the trench? Will the soil returned to the trench be returned in the same order that it was removed? What will the compaction guidelines entail? Who ensures that it is done properly? Since this extensive trench will likely disturb underground water flow patterns and create new, possibly undesirable flow patterns, it may be important to consider imposing certain requirements and ensuring that agency inspectors with authority to enforce , not proponents or contractors, oversee the work.

Section 1, 4.2 Pg 12 No Action Alternative To state that the No Action Alternative "would not help the state of Washington in achieving the renewable energy goals mandated by the state's Renewable Portfolio Standard" is misleading. Washington State wishes to encourage renewable energy, but not to the exclusion of all else. Site selection is probably the most important way that negative environmental consequences can be avoided, especially with respect to wildlife. Moreover, BPA does not segregate power sources. Once it is produced and fed into the collection system, it is dealt with as any business commodity, in this case by bids. Much of the power we create here is used elsewhere, historically, to California. To imply that a rejection would flout state goals and policies is simplistic and a little misleading.

"(The No Action Alternative) would help to meet the region's need for additional power in the coming years." If by "region", "local" is meant, our regions need is not great. The Columbia River, and other water-driven power-generating dams continue to supply more than ¾ of our power needs. The current trend is to improve efficiency and to encourage both business and the private sector to conservation. It has been estimated (Draft Sixth NPP, 2009) that almost 80% of our locality's future energy demands can be met in this way. Existing and newly approved wind facilities in the region, with a focus in Klikitat County, are more than adequate to make up the difference. It would be not only misleading but inaccurate to state or imply that there is a "need" for additional wind power in this portion of the Northwest.

Section 1, 4.3 Pg 13 Alternatives Considered but Eliminated from Detailed Study The applicant's response is in violation of the guidelines by virtue of not complying with the requirement to supply Alternatives. As mentioned above, an EIS requires that alternatives be provided and considered, with accompanying data and analysis to match all of the other Action Alternatives presented.

Section 1, 4.3.1 Pg 13 Alternative Project Locations The contents of this portion are redundant. Again, it avoids the EIS requirement regarding Alternatives. The points made here have all been stated previously (Section 1, 4.1), in the same bulleted form and with almost the same wording.

Section 1, Table 1 Pg 22 Earth: Construction: Design and Mitigation Measures All of the Design and Mitigation Measures listed are "would be" statements. They "should be" already part of the EIS! If, for instance there was a critical subsurface condition, it needs to be known and factored into the decision process, not "discovered" after approval. Only in this way can accurate and responsible evaluation occur. Because of the difficult terrain, there would appear to be very little possibility for adjustment, should geologic constraints be revealed initially. This could easily endanger the viability of the project, which underscores the importance of having data collected from rigorous studies, and analysis conducted by respected sources. Even with the added benefit of such information, the impacts of such radical alterations to a fragile topography can only be guessed. Stringent geologic study of the proposed site must be performed now and the results reported in another, hopefully improved Draft document. This information will be essential for the Council's evaluation. Without it, the process will have no merit.

Section 1, Table 1 Pg 22 Earth: Construction and Operation – The considerable alterations to the terrain that are proposed for this project - 8.5 miles of three to four foot deep, five foot wide trenches for cable burial, 30-foot deep turbine pads that will require leveling with machinery and extensive blasting to excavate, the building of adequate access and delivery roadways on steep slopes - will certainly have more impacts, and ones that influence each other more closely, than

those listed. The changes made to accommodate the towers will forever alter the ridge tops and they will not revert to their pre-construction profiles after the project is decommissioned. It is inaccurate as well as disingenuous to state that the project construction requirements would be "minor to moderate."

Why is volcanic ash deposition of such concern that it is mentioned here? Granted, several of the soils present do contain a volcanic ash component, but it is not clear to me why this appears, since there is no control over the possible event and, depending on the severity of an ash fall, no mitigation measures would be possible. Large amounts of ash could be physically removed, but would that be mitigation?

Does the statement regarding mass wasting " No obvious recent mass wasting features" imply that there is evidence of the phenomena having occurred on the site in the not-so- recent past? If so, then this is another reason why a more thorough geologic assessment be conducted, **before** the project is evaluated by the Council.

Although the soil type present on part of the project site has low liquefaction potential, massive excavation and refill, as in the 8.5 mile trench , may disturb soil structure enough to render the possibility greater than in the undisturbed state. Although liquefaction of soils are generally associated with earthquake activity, a similar phenomenon may result when soils become over-saturated. As mentioned above, there is no doubt that the proposed excavated and refilled trench will impact and redirect existing subsoil water flows for 8.5 or more miles and may potentially influence an area far greater than the area of the trench. It is also possible that drainage may be improved in the trench after refill, but the possibility that it will not, must be at least considered.

Section 1, Table 1 Pg 22 Water: Construction and **Operation** On-site development will certainly impact ground and surface water drainage patterns as indicated above. It is well- recognized that new roadbeds alter water flow significantly and are responsible for a good deal of continuing erosive runoff. The replacement of natural soil and rock drainage on the site with impervious concrete pads constitute large surface areas that will prohibit slow drainage. Water will be quickly released from these surfaces in large quantities at approximately the same time, limiting the remaining soil's ability to absorb and release it slowly. Some of the remaining soil may be additionally compacted from heavy construction machinery, limiting even more its ability to absorb rainfall and melting snow slowly.

Section 3 downplays the impact these impervious surfaces may have upon soils, but this need to be seriously examined. Each of the 49 tower pads have a diameter of 60 feet, creating 2920 square feet of impervious surfaces at the top of steep ridges. , These conditions produce fast runoff accompanied by high erosion which, over time may lead to catastrophic geologic events, as well as degrade waterways used by fish, amphibians and invertebrates. Amend this inaccurate denial of the project's impacts to ground and surface waters. A discussion, or at the very least a mention of the runoff potential should be presented, as well as possible impacts to the larger streambeds below, with potential to impact fish, amphibians and invertebrates, upon which fish depend for food. Larger game and non-game animals may be impacted as well through water quality degradation and the possible inability to even reach water. The standard BMP guidelines will not be adequate for this anticipated situation. In recognition of this, an individual plan to accommodate the special runoff problems of the project could be developed as part of a mitigation plan, implemented and monitored by an agent other than the applicant/contractors, if

the project is approved. The cumulative impacts discussion should deal with this possibility as well, but does not.

Section 1, Table 1 Pg 24 Biological Resources: Construction Soil compaction is an undesirable and irreversible impact that should be acknowleged since it affects soil drainage, the ability of certain plants to grow well and limits the species of plants that will grow.

In addition to "loss of suitable habitat," abandonment of adjacent suitable habitat due to construction activity should be considered a likely possibility. Some bird, mammal and invertebrate species are known to be more sensitive to intrusive activities, including noise, than others. Several of these species are listed as being present in the project area. Add "abandonment of suitable habitat due to construction activity" to the list on page 24.

Section 1, Table 1 Pg 24 Biological Resources: Operation "There would be some mortality to birds and bats due to turbine collision and displacement, though not in sufficient numbers to affect population viability." I restrain myself when I say that this statement is offensively inaccurate. It also reveals the applicant's misunderstanding of the "cumulative impact" concept. As wind farms proliferate in our region, the cumulative mortalities become increasingly significant for individual populations, regardless of their population status.

Just because there have been no studies addressing bird population declines in association with wind installations does not mean that one has a legitimate claim to deny that such a relationship may exist.

The bat studies cited, employed equipment that was not capable of determining the bat species e present. How then, can an assessment of a particular population be made? Or, by extension, a statement regarding population viability? What authority provided the status information for each population? What is the source of data for western bat species population size? Eastern bat species are being threatened with mass extinctions from White Nose Syndrome, the etiology and causative organism of which is still unknown. The disease has not yet reached the western states; because of this, it is essential that ALL western bat populations be given added protection, regardless of their population status. The bat study data is inadequate in certain respects; the study plan assumptions were not adequately rigorous, there were discrepancies in data collection procedures from year to year, making comparisons and data merging ineffective; long-term sampling frequency was sparse. At the very least, a repeat survey should be conducted which would identify bat species.

The Columbia River Flyway is a major East to West migration route that has likely been used longer than mankind has been here. Raptors are known to use mountain ridges for North/South travel as well as for hunting in this part of the Columbia River. People come from many places outside of this area specifically to see the variety of birds that congregate and fly through this river corridor, some stopping to feed for a few days or weeks before moving on. This site would be an unconscionable choice for a development of this kind, with this knowledge.
"No impacts to listed species" – is this a wish, or a promise from an unknown deity? How can it possibly be known ahead of time that a listed species will not be impacted; especially when inadequate studies have failed to identify what species use the area and with what frequency? And when only a two year start-up mortality study is planned? This is not enough time to obtain meaningful data much less to make any conclusions from the data. The project location would be

an especially difficult one for such monitoring due to the terrain and planned forestry understory management activities. A recent eastern U. S. mortality study is employing dogs to find bat carcasses, because they are so difficult to locate by eye, even in dry flat grassland.

There is no body of information available documenting how wild animals might respond to the sound of wind turbine propellers. This should be at least briefly discussed and dealt with as a possible impact.

Section 1, Table 1 Pg 24 Biological Resources: Design and Mitigation Measures "In order to avoid or minimize impacts to any raptors potentially nesting on or near the project site, a raptor nest survey would be conducted ....." Then what? A survey is not a mitigation measure.

The composition of the proposed Technical Advisory Committee members is not well thought out. Entities or personages that have vested interests or have demonstrated no interest, cannot be relied upon to make responsible, nor to make informed mitigation recommendations. To include the developer on such a committee would be unwise as well as unfair to the resources. If this route is pursued, enforcement capabilities must be granted and there must be a preponderance of resource advocates as committee members. TAC groups are by reputation, generally ineffective when they have no powers. They are also rendered ineffective if members have conflicts in interest, as counties and developers often do. This would be a great opportunity to cast aside TACs, breaking out of the customary mold and devising a new and more effective way to resolve monitoring and mitigation issues associated with such a project.

"For potential impacts to big game species (deer and elk) coordination with WDFW will occur if appropriate." Again, just to mention something does not comprise a mitigation measure. What about bears, and large cats? Who decides if a situation is "appropriate" warranting consultation? Under what circumstances would it be appropriate to coordinate? The project location is a designated wintering area for elk. What plant species are present that elk might use for winter forage? Will these species be replanted and therefore present in adequate quantities to continue to serve as winter forage during construction and operation of the proposed project? These considerations must be treated responsibly somewhere in the document. The quoted statement is vague and obtuse. It leaves the reader with **no information** about how big game species ' use of the area will be approached, nor does it correct nor solve any problems big game species may have because of the project.

Section 1, Table 1 Pg 25 Energy and Natural Resources: Operation The "Minor quantities of lubricating oils....." should be specifically quantified, if only as an estimate, to be consistent with the remaining listed items.

Section 1, Table 1 Pg 25 Environmental health: Construction The project is located at the southern end of a wide contiguous band of lands termed "Fire-prone Landscape Management Strategy Area" by a USFWS 2008 Final Spotted Owl Recovery Plan map. This area runs from the Columbia River north to the Washington-Canada border. The increased risk of fire during the summer months must be seriously considered and aggressive prevention measures **above the usual standards** should be pursued and stipulated.

Prohibitions on conducting potential spark and fire-generating activities during the driest fire danger periods of the year could be part of a plan keyed to this project and would demonstrate

care and concern for nearby communities. A several month delay in certain construction activities and equipment use as a result of time-of-year prohibitions would be well justified and need not halt all building progress.

There WILL be blasting activity in association with this project, if approved. Getting rid of the "may" and "could" in the bullet dealing with blasting would be a more honest way of stating the realities of the massive environmental reshaping that this project will engender. If "Blasting could also create a fire hazard during dry weather", then this activity should be curtailed during these periods. Likewise, an activities plan related to the regional weather patterns might suggest avoiding blasting during unusually wet times of the year to avoid problems similar to those encountered recently along Hwy 14. There is no doubt that the level of blasting activity alone has the potential to seriously destabilize this particular environment, which, as noted elsewhere, already has nearby unstable loci. Since there is no geologic assessment data provided, it is impossible to even guess what impacts such activity could produce. When the geologic assessment is conducted, it should address not only immediate impacts but the potential long-term impacts of blasting, even although this would only be predictive. Road department records from Underwood and Hwy 14 should give the Council a good idea of the areas' historic instability.

Section 1, Table 1 Pg 25 Environmental health: Construction (Column 4} The second, bulleted statement in column 4 implies that a fossil-fuel- powered facility might supply fill-in power when a wind facility is unproductive (and that it would carry a higher risk of fire.) There is a federal requirement mandating that alternative power source facilities must accompany any new wind facility, based upon the amount of power generated. The proposed wind project would generate above the MW threshold, requiring the construction of an alternative power-generating facility to balance a wind farm's unproductive periods of no wind or too high wind. The construction cost of this requirement building, inter-tie costs, should certainly be included in the cost analysis for this project, but it does not appear. Since the alternative power facility is a requirement , its location should be identified and the associated environmental impacts need to be included in the EIS, including the cumulative impacts portion.

Section 1, Table 1 Pg 26 Environmental Health: Operation Again, with respect to fire potential, local ordinances and other regulations and standards are not directed to such a project, and are not adequate, because of the unusual situation. An individually tailored, aggressive fire prevention plan and response tactic needs to be developed for the construction and operation phases of this proposed project. Relying on existing regulations will not adequately address the specific potential hazards nor protect the nearby population and environment.

"...none of the planned turbines are within 2,500 feet of existing residences." This is not correct; there is one residence. Mitigation measures should be included in the proper column.

"EMF from the project ...would have no health and safety impacts." I do not see any information in the document to support this assertion. There is certainly study regarding the issue, but conclusions are not definitive at this time. Can a pronouncement be made if there is inadequate documentation? Unless this can be produced, this statement needs to be removed or qualified in some manner in order to be objective.

Section 1, Table 1 Pg 27 Noise: Construction This section downplays construction noise, which will carry well into the valleys and bounce off of adjacent hillsides. Although construction is stated to occur during daylight hours, it will likely begin very early and continue through dusk.

The added noise of myriad transportation trucks will certainly impact local residents on a daily basis and should be included in the list.

The noise from blasting will certainly be noticeable and will last for awhile. In thoroughness, it should also be mentioned.

Section 1, Table 1 Pg 27 Noise: Operation An in-depth submission regarding wind turbine noise impacts upon humans has been submitted. Please consider it as a counter to the data presented in the EIS and take appropriate action to modify the table.

Section 1, Table 1 Pg 33 Socioeconomics: Operation There are several studies that identify undesirable affects of turbines upon humans (see K. Brown's testimony citations). One would not unreasonably conclude that properties in close proximity to such turbine arrays might be less desirable for habitation, at least to a percentage of the population. Proponents of wind power have issued statements derived from studies indicating that property values are not adversely affected by nearby wind turbines. As such studies continue, depending on the analyses, certainly there is the possibility that property values may be affected one way or another, but for now either position can support and document its claims.

Section 1, 7 Pg 34 Summary of Unavoidable Adverse Impacts : Earth The enormously disruptive activity that will be required to complete this project, located in a geologically fragile environment that has already been subjected to considerable alteration, is very likely to respond with undesirable events. In potentially susceptible areas, no amount of "careful design" can prevent, nor can "mitigation measures" restore, areas where mass wasting has occurred. It should be added to the list of potential adverse impacts, especially since evidence of such an event was documented during a previous survey. The severe re-contouring, blasting, large-scale trenching and creation of impervious surfaces all increase the likelihood of minor or major responses from the environment. The soil types in some areas are acknowledged to be susceptible to erosion and the proposed "A" array is located precisely along a Class II (High Landslide Hazard Area) ridgeline. To dismiss these and other known geologic concerns with the two brief dismissive statements presented is unacceptable. Until a reputable geologic assessment study is performed, there will remain a glaring gap in this arena. Without professional scientific data, any predictive statements can only be considered arbitrary and of dubious merit.

Section 1, 7 Pg 34 Summary of Unavoidable Adverse Impacts: Air Quality Construction activity would involve many more pieces of diesel-fueled machinery than any logging operation. It is absurd to think that the residents of the town of Underwood will not notice, nor be affected by, a continuing stream of diesel trucks heading up and down the roads every day for months. Peak morning hour numbers of trucks are estimated to be 210/hr for 3-5 months. Further, all major construction equipment is to be diesel-powered (Section3 Table 6-5, Pg 109 Fire and Explosion Risk Mitigation.) It is disingenuous to claim that this would be comparable to "existing logging operations.", and equally so to state that "the project would contribute to a beneficial impact on overall air quality" Climatological data presented in the EIS indicates that the area is prone to air stagnation at all times of the year, but especially during the summer when pollutants from downriver may collect forming considerable haze. Even if this statement refers to the completed project, it is a bit of a stretch to claim "beneficial impacts on overall air quality" when the requirement to build alternative fuel power plants are a direct result of building wind powered

facilities. With this in mind, it might be fairer to consider that project would lead to a decline in overall air quality.

Section 1, 7 Pg 34 Summary of Unavoidable Adverse Impacts: Biological Resources See previous comments regarding bats and birds (Section 1, Table 1 Biological Resources: Operation.) The Summary statement simply reiterates the document text statements, almost word for word, imparting the same inappropriate lack of concern. Why are no other wildlife groups mentioned? Certainly animal corridors will be interrupted, the areas in which young are raised may be pushed further away and populations may become fragmented. Even with the proposed mitigation measures in place, erosion runoff would affect the fishery and invertebrate communities downhill of this project. Blasting may obliterate pika or marmot populations that may have been overlooked. No mention of them occurs in the animal surveys. These could be significant impacts unless there is some oversight to ensure that mitigation measures are maintained to the standard for the duration of construction. Often, self-policing measures produce initial compliance, but over time may be seen to deteriorate.

Section 1, 8.2 Para 1 Pg 37 The last sentence in this paragraph appears to more of a running prepositional phrase. It is awkward and could be recast for a more professional presentation.

Section 1, 8.2 Para 2 Pg 37 The first sentence of the second paragraph is incomplete and needs structural as well as subjective clarification.

The last sentence of this paragraph still stretches my imagination – how will "introducing up to 75 MW" of wind power "contribute to efforts to improve air quality in the Columbia River Gorge vicinity?" If anything, fossil-fuel facilities will be **added** (producing a negative effect upon air quality) to make up for the irregular output of this wind facility.

Section 1, 10 Pg 38 References Again, BPA's Wind Integration Plan might be an excellent addition to the references section if it might clarify the line access and interconnection issues.

Section 2, 1.4.1 Pg 9 Construction Activities "Transportation of construction materials" (gravel, concrete, rebar, etc.) could be added to the list but "Use of dynamite and machine re-contouring of ridges" should be added to the list.

Section 2, 1.4.2 Pg 12 Construction Schedule Earlier portions of the document state a construction time of one year. This section states "approximately 15 months" would be required for construction ; all other sections repeatedly mention one year. Consistency throughout the document would enhance credibility. Are the construction cost estimates based upon 12 or "approximately 15 months?" The suggested time-of-year prohibitions to pro-actively address fire danger could be inserted into the detailed construction schedule, possibly changing the time frame even beyond 15 months.

Section 2, 1.4.4 Pg 13 Construction Costs An extra three months or more added to the construction time estimate of one year stated early in the EIS will add to the construction cost estimate presented in Section 2, 1.4.4 Pg 13, assuming that it is based upon a 12-month time frame.

Another cost that has not been discussed, although it may not be considered a bona fide construction cost, is that of the required alternative/fossil fuel facility that would make up for non-production times at the wind facility. Interconnection, substation and line link costs associated with this facility should be also be added and later considered in cumulative impact analyses. The total cost of building an alternative power supply facility to offset erratic wind generation is possibly not the responsibility of the applicant, but possibly some monetary responsibility exists? Who pays for the construction of such a facility? Is the cost partially subsidized? If so, by whom?

Section 2, 1.5 Pg. 14 Project Operations The project is stated to "operate 24 hours per day, seven days per week," implying that generation also occurs on that schedule. It might be a bit more objective to modify the statement to reflect the reality of wind power generation for those who do not know.

Is there any capability
The first U. S. study of reduced (bat) fatalities and economic costs of "low-wind mitigation" began in 2008,continued in 2009 and 2010. The research is being conducted in Pennsylvania with Casselman turbines and has demonstrated that bat fatalities were reduced an average 73% when turbines were left off-line, at night, during low wind conditions (<11.2 – 14.5 mph). An additional benefit to bats was to use the nighttime limitation during the migration season in the fall. The second year of the study, 2009, was funded wholly by USFWS. I will provide the Council with the citations. The calculated loss of production resulting from the temporary stoppage in that area of the country was 0.3 to 1.0% of the facilities' yearly output.

Some studies have indicated that certain individual towers in an array produce more mortalities than others. Will this project have the capability of shutting down a single turbine? Will it be possible to shut down individual arrays in this project? Will the strategy above be a possibility for these turbines or is their operation wholly automatic? What would the cost difference be if this capability was part of the design plan for these proposed turbines? This approach might be one that could be applied to bird mortality as well.

Section 2, 3 Pg 19 Alternatives Considered but Eliminated from Detailed Study As in Section 1, the applicant has substituted a list of self-generated criteria instead of fulfilling the mandated subject matter identified in the heading.

Section 3, 44.1.5 Special Status Wildlife Species Northern Spotted Owl Although the two historical northern spotted owl nesting sites at Moss and Mill Creeks, near the northern boundary of the proposed project are not believed to be presently occupied, these areas still carry the potential for occupation and use. Little is known about long-term northern spotted owl reoccupation patterns and current agency attempts to halt population declines are not encouraging. Forested habitats that have supported northern spotted owls in the past are likely to support a diverse suite of life forms and hold the potential to support one another, given enough space.

The proposed project is located within one of Washington States ten designated SOSEAs (Spotted Owl Special Emphasis Areas.) Although the project location and proposed construction activities do not impinge upon the parameters specified in the state regulations regarding SOSEAs, a favorable decision for this proposal would lead to extensive re-contouring and dynamiting the

outer boundary of a select habitat resource. Regardless of the legality of the proposed actions, to actually go ahead with the proposed habitat alterations would seem to flout the intent of the regulation. Eliminating the northern portion of the B array and the entire C5 to C8 array might allow the outer edges of the historic nest range that overlap the project boundary some protection as well as respect the spirit of the SOSEA. This might even serve as one of the as-yet-unsupplied Action Alternatives.

It is interesting and disturbing at the same time, to see the large list of of bird and mammal species observed at the proposal site and to realize that a number of them are "threatened," federal species of concern, or Washington State candidates for listing. Townsend's big-eared bat is both a federal species of concern and a Washington State Candidate for listing, although the incomplete bat studies conducted at the proposal site did not determine bats to species, it is a possibility that this bat may be using the area as well as Keen's Myotis, another Washington State Candidate for listing.

Although it is acknowleged in **Section 3, page 81** that "Some bat fatalities are anticipated as a result of the operation of the proposed project" the only mention of bats in **Section 3, 4.3 Mitigation Measures** is to minimize turbine lighting "thereby reducing the potential for birds and bats to be disoriented by lights....." Bats are not attracted nor disoriented by lights, although they are attracted by some night-flying insects that are. Essentially then, there is no mitigation measure directed toward bat mortalities; should there not be one suggested? If one cannot be suggested then it is assumed that the proposed project's bat mortalities will have to be considered unavoidable.

On the next page, **Section 3, 4.4 Unavoidable Adverse Impacts**, the second paragraph states that bird and bat mortalities will occur, but that "the level of mortality is not anticipated to be sufficient to negatively affect the population viability of any single species." This fallacy of this statement has been discussed before (page 5); the Applicant has presented no credible documentation to support such a claim. As wind farms proliferate in our region, cumulative mortalities become increasingly significant for individual populations, regardless of their population status. In this case, since population status is an unknown, it would not be possible to make a statement about viability.

Section 3, 4.4 Unavoidable Adverse Impacts, Paragraph three "It appears unlikely that the project would cause any mortality to a threatened or endangered species." Northern goshawks, golden and bald eagles were reported to be present at the proposed turbine sites. This project has an operating time estimate of 30 years. Even a non-statistician might consider the" likelihood" of such an event over thirty years to be at least "somewhat likely." Death can occur from a rare visitation, as well as from frequent visitations and although the number of mortalities may be small, the cumulative impacts for certain bird and bat species could affect overall species survival.

Section 3, 5.2.1 Pg 89 Impacts: Proposed Action: Construction There is no mention of re-using the material removed from blasting in order to lessen the need for 100,000 yards of gravel the project is expected to require. Is this a possibility?

Section 3, 5.4 Pg 92 Unavoidable Adverse Impacts The proposal is stated to have "minor unavoidable adverse impacts to energy and natural resources." The crushed rock requirement by

itself (100,000 yards) would deplete local supplies and possibly drive prices higher locally after construction since it might have to be hauled from greater distances.

The preceeding statement is immediately followed by another, claiming that "The overall impact of the project to energy and natural resources would be positive since it would provide the region with low-cost, clean, renewable energy..." etc. This has been commented on previously. The power generated from the proposed facility will not necessarily be used in this region due to the nature of BPA's power brokering activities. Our region's power costs in the past were indeed comparatively inexpensive, but prices are not low now, nor will they be in the future. P.U.D. newsletters have been explaining this fact to customers for several years. There is a growing discussion about making power costs equal across the country, so that those living in "power-poor "areas will not be unfairly penalized. Clean? Not as clean as solar, and certainly this proposal will require radical environmental destruction.

Section 3 14.3 Pg 269 Cumulative Impacts Rhetoric, political pressure, or private interest should never be allowed to override thorough and thoughtful, unhurried evaluation. Scientific rigor is essential to the cumulative impacts analysis. I am very sorry to see this section displaying an alarming number of mis-statements as well as faulty logic. Some of these statements have been carried over from Sections one and two, but there are several statements introduced in Section 3, clearly meant to justify the EIS's approach to the cumulative impacts analysis, that are simply a result of poor logic and misapplication of conclusions or data that has been taken out of context.

One example is a statement that appears on page 274 of Section 3, and is partially quoted below. The NAS Mid-Atlantic Highlands study conducted in 2007, only three years ago is not as relevant (in 2010)for analysis of cumulative impacts to wildlife, especially birds and bats; the rapid pace of wind power development has changed the dynamic entirely not only in the location of the study but especially in the northwest, making this study unsuitable for cumulative impact use in this EIS. This study moreover, quoted in the EIS in **Section 3, Pg 2, 74 Bird and Bat Species** (last sentence in paragraph 2), concluded that "for rare and local populations" the predicted level of fatalities when combined with all other man-made sources of mortality could affect population viability." This statement was made three years ago. Note that the study referred to predictions of mortality, not documented mortalities per se. It has been found that predictions in the arena of wind power mortalities have often been underestimated.

The "other man-made sources of mortality," contrary to the opening statement in paragraph three **(Section 3, Pg 274 Bird and Bat Species)** is hardly an "inherent difficulty" to a cumulative impacts analysis focusing on wind turbine mortalities. The "other man-made mortalities" are merely ancillary; they existed before wind turbine facilities and comprise a background level inherent to our cultural lifestyle. The "cumulative" aspect of the bird and bat analysis attempts to determine what impact wind turbines have regionally, to sometimes unknown population numbers of migrating, foraging and, nesting species.

State protections, USFWS and other specific, reputable wildlife data also must be considered in the analysis, as should a comparison analysis of costs. Although it is difficult to attribute monetary values to wildlife resources, standards are available to do so.

An essential element in any study is the study plan. Basic assumptions must be scientifically (logically) rigorous and the data collection schedules equally well-planned in order to produce

meaningful results. Data collection on wildlife takes many years. Conclusions from the results of such studies must employ scientific rigor. This is where peer-reviewed papers and respected sources can assist reviewers. To ensure adequately broad and equitable cumulative impacts analysis for this proposed project, it would be appropriate to engage another analyst, other than those that have already provided information and conclusions in association with this proposal. There are well-respected scientists available who would be able to perform this service with expertise and lack of bias. I strongly recommend this action, and the inclusion of such a consultation in the final EIS document.

I have made my points along the way, as I followed through the EIS document and will not summarize my concerns. I realize that this may be an inconvenient way to deal with such a large amount of material, but this is page 14 already! The specific shortcomings of the cumulative impacts section are noted throughout this letter but my main concern is for the apparent lack of understanding about what it should be, and to the lack of critical logic used to justify some of the conclusions.

Thank you for the opportunity to comment further and for considering my comments.

Sincerely,

Sallie Tucker Jones

WR - DEIS
Public Comment #513

Michelle, Kayce (UTC)

From: sallie tucker jones [redacted]
Sent: Friday, August 27, 2010 3:24 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Draft EIS Comments
Attachments: August 15 comments re Wind farm.docx

Hi Tammy, I hope this works. Thanks for your help, Sallie

August 26, 2010

[redacted]

Washington Energy Facility Site Evaluation Council
905 Plum Street
Olympia, Washington 98504-3172

Re: Whistling Ridge Energy Project May 2010 Draft Environmental Impact Statement

Members of the Council:

Thank you for extending the deadline for comments. Although it arrived at the very last minute, it was a generous extension and I hope that you will also extend the time you will take to review what I imagine will be the many additional submissions.

For the following reasons, as well as those that others have taken the time to bring to your attention, I strongly feel that a completely revised document must be created to stand as an accurate and unbiased presentation of information that Council members can use to make an informed decision regarding this proposal.

The existing document shows a lack of professionalism in many important areas that is inappropriate to both the SEPA/NEPA requirements and the process, as well as to the scale and potential impact of the proposal upon the region and its varied resources. Following are a few of the things that I find the most disturbing. Thank you for considering them when the Draft document is revised.

Section 1, 1.1, Pg 1 Para. 2 Interconnection and **Section 1, 2.2 Pg 4 BPA Purpose and Need for Action** I do not believe that BPA has yet responded to the request for interconnection. The nearby BPA transmission lines are at carrying capacity with a backlog of other requests for interconnection. Although the location is referred to in Section3, the precise location for the proposed Whistling Ridge Project interconnection is presently unknown, since no new transmission line has yet been constructed, nor has firm commitment from BPA to existing lines been granted. This renders the cumulative impacts assessment incomplete. It is also incomplete with respect to several other facets of this proposal as well. The BPA new line access corridor construction and interconnection costs, design and placement of any collector substation and interconnection structure, as well as an evaluation of the resulting environmental impacts of their construction and operation would be legitimate, mandatory elements for inclusion in this document.

Since BPA is partially responsible for the DEIS document, it should not be problematic for the agency to include an open and clearly understandable discussion of the agency's present interconnection problems as they relate to the current proposal, thus clarifying this aspect of the EIS. There is discussion of possibilities that were considered but rejected, however, the option finally chosen appears to be questionable, especially since BPA has offered no firm commitment.

Section 1, 2.3.2 Pg 6 ".....it is critical to locate projects in areas where transmission lines currently exist. The applicant thus needs to locate near existing high-voltage transmission , such as the FCRTS." As noted above (in Section 1, 2.2 notes), the currently existing BPA transmission line is running at capacity, with no possibility for the addition of large additional sources, such as this project's proposed output would comprise.

The critical issue regarding wind facilities is indeed appropriate siting, but not for the reason of proximity to transmission lines. The applicant (I assume this is the author) misunderstands the basic premise and need for an environmental impact statement. The lack of transparency regarding this issue is disturbing, and should be clarified in the BPA discussion of the issue, rendering this claim invalid. It should be removed from the document; it appears repeatedly in all Sections.

Section 1, 2.3.3 Pg 6 Business Needs of the Applicant An EIS is not a branch of any chamber of commerce nor is an EIS a forum for advertisement. The history of the applicant/company is already included in the Appendices. Other local background information is included in Section 3, 3.10.2.1 Historic Background and this is where it belongs. Every company has business needs but this is not the arena for such discussion. This heading and its text should be removed.

Section 1, 3.2 Pg 7 "The EIS will be used primarily to inform...." As it stands, I do not feel this document yet contains the essential information needed for informed, responsible decision-making, especially in the areas of wildlife impacts, soils/geology and cumulative impacts analysis. It must be improved significantly before it can serve its intended purpose. This may take more time, but it will certainly ensure that the final EIS is a more suitable document for unbiased decision-making, which at this point it is not.

Section 1, 3.3 and 4 Pgs 8, 9 NEPA Section 102 (2) (c) requires that alternatives to the proposed action be provided. There are **no** Action Alternatives offered in this document (the No Action Alternative is not considered a viable alternative.) Alternatives must be presented and discussed as real possibilities, not avoided by stating that alternatives were "considered but eliminated from detailed study" as is stated in Section 1, 4.3. The Applicant cannot choose to avoid this requirement. Although it is stated several times that the document "... is intended to fulfill the format and content requirements " of a joint SEPA/NEPA EIS, it falls well short in many areas.

Section 1, 4.1 Pg 9 Proposed Action The project site is stated to have a "proven, robust wind resource." There is no material to supply this "proof in the EIS document. If "robust " is interpreted to mean "good", then this statement is doubly inaccurate. The web-based National Renewable Energy Lab regional wind power mapping resource states that the proposal area provides only "marginal to fair" averaged wind resources compared to other sites in the state. The good to excellent areas are farther east. A BPA (among others)-sponsored wind mapping project on the Internet shows the area to have not particularly good wind resources as well.
The wind mapping data, referenced above, conflicts with the applicant's claim that the project site has a "'proven, robust wind resource." No scientifically stringent data is presented that supplies this "proof." This "proven, robust" ("steady") terminology appears repeatedly throughout the document and is misleading. A credible document needs to show at least an attempt at accuracy and objectivity.

There are other reasons as well, discussed on the following pages, that indicate the selected site may be a poor choice for a wind facility. Paramount to these, is the technical geologic study of the project site that has not yet, and must be been performed before suitability evaluations begin.

One of the factors that the Applicant used to identify site suitability was stated to be the "associated lack of native habitat, reducing or eliminating the need to clear additional forest land." Section 3 discusses the initial "need to clear trees to prepare ridge top sites for construction of turbine base pads and of specially configured parts delivery roadways. Information is even provided regarding where the logs will be taken after being cut. The applicant needs to choose one statement or the other and ensure that references to the eliminated statement are removed from the document as well. Which will it be? A credible document displays consistency.

A current aerial photograph of the steep (70% or more) southern side of the project area, in the vicinity of proposed turbine string A1 – A7 shows standing trees that were restricted from being cut by Washington State DNR when the applicant applied for a Forest Practices Application permit in 2003. What were the constraints that prevented this harvest? Will project approval permit the cutting of these trees, in order to clear for turbine pads and access roads, overriding the earlier DNR prohibition? The Council would need to investigate the nature of the DNR constraint before the evaluation process proceeds.

Again, mention of the alleged availability of nearby BPA transmission lines as a site selection factor: transmission lines that do not have the capacity to carry significant additional power. This issue needs to be clarified as discussed under " **Interconnection**" on pages one and two.

Lastly, the site was stated to have been chosen because it is close to an SDS mill site (even though it was stated above that no additional trees would have to be cut for the project) and to SDS business offices! Surely this declaration could be deleted lest it be concluded that convenience has a higher value than environmental factors when choosing a suitable location for a wind power facility. Perhaps if the reasoning behind the statement was elucidated, it might seem an appropriate inclusion.

Section 1, 4.1.2 states that a trench, approximately 8.5 miles long and 5 feet wide would be required to place collector cables. The DEIS mentions reseeding with of grasses and native plants, but does not mention what species, nor whether trees or shrubs that were removed would be replaced in-kind. If the plantings are to minimize noxious weed colonization would the reseeding areas be watered to ensure germination in time to counteract opportunistic germination of undesirable species? If so, the amounts used should appear in the Section 3 water use list and a watering regieme presented.

Will the removed soil be compacted as it is returned to the trench? Will the soil returned to the trench be returned in the same order that it was removed? What will the compaction guidelines entail? Who ensures that it is done properly? Since this extensive trench will likely disturb underground water flow patterns and create new, possibly undesirable flow patterns, it may be important to consider imposing certain requirements and ensuring that agency inspectors with authority to enforce , not proponents or contractors, oversee the work.

Section 1, 4.2 Pg 12 No Action Alternative To state that the No Action Alternative "would not help the state of Washington in achieving the renewable energy goals mandated by the state's Renewable Portfolio Standard" is misleading. Washington State wishes to encourage renewable energy, but not to the exclusion of all else. Site selection is probably the most important way that negative environmental consequences can be avoided, especially with respect to wildlife. Moreover, BPA does not segregate power sources. Once it is produced and fed into the collection system, it is dealt with as any business commodity, in this case by bids. Much of the power we create here is used elsewhere, historically, to California. To imply that a rejection would flout state goals and policies is simplistic and a little misleading.

"(The No Action Alternative) would help to meet the region's need for additional power in the coming years." If by "region", "local" is meant, our regions need is not great. The Columbia River, and other water-driven power-generating dams continue to supply more than ¾ of our power needs. The current trend is to improve efficiency and to encourage both business and the private sector to conservation. It has been estimated (Draft Sixth NPP, 2009) that almost 80% of our locality's future energy demands can be met in this way. Existing and newly approved wind facilities in the region, with a focus in Klikitat County, are more than adequate to make up the difference. It would be not only misleading but inaccurate to state or imply that there is a "need" for additional wind power in this portion of the Northwest.

Section 1, 4.3 Pg 13 Alternatives Considered but Eliminated from Detailed Study The applicant's response is in violation of the guidelines by virtue of not complying with the requirement to supply Alternatives. As mentioned above, an EIS requires that alternatives be provided and considered, with accompanying data and analysis to match all of the other Action Alternatives presented.

Section 1, 4.3.1 Pg 13 Alternative Project Locations The contents of this portion are redundant. Again, it avoids the EIS requirement regarding Alternatives. The points made here have all been stated previously (Section 1, 4.1), in the same bulleted form and with almost the same wording.

Section 1, Table 1 Pg 22 Earth: Construction: Design and Mitigation Measures All of the Design and Mitigation Measures listed are "would be" statements. They "should be" already part of the EIS! If, for instance there was a critical subsurface condition, it needs to be known and factored into the decision process, not "discovered" after approval. Only in this way can accurate and responsible evaluation occur. Because of the difficult terrain, there would appear to be very little possibility for adjustment, should geologic constraints be revealed initially. This could easily endanger the viability of the project, which underscores the importance of having data collected from rigorous studies, and analysis conducted by respected sources. Even with the added benefit of such information, the impacts of such radical alterations to a fragile topography can only be guessed. Stringent geologic study of the proposed site must be performed now and the results reported in another, hopefully improved Draft document. This information will be essential for the Council's evaluation. Without it, the process will have no merit.

Section 1, Table 1 Pg 22 Earth: Construction and Operation – The considerable alterations to the terrain that are proposed for this project - 8.5 miles of three to four foot deep, five foot wide trenches for cable burial, 30-foot deep turbine pads that will require leveling with machinery and extensive blasting to excavate, the building of adequate access and delivery roadways on steep slopes - will certainly have more impacts, and ones that influence each other more closely, than

those listed. The changes made to accommodate the towers will forever alter the ridge tops and they will not revert to their pre-construction profiles after the project is decommissioned. It is inaccurate as well as disingenuous to state that the project construction requirements would be "minor to moderate."

Why is volcanic ash deposition of such concern that it is mentioned here? Granted, several of the soils present do contain a volcanic ash component, but it is not clear to me why this appears, since there is no control over the possible event and, depending on the severity of an ash fall, no mitigation measures would be possible. Large amounts of ash could be physically removed, but would that be mitigation?

Does the statement regarding mass wasting " No obvious recent mass wasting features" imply that there is evidence of the phenomena having occurred on the site in the not-so- recent past? If so, then this is another reason why a more thorough geologic assessment be conducted, **before** the project is evaluated by the Council.

Although the soil type present on part of the project site has low liquefaction potential, massive excavation and refill, as in the 8.5 mile trench , may disturb soil structure enough to render the possibility greater than in the undisturbed state. Although liquefaction of soils are generally associated with earthquake activity, a similar phenomenon may result when soils become over-saturated. As mentioned above, there is no doubt that the proposed excavated and refilled trench will impact and redirect existing subsoil water flows for 8.5 or more miles and may potentially influence an area far greater than the area of the trench. It is also possible that drainage may be improved in the trench after refill, but the possibility that it will not, must be at least considered.

Section 1, Table 1 Pg 22 Water: Construction and **Operation** On-site development will certainly impact ground and surface water drainage patterns as indicated above. It is well- recognized that new roadbeds alter water flow significantly and are responsible for a good deal of continuing erosive runoff. The replacement of natural soil and rock drainage on the site with impervious concrete pads constitute large surface areas that will prohibit slow drainage. Water will be quickly released from these surfaces in large quantities at approximately the same time, limiting the remaining soil's ability to absorb and release it slowly. Some of the remaining soil may be additionally compacted from heavy construction machinery, limiting even more its ability to absorb rainfall and melting snow slowly.

Section 3 downplays the impact these impervious surfaces may have upon soils, but this need to be seriously examined. Each of the 49 tower pads have a diameter of 60 feet, creating 2920 square feet of impervious surfaces at the top of steep ridges. , These conditions produce fast runoff accompanied by high erosion which, over time may lead to catastrophic geologic events, as well as degrade waterways used by fish, amphibians and invertebrates. Amend this inaccurate denial of the project's impacts to ground and surface waters. A discussion, or at the very least a mention of the runoff potential should be presented, as well as possible impacts to the larger streambeds below, with potential to impact fish, amphibians and invertebrates, upon which fish depend for food. Larger game and non-game animals may be impacted as well through water quality degradation and the possible inability to even reach water. The standard BMP guidelines will not be adequate for this anticipated situation. In recognition of this, an individual plan to accommodate the special runoff problems of the project could be developed as part of a mitigation plan, implemented and monitored by an agent other than the applicant/contractors, if

the project is approved. The cumulative impacts discussion should deal with this possibility as well, but does not.

Section 1, Table 1 Pg 24 Biological Resources: Construction Soil compaction is an undesirable and irreversible impact that should be acknowleged since it affects soil drainage, the ability of certain plants to grow well and limits the species of plants that will grow.

In addition to "loss of suitable habitat," abandonment of adjacent suitable habitat due to construction activity should be considered a likely possibility. Some bird, mammal and invertebrate species are known to be more sensitive to intrusive activities, including noise, than others. Several of these species are listed as being present in the project area. Add "abandonment of suitable habitat due to construction activity" to the list on page 24.

Section 1, Table 1 Pg 24 Biological Resources: Operation "There would be some mortality to birds and bats due to turbine collision and displacement, though not in sufficient numbers to affect population viability." I restrain myself when I say that this statement is offensively inaccurate. It also reveals the applicant's misunderstanding of the "cumulative impact" concept. As wind farms proliferate in our region, the cumulative mortalities become increasingly significant for individual populations, regardless of their population status.

Just because there have been no studies addressing bird population declines in association with wind installations does not mean that one has a legitimate claim to deny that such a relationship may exist.

The bat studies cited, employed equipment that was not capable of determining the bat species e present. How then, can an assessment of a particular population be made? Or, by extension, a statement regarding population viability? What authority provided the status information for each population? What is the source of data for western bat species population size? Eastern bat species are being threatened with mass extinctions from White Nose Syndrome, the etiology and causative organism of which is still unknown. The disease has not yet reached the western states; because of this, it is essential that ALL western bat populations be given added protection, regardless of their population status. The bat study data is inadequate in certain respects; the study plan assumptions were not adequately rigorous, there were discrepancies in data collection procedures from year to year, making comparisons and data merging ineffective; long-term sampling frequency was sparse. At the very least, a repeat survey should be conducted which would identify bat species.

The Columbia River Flyway is a major East to West migration route that has likely been used longer than mankind has been here. Raptors are known to use mountain ridges for North/South travel as well as for hunting in this part of the Columbia River. People come from many places outside of this area specifically to see the variety of birds that congregate and fly through this river corridor, some stopping to feed for a few days or weeks before moving on. This site would be an unconscionable choice for a development of this kind, with this knowledge.
"No impacts to listed species" – is this a wish, or a promise from an unknown deity? How can it possibly be known ahead of time that a listed species will not be impacted; especially when inadequate studies have failed to identify what species use the area and with what frequency? And when only a two year start-up mortality study is planned? This is not enough time to obtain meaningful data much less to make any conclusions from the data. The project location would be

an especially difficult one for such monitoring due to the terrain and planned forestry understory management activities. A recent eastern U. S. mortality study is employing dogs to find bat carcasses, because they are so difficult to locate by eye, even in dry flat grassland.

There is no body of information available documenting how wild animals might respond to the sound of wind turbine propellers. This should be at least briefly discussed and dealt with as a possible impact.

Section 1, Table 1 Pg 24 Biological Resources: Design and Mitigation Measures "In order to avoid or minimize impacts to any raptors potentially nesting on or near the project site, a raptor nest survey would be conducted ....." Then what? A survey is not a mitigation measure.

The composition of the proposed Technical Advisory Committee members is not well thought out. Entities or personages that have vested interests or have demonstrated no interest, cannot be relied upon to make responsible, nor to make informed mitigation recommendations. To include the developer on such a committee would be unwise as well as unfair to the resources. If this route is pursued, enforcement capabilities must be granted and there must be a preponderance of resource advocates as committee members. TAC groups are by reputation, generally ineffective when they have no powers. They are also rendered ineffective if members have conflicts in interest, as counties and developers often do. This would be a great opportunity to cast aside TACs, breaking out of the customary mold and devising a new and more effective way to resolve monitoring and mitigation issues associated with such a project.

"For potential impacts to big game species (deer and elk) coordination with WDFW will occur if appropriate." Again, just to mention something does not comprise a mitigation measure. What about bears, and large cats? Who decides if a situation is "appropriate" warranting consultation? Under what circumstances would it be appropriate to coordinate? The project location is a designated wintering area for elk. What plant species are present that elk might use for winter forage? Will these species be replanted and therefore present in adequate quantities to continue to serve as winter forage during construction and operation of the proposed project? These considerations must be treated responsibly somewhere in the document. The quoted statement is vague and obtuse. It leaves the reader with **no information** about how big game species ' use of the area will be approached, nor does it correct nor solve any problems big game species may have because of the project.

Section 1, Table 1 Pg 25 Energy and Natural Resources: Operation The "Minor quantities of lubricating oils....." should be specifically quantified, if only as an estimate, to be consistent with the remaining listed items.

Section 1, Table 1 Pg 25 Environmental health: Construction The project is located at the southern end of a wide contiguous band of lands termed "Fire-prone Landscape Management Strategy Area" by a USFWS 2008 Final Spotted Owl Recovery Plan map. This area runs from the Columbia River north to the Washington-Canada border. The increased risk of fire during the summer months must be seriously considered and aggressive prevention measures **above the usual standards** should be pursued and stipulated.

Prohibitions on conducting potential spark and fire-generating activities during the driest fire danger periods of the year could be part of a plan keyed to this project and would demonstrate

care and concern for nearby communities. A several month delay in certain construction activities and equipment use as a result of time-of-year prohibitions would be well justified and need not halt all building progress.

There WILL be blasting activity in association with this project, if approved. Getting rid of the "may" and "could" in the bullet dealing with blasting would be a more honest way of stating the realities of the massive environmental reshaping that this project will engender. If "Blasting could also create a fire hazard during dry weather", then this activity should be curtailed during these periods. Likewise, an activities plan related to the regional weather patterns might suggest avoiding blasting during unusually wet times of the year to avoid problems similar to those encountered recently along Hwy 14. There is no doubt that the level of blasting activity alone has the potential to seriously destabilize this particular environment, which, as noted elsewhere, already has nearby unstable loci. Since there is no geologic assessment data provided, it is impossible to even guess what impacts such activity could produce. When the geologic assessment is conducted, it should address not only immediate impacts but the potential long-term impacts of blasting, even although this would only be predictive. Road department records from Underwood and Hwy 14 should give the Council a good idea of the areas' historic instability.

Section 1, Table 1 Pg 25 Environmental health: Construction (Column 4} The second, bulleted statement in column 4 implies that a fossil-fuel- powered facility might supply fill-in power when a wind facility is unproductive (and that it would carry a higher risk of fire.) There is a federal requirement mandating that alternative power source facilities must accompany any new wind facility, based upon the amount of power generated. The proposed wind project would generate above the MW threshold, requiring the construction of an alternative power-generating facility to balance a wind farm's unproductive periods of no wind or too high wind. The construction cost of this requirement building, inter-tie costs, should certainly be included in the cost analysis for this project, but it does not appear. Since the alternative power facility is a requirement , its location should be identified and the associated environmental impacts need to be included in the EIS, including the cumulative impacts portion.

Section 1, Table 1 Pg 26 Environmental Health: Operation Again, with respect to fire potential, local ordinances and other regulations and standards are not directed to such a project, and are not adequate, because of the unusual situation. An individually tailored, aggressive fire prevention plan and response tactic needs to be developed for the construction and operation phases of this proposed project. Relying on existing regulations will not adequately address the specific potential hazards nor protect the nearby population and environment.

"...none of the planned turbines are within 2,500 feet of existing residences." This is not correct; there is one residence. Mitigation measures should be included in the proper column.

"EMF from the project ...would have no health and safety impacts." I do not see any information in the document to support this assertion. There is certainly study regarding the issue, but conclusions are not definitive at this time. Can a pronouncement be made if there is inadequate documentation? Unless this can be produced, this statement needs to be removed or qualified in some manner in order to be objective.

Section 1, Table 1 Pg 27 Noise: Construction This section downplays construction noise, which will carry well into the valleys and bounce off of adjacent hillsides. Although construction is stated to occur during daylight hours, it will likely begin very early and continue through dusk.

The added noise of myriad transportation trucks will certainly impact local residents on a daily basis and should be included in the list.

The noise from blasting will certainly be noticeable and will last for awhile. In thoroughness, it should also be mentioned.

Section 1, Table 1 Pg 27 Noise: Operation An in-depth submission regarding wind turbine noise impacts upon humans has been submitted. Please consider it as a counter to the data presented in the EIS and take appropriate action to modify the table.

Section 1, Table 1 Pg 33 Socioeconomics: Operation There are several studies that identify undesirable affects of turbines upon humans (see K. Brown's testimony citations). One would not unreasonably conclude that properties in close proximity to such turbine arrays might be less desirable for habitation, at least to a percentage of the population. Proponents of wind power have issued statements derived from studies indicating that property values are not adversely affected by nearby wind turbines. As such studies continue, depending on the analyses, certainly there is the possibility that property values may be affected one way or another, but for now either position can support and document its claims.

Section 1, 7 Pg 34 Summary of Unavoidable Adverse Impacts : Earth The enormously disruptive activity that will be required to complete this project, located in a geologically fragile environment that has already been subjected to considerable alteration, is very likely to respond with undesirable events. In potentially susceptible areas, no amount of "careful design" can prevent, nor can "mitigation measures" restore, areas where mass wasting has occurred. It should be added to the list of potential adverse impacts, especially since evidence of such an event was documented during a previous survey. The severe re-contouring, blasting, large-scale trenching and creation of impervious surfaces all increase the likelihood of minor or major responses from the environment. The soil types in some areas are acknowledged to be susceptible to erosion and the proposed "A" array is located precisely along a Class II (High Landslide Hazard Area) ridgeline. To dismiss these and other known geologic concerns with the two brief dismissive statements presented is unacceptable. Until a reputable geologic assessment study is performed, there will remain a glaring gap in this arena. Without professional scientific data, any predictive statements can only be considered arbitrary and of dubious merit.

Section 1, 7 Pg 34 Summary of Unavoidable Adverse Impacts: Air Quality Construction activity would involve many more pieces of diesel-fueled machinery than any logging operation. It is absurd to think that the residents of the town of Underwood will not notice, nor be affected by, a continuing stream of diesel trucks heading up and down the roads every day for months. Peak morning hour numbers of trucks are estimated to be 210/hr for 3-5 months. Further, all major construction equipment is to be diesel-powered (Section3 Table 6-5, Pg 109 Fire and Explosion Risk Mitigation.) It is disingenuous to claim that this would be comparable to "existing logging operations.", and equally so to state that "the project would contribute to a beneficial impact on overall air quality" Climatological data presented in the EIS indicates that the area is prone to air stagnation at all times of the year, but especially during the summer when pollutants from downriver may collect forming considerable haze. Even if this statement refers to the completed project, it is a bit of a stretch to claim "beneficial impacts on overall air quality" when the requirement to build alternative fuel power plants are a direct result of building wind powered

facilities. With this in mind, it might be fairer to consider that project would lead to a decline in overall air quality.

Section 1, 7 Pg 34 Summary of Unavoidable Adverse Impacts: Biological Resources See previous comments regarding bats and birds (Section 1, Table 1 Biological Resources: Operation.) The Summary statement simply reiterates the document text statements, almost word for word, imparting the same inappropriate lack of concern. Why are no other wildlife groups mentioned? Certainly animal corridors will be interrupted, the areas in which young are raised may be pushed further away and populations may become fragmented. Even with the proposed mitigation measures in place, erosion runoff would affect the fishery and invertebrate communities downhill of this project. Blasting may obliterate pika or marmot populations that may have been overlooked. No mention of them occurs in the animal surveys. These could be significant impacts unless there is some oversight to ensure that mitigation measures are maintained to the standard for the duration of construction. Often, self-policing measures produce initial compliance, but over time may be seen to deteriorate.

Section 1, 8.2 Para 1 Pg 37 The last sentence in this paragraph appears to more of a running prepositional phrase. It is awkward and could be recast for a more professional presentation.

Section 1, 8.2 Para 2 Pg 37 The first sentence of the second paragraph is incomplete and needs structural as well as subjective clarification.

The last sentence of this paragraph still stretches my imagination – how will "introducing up to 75 MW" of wind power "contribute to efforts to improve air quality in the Columbia River Gorge vicinity?" If anything, fossil-fuel facilities will be **added** (producing a negative effect upon air quality) to make up for the irregular output of this wind facility.

Section 1, 10 Pg 38 References Again, BPA's Wind Integration Plan might be an excellent addition to the references section if it might clarify the line access and interconnection issues.

Section 2, 1.4.1 Pg 9 Construction Activities "Transportation of construction materials" (gravel, concrete, rebar, etc.) could be added to the list but "Use of dynamite and machine re-contouring of ridges" should be added to the list.

Section 2, 1.4.2 Pg 12 Construction Schedule Earlier portions of the document state a construction time of one year. This section states "approximately 15 months" would be required for construction ; all other sections repeatedly mention one year. Consistency throughout the document would enhance credibility. Are the construction cost estimates based upon 12 or "approximately 15 months?" The suggested time-of-year prohibitions to pro-actively address fire danger could be inserted into the detailed construction schedule, possibly changing the time frame even beyond 15 months.

Section 2, 1.4.4 Pg 13 Construction Costs An extra three months or more added to the construction time estimate of one year stated early in the EIS will add to the construction cost estimate presented in Section 2, 1.4.4 Pg 13, assuming that it is based upon a 12-month time frame.

Another cost that has not been discussed, although it may not be considered a bona fide construction cost, is that of the required alternative/fossil fuel facility that would make up for non-production times at the wind facility. Interconnection, substation and line link costs associated with this facility should be also be added and later considered in cumulative impact analyses. The total cost of building an alternative power supply facility to offset erratic wind generation is possibly not the responsibility of the applicant, but possibly some monetary responsibility exists? Who pays for the construction of such a facility? Is the cost partially subsidized? If so, by whom?

Section 2, 1.5 Pg. 14 Project Operations The project is stated to "operate 24 hours per day, seven days per week," implying that generation also occurs on that schedule. It might be a bit more objective to modify the statement to reflect the reality of wind power generation for those who do not know.

Is there any capability
The first U. S. study of reduced (bat) fatalities and economic costs of "low-wind mitigation" began in 2008,continued in 2009 and 2010. The research is being conducted in Pennsylvania with Casselman turbines and has demonstrated that bat fatalities were reduced an average 73% when turbines were left off-line, at night, during low wind conditions (<11.2 – 14.5 mph). An additional benefit to bats was to use the nighttime limitation during the migration season in the fall. The second year of the study, 2009, was funded wholly by USFWS. I will provide the Council with the citations. The calculated loss of production resulting from the temporary stoppage in that area of the country was 0.3 to 1.0% of the facilities' yearly output.

Some studies have indicated that certain individual towers in an array produce more mortalities than others. Will this project have the capability of shutting down a single turbine? Will it be possible to shut down individual arrays in this project? Will the strategy above be a possibility for these turbines or is their operation wholly automatic? What would the cost difference be if this capability was part of the design plan for these proposed turbines? This approach might be one that could be applied to bird mortality as well.

Section 2, 3 Pg 19 Alternatives Considered but Eliminated from Detailed Study As in Section 1, the applicant has substituted a list of self-generated criteria instead of fulfilling the mandated subject matter identified in the heading.

Section 3, 44.1.5 Special Status Wildlife Species Northern Spotted Owl Although the two historical northern spotted owl nesting sites at Moss and Mill Creeks, near the northern boundary of the proposed project are not believed to be presently occupied, these areas still carry the potential for occupation and use. Little is known about long-term northern spotted owl reoccupation patterns and current agency attempts to halt population declines are not encouraging. Forested habitats that have supported northern spotted owls in the past are likely to support a diverse suite of life forms and hold the potential to support one another, given enough space.

The proposed project is located within one of Washington States ten designated SOSEAs (Spotted Owl Special Emphasis Areas.) Although the project location and proposed construction activities do not impinge upon the parameters specified in the state regulations regarding SOSEAs, a favorable decision for this proposal would lead to extensive re-contouring and dynamiting the

outer boundary of a select habitat resource. Regardless of the legality of the proposed actions, to actually go ahead with the proposed habitat alterations would seem to flout the intent of the regulation. Eliminating the northern portion of the B array and the entire C5 to C8 array might allow the outer edges of the historic nest range that overlap the project boundary some protection as well as respect the spirit of the SOSEA. This might even serve as one of the as-yet-unsupplied Action Alternatives.

It is interesting and disturbing at the same time, to see the large list of of bird and mammal species observed at the proposal site and to realize that a number of them are "threatened," federal species of concern, or Washington State candidates for listing. Townsend's big-eared bat is both a federal species of concern and a Washington State Candidate for listing, although the incomplete bat studies conducted at the proposal site did not determine bats to species, it is a possibility that this bat may be using the area as well as Keen's Myotis, another Washington State Candidate for listing.

Although it is acknowleged in **Section 3, page 81** that "Some bat fatalities are anticipated as a result of the operation of the proposed project" the only mention of bats in **Section 3, 4.3 Mitigation Measures** is to minimize turbine lighting "thereby reducing the potential for birds and bats to be disoriented by lights....." Bats are not attracted nor disoriented by lights, although they are attracted by some night-flying insects that are. Essentially then, there is no mitigation measure directed toward bat mortalities; should there not be one suggested? If one cannot be suggested then it is assumed that the proposed project's bat mortalities will have to be considered unavoidable.

On the next page, **Section 3, 4.4 Unavoidable Adverse Impacts**, the second paragraph states that bird and bat mortalities will occur, but that "the level of mortality is not anticipated to be sufficient to negatively affect the population viability of any single species." This fallacy of this statement has been discussed before (page 5); the Applicant has presented no credible documentation to support such a claim. As wind farms proliferate in our region, cumulative mortalities become increasingly significant for individual populations, regardless of their population status. In this case, since population status is an unknown, it would not be possible to make a statement about viability.

Section 3, 4.4 Unavoidable Adverse Impacts, Paragraph three "It appears unlikely that the project would cause any mortality to a threatened or endangered species." Northern goshawks, golden and bald eagles were reported to be present at the proposed turbine sites. This project has an operating time estimate of 30 years. Even a non-statistician might consider the" likelihood" of such an event over thirty years to be at least "somewhat likely." Death can occur from a rare visitation, as well as from frequent visitations and although the number of mortalities may be small, the cumulative impacts for certain bird and bat species could affect overall species survival.

Section 3, 5.2.1 Pg 89 Impacts: Proposed Action: Construction There is no mention of re-using the material removed from blasting in order to lessen the need for 100,000 yards of gravel the project is expected to require. Is this a possibility?

Section 3, 5.4 Pg 92 Unavoidable Adverse Impacts The proposal is stated to have "minor unavoidable adverse impacts to energy and natural resources." The crushed rock requirement by

itself (100,000 yards) would deplete local supplies and possibly drive prices higher locally after construction since it might have to be hauled from greater distances.

The preceeding statement is immediately followed by another, claiming that "The overall impact of the project to energy and natural resources would be positive since it would provide the region with low-cost, clean, renewable energy..." etc. This has been commented on previously. The power generated from the proposed facility will not necessarily be used in this region due to the nature of BPA's power brokering activities. Our region's power costs in the past were indeed comparatively inexpensive, but prices are not low now, nor will they be in the future. P.U.D. newsletters have been explaining this fact to customers for several years. There is a growing discussion about making power costs equal across the country, so that those living in "power-poor "areas will not be unfairly penalized. Clean? Not as clean as solar, and certainly this proposal will require radical environmental destruction.

Section 3 14.3 Pg 269 Cumulative Impacts Rhetoric, political pressure, or private interest should never be allowed to override thorough and thoughtful, unhurried evaluation. Scientific rigor is essential to the cumulative impacts analysis. I am very sorry to see this section displaying an alarming number of mis-statements as well as faulty logic. Some of these statements have been carried over from Sections one and two, but there are several statements introduced in Section 3, clearly meant to justify the EIS's approach to the cumulative impacts analysis, that are simply a result of poor logic and misapplication of conclusions or data that has been taken out of context.

One example is a statement that appears on page 274 of Section 3, and is partially quoted below. The NAS Mid-Atlantic Highlands study conducted in 2007, only three years ago is not as relevant (in 2010)for analysis of cumulative impacts to wildlife, especially birds and bats; the rapid pace of wind power development has changed the dynamic entirely not only in the location of the study but especially in the northwest, making this study unsuitable for cumulative impact use in this EIS. This study moreover, quoted in the EIS in **Section 3, Pg 2, 74 Bird and Bat Species** (last sentence in paragraph 2), concluded that "for rare and local populations" the predicted level of fatalities when combined with all other man-made sources of mortality could affect population viability." This statement was made three years ago. Note that the study referred to predictions of mortality, not documented mortalities per se. It has been found that predictions in the arena of wind power mortalities have often been underestimated.

The "other man-made sources of mortality," contrary to the opening statement in paragraph three **(Section 3, Pg 274 Bird and Bat Species)** is hardly an "inherent difficulty" to a cumulative impacts analysis focusing on wind turbine mortalities. The "other man-made mortalities" are merely ancillary; they existed before wind turbine facilities and comprise a background level inherent to our cultural lifestyle. The "cumulative" aspect of the bird and bat analysis attempts to determine what impact wind turbines have regionally, to sometimes unknown population numbers of migrating, foraging and, nesting species.

State protections, USFWS and other specific, reputable wildlife data also must be considered in the analysis, as should a comparison analysis of costs. Although it is difficult to attribute monetary values to wildlife resources, standards are available to do so.

An essential element in any study is the study plan. Basic assumptions must be scientifically (logically) rigorous and the data collection schedules equally well-planned in order to produce

meaningful results. Data collection on wildlife takes many years. Conclusions from the results of such studies must employ scientific rigor. This is where peer-reviewed papers and respected sources can assist reviewers. To ensure adequately broad and equitable cumulative impacts analysis for this proposed project, it would be appropriate to engage another analyst, other than those that have already provided information and conclusions in association with this proposal. There are well-respected scientists available who would be able to perform this service with expertise and lack of bias. I strongly recommend this action, and the inclusion of such a consultation in the final EIS document.

I have made my points along the way, as I followed through the EIS document and will not summarize my concerns. I realize that this may be an inconvenient way to deal with such a large amount of material, but this is page 14 already! The specific shortcomings of the cumulative impacts section are noted throughout this letter but my main concern is for the apparent lack of understanding about what it should be, and to the lack of critical logic used to justify some of the conclusions.

Thank you for the opportunity to comment further and for considering my comments.

Sincerely,

Sallie Tucker Jones

August 26, 2010

[redacted]

Washington Energy Facility Site Evaluation Council
905 Plum Street
Olympia, Washington 98504-3172

Re: Whistling Ridge Energy Project May 2010 Draft Environmental Impact Statement

Members of the Council:

Thank you for extending the deadline for comments. Although it arrived at the very last minute, it was a generous extension and I hope that you will also extend the time you will take to review what I imagine will be the many additional submissions.

For the following reasons, as well as those that others have taken the time to bring to your attention, I strongly feel that a completely revised document must be created to stand as an accurate and unbiased presentation of information that Council members can use to make an informed decision regarding this proposal.

The existing document shows a lack of professionalism in many important areas that is inappropriate to both the SEPA/NEPA requirements and the process, as well as to the scale and potential impact of the proposal upon the region and its varied resources. Following are a few of the things that I find the most disturbing. Thank you for considering them when the Draft document is revised.

Section 1, 1.1, Pg 1 Para. 2 Interconnection and **Section 1, 2.2 Pg 4 BPA Purpose and Need for Action** I do not believe that BPA has yet responded to the request for interconnection. The nearby BPA transmission lines are at carrying capacity with a backlog of other requests for interconnection. Although the location is referred to in Section3, the precise location for the proposed Whistling Ridge Project interconnection is presently unknown, since no new transmission line has yet been constructed, nor has firm commitment from BPA to existing lines been granted. This renders the cumulative impacts assessment incomplete. It is also incomplete with respect to several other facets of this proposal as well. The BPA new line access corridor construction and interconnection costs, design and placement of any collector substation and interconnection structure, as well as an evaluation of the resulting environmental impacts of their construction and operation would be legitimate, mandatory elements for inclusion in this document.

Since BPA is partially responsible for the DEIS document, it should not be problematic for the agency to include an open and clearly understandable discussion of the agency's present interconnection problems as they relate to the current proposal, thus clarifying this aspect of the EIS. There is discussion of possibilities that were considered but rejected, however, the option finally chosen appears to be questionable, especially since BPA has offered no firm commitment.

Section 1, 2.3.2 Pg 6 ".....it is critical to locate projects in areas where transmission lines currently exist. The applicant thus needs to locate near existing high-voltage transmission , such as the FCRTS." As noted above (in Section 1, 2.2 notes), the currently existing BPA transmission line is running at capacity, with no possibility for the addition of large additional sources, such as this project's proposed output would comprise.

The critical issue regarding wind facilities is indeed appropriate siting, but not for the reason of proximity to transmission lines. The applicant (I assume this is the author) misunderstands the basic premise and need for an environmental impact statement. The lack of transparency regarding this issue is disturbing, and should be clarified in the BPA discussion of the issue, rendering this claim invalid. It should be removed from the document; it appears repeatedly in all Sections.

Section 1, 2.3.3 Pg 6 Business Needs of the Applicant An EIS is not a branch of any chamber of commerce nor is an EIS a forum for advertisement. The history of the applicant/company is already included in the Appendices. Other local background information is included in Section 3, 3.10.2.1 Historic Background and this is where it belongs. Every company has business needs but this is not the arena for such discussion. This heading and its text should be removed.

Section 1, 3.2 Pg 7 "The EIS will be used primarily to inform...." As it stands, I do not feel this document yet contains the essential information needed for informed, responsible decision-making, especially in the areas of wildlife impacts, soils/geology and cumulative impacts analysis. It must be improved significantly before it can serve its intended purpose. This may take more time, but it will certainly ensure that the final EIS is a more suitable document for unbiased decision-making, which at this point it is not.

Section 1, 3.3 and 4 Pgs 8, 9 NEPA Section 102 (2) (c) requires that alternatives to the proposed action be provided. There are **no** Action Alternatives offered in this document (the No Action Alternative is not considered a viable alternative.) Alternatives must be presented and discussed as real possibilities, not avoided by stating that alternatives were "considered but eliminated from detailed study" as is stated in Section 1, 4.3. The Applicant cannot choose to avoid this requirement. Although it is stated several times that the document "... is intended to fulfill the format and content requirements " of a joint SEPA/NEPA EIS, it falls well short in many areas.

Section 1, 4.1 Pg 9 Proposed Action The project site is stated to have a "proven, robust wind resource." There is no material to supply this "proof in the EIS document. If "robust " is interpreted to mean "good", then this statement is doubly inaccurate. The web-based National Renewable Energy Lab regional wind power mapping resource states that the proposal area provides only "marginal to fair" averaged wind resources compared to other sites in the state. The good to excellent areas are farther east. A BPA (among others)-sponsored wind mapping project on the Internet shows the area to have not particularly good wind resources as well.
The wind mapping data, referenced above, conflicts with the applicant's claim that the project site has a "'proven, robust wind resource." No scientifically stringent data is presented that supplies this "proof." This "proven, robust" ("steady") terminology appears repeatedly throughout the document and is misleading. A credible document needs to show at least an attempt at accuracy and objectivity.

There are other reasons as well, discussed on the following pages, that indicate the selected site may be a poor choice for a wind facility. Paramount to these, is the technical geologic study of the project site that has not yet, and must be been performed before suitability evaluations begin.

One of the factors that the Applicant used to identify site suitability was stated to be the "associated lack of native habitat, reducing or eliminating the need to clear additional forest land." Section 3 discusses the initial "need to clear trees to prepare ridge top sites for construction of turbine base pads and of specially configured parts delivery roadways. Information is even provided regarding where the logs will be taken after being cut. The applicant needs to choose one statement or the other and ensure that references to the eliminated statement are removed from the document as well. Which will it be? A credible document displays consistency.

A current aerial photograph of the steep (70% or more) southern side of the project area, in the vicinity of proposed turbine string A1 – A7 shows standing trees that were restricted from being cut by Washington State DNR when the applicant applied for a Forest Practices Application permit in 2003. What were the constraints that prevented this harvest? Will project approval permit the cutting of these trees, in order to clear for turbine pads and access roads, overriding the earlier DNR prohibition? The Council would need to investigate the nature of the DNR constraint before the evaluation process proceeds.

Again, mention of the alleged availability of nearby BPA transmission lines as a site selection factor: transmission lines that do not have the capacity to carry significant additional power. This issue needs to be clarified as discussed under " **Interconnection**" on pages one and two.

Lastly, the site was stated to have been chosen because it is close to an SDS mill site (even though it was stated above that no additional trees would have to be cut for the project) and to SDS business offices! Surely this declaration could be deleted lest it be concluded that convenience has a higher value than environmental factors when choosing a suitable location for a wind power facility. Perhaps if the reasoning behind the statement was elucidated, it might seem an appropriate inclusion.

Section 1, 4.1.2 states that a trench, approximately 8.5 miles long and 5 feet wide would be required to place collector cables. The DEIS mentions reseeding with of grasses and native plants, but does not mention what species, nor whether trees or shrubs that were removed would be replaced in-kind. If the plantings are to minimize noxious weed colonization would the reseeding areas be watered to ensure germination in time to counteract opportunistic germination of undesirable species? If so, the amounts used should appear in the Section 3 water use list and a watering regieme presented.

Will the removed soil be compacted as it is returned to the trench? Will the soil returned to the trench be returned in the same order that it was removed? What will the compaction guidelines entail? Who ensures that it is done properly? Since this extensive trench will likely disturb underground water flow patterns and create new, possibly undesirable flow patterns, it may be important to consider imposing certain requirements and ensuring that agency inspectors with authority to enforce , not proponents or contractors, oversee the work.

Section 1, 4.2 Pg 12 No Action Alternative To state that the No Action Alternative "would not help the state of Washington in achieving the renewable energy goals mandated by the state's Renewable Portfolio Standard" is misleading. Washington State wishes to encourage renewable energy, but not to the exclusion of all else. Site selection is probably the most important way that negative environmental consequences can be avoided, especially with respect to wildlife. Moreover, BPA does not segregate power sources. Once it is produced and fed into the collection system, it is dealt with as any business commodity, in this case by bids. Much of the power we create here is used elsewhere, historically, to California. To imply that a rejection would flout state goals and policies is simplistic and a little misleading.

"(The No Action Alternative) would help to meet the region's need for additional power in the coming years." If by "region", "local" is meant, our regions need is not great. The Columbia River, and other water-driven power-generating dams continue to supply more than ¾ of our power needs. The current trend is to improve efficiency and to encourage both business and the private sector to conservation. It has been estimated (Draft Sixth NPP, 2009) that almost 80% of our locality's future energy demands can be met in this way. Existing and newly approved wind facilities in the region, with a focus in Klikitat County, are more than adequate to make up the difference. It would be not only misleading but inaccurate to state or imply that there is a "need" for additional wind power in this portion of the Northwest.

Section 1, 4.3 Pg 13 Alternatives Considered but Eliminated from Detailed Study The applicant's response is in violation of the guidelines by virtue of not complying with the requirement to supply Alternatives. As mentioned above, an EIS requires that alternatives be provided and considered, with accompanying data and analysis to match all of the other Action Alternatives presented.

Section 1, 4.3.1 Pg 13 Alternative Project Locations The contents of this portion are redundant. Again, it avoids the EIS requirement regarding Alternatives. The points made here have all been stated previously (Section 1, 4.1), in the same bulleted form and with almost the same wording.

Section 1, Table 1 Pg 22 Earth: Construction: Design and Mitigation Measures All of the Design and Mitigation Measures listed are "would be" statements. They "should be" already part of the EIS! If, for instance there was a critical subsurface condition, it needs to be known and factored into the decision process, not "discovered" after approval. Only in this way can accurate and responsible evaluation occur. Because of the difficult terrain, there would appear to be very little possibility for adjustment, should geologic constraints be revealed initially. This could easily endanger the viability of the project, which underscores the importance of having data collected from rigorous studies, and analysis conducted by respected sources. Even with the added benefit of such information, the impacts of such radical alterations to a fragile topography can only be guessed. Stringent geologic study of the proposed site must be performed now and the results reported in another, hopefully improved Draft document. This information will be essential for the Council's evaluation. Without it, the process will have no merit.

Section 1, Table 1 Pg 22 Earth: Construction and Operation – The considerable alterations to the terrain that are proposed for this project - 8.5 miles of three to four foot deep, five foot wide trenches for cable burial, 30-foot deep turbine pads that will require leveling with machinery and extensive blasting to excavate, the building of adequate access and delivery roadways on steep slopes - will certainly have more impacts, and ones that influence each other more closely, than

those listed. The changes made to accommodate the towers will forever alter the ridge tops and they will not revert to their pre-construction profiles after the project is decommissioned. It is inaccurate as well as disingenuous to state that the project construction requirements would be "minor to moderate."

Why is volcanic ash deposition of such concern that it is mentioned here? Granted, several of the soils present do contain a volcanic ash component, but it is not clear to me why this appears, since there is no control over the possible event and, depending on the severity of an ash fall, no mitigation measures would be possible. Large amounts of ash could be physically removed, but would that be mitigation?

Does the statement regarding mass wasting " No obvious recent mass wasting features" imply that there is evidence of the phenomena having occurred on the site in the not-so- recent past? If so, then this is another reason why a more thorough geologic assessment be conducted, **before** the project is evaluated by the Council.

Although the soil type present on part of the project site has low liquefaction potential, massive excavation and refill, as in the 8.5 mile trench , may disturb soil structure enough to render the possibility greater than in the undisturbed state. Although liquefaction of soils are generally associated with earthquake activity, a similar phenomenon may result when soils become over-saturated. As mentioned above, there is no doubt that the proposed excavated and refilled trench will impact and redirect existing subsoil water flows for 8.5 or more miles and may potentially influence an area far greater than the area of the trench. It is also possible that drainage may be improved in the trench after refill, but the possibility that it will not, must be at least considered.

Section 1, Table 1 Pg 22 Water: Construction and **Operation** On-site development will certainly impact ground and surface water drainage patterns as indicated above. It is well- recognized that new roadbeds alter water flow significantly and are responsible for a good deal of continuing erosive runoff. The replacement of natural soil and rock drainage on the site with impervious concrete pads constitute large surface areas that will prohibit slow drainage. Water will be quickly released from these surfaces in large quantities at approximately the same time, limiting the remaining soil's ability to absorb and release it slowly. Some of the remaining soil may be additionally compacted from heavy construction machinery, limiting even more its ability to absorb rainfall and melting snow slowly.

Section 3 downplays the impact these impervious surfaces may have upon soils, but this need to be seriously examined. Each of the 49 tower pads have a diameter of 60 feet, creating 2920 square feet of impervious surfaces at the top of steep ridges. , These conditions produce fast runoff accompanied by high erosion which, over time may lead to catastrophic geologic events, as well as degrade waterways used by fish, amphibians and invertebrates. Amend this inaccurate denial of the project's impacts to ground and surface waters. A discussion, or at the very least a mention of the runoff potential should be presented, as well as possible impacts to the larger streambeds below, with potential to impact fish, amphibians and invertebrates, upon which fish depend for food. Larger game and non-game animals may be impacted as well through water quality degradation and the possible inability to even reach water. The standard BMP guidelines will not be adequate for this anticipated situation. In recognition of this, an individual plan to accommodate the special runoff problems of the project could be developed as part of a mitigation plan, implemented and monitored by an agent other than the applicant/contractors, if

the project is approved. The cumulative impacts discussion should deal with this possibility as well, but does not.

Section 1, Table 1 Pg 24 Biological Resources: Construction Soil compaction is an undesirable and irreversible impact that should be acknowleged since it affects soil drainage, the ability of certain plants to grow well and limits the species of plants that will grow.

In addition to "loss of suitable habitat," abandonment of adjacent suitable habitat due to construction activity should be considered a likely possibility. Some bird, mammal and invertebrate species are known to be more sensitive to intrusive activities, including noise, than others. Several of these species are listed as being present in the project area. Add "abandonment of suitable habitat due to construction activity" to the list on page 24.

Section 1, Table 1 Pg 24 Biological Resources: Operation "There would be some mortality to birds and bats due to turbine collision and displacement, though not in sufficient numbers to affect population viability." I restrain myself when I say that this statement is offensively inaccurate. It also reveals the applicant's misunderstanding of the "cumulative impact" concept. As wind farms proliferate in our region, the cumulative mortalities become increasingly significant for individual populations, regardless of their population status.

Just because there have been no studies addressing bird population declines in association with wind installations does not mean that one has a legitimate claim to deny that such a relationship may exist.

The bat studies cited, employed equipment that was not capable of determining the bat species e present. How then, can an assessment of a particular population be made? Or, by extension, a statement regarding population viability? What authority provided the status information for each population? What is the source of data for western bat species population size? Eastern bat species are being threatened with mass extinctions from White Nose Syndrome, the etiology and causative organism of which is still unknown. The disease has not yet reached the western states; because of this, it is essential that ALL western bat populations be given added protection, regardless of their population status. The bat study data is inadequate in certain respects; the study plan assumptions were not adequately rigorous, there were discrepancies in data collection procedures from year to year, making comparisons and data merging ineffective; long-term sampling frequency was sparse. At the very least, a repeat survey should be conducted which would identify bat species.

The Columbia River Flyway is a major East to West migration route that has likely been used longer than mankind has been here. Raptors are known to use mountain ridges for North/South travel as well as for hunting in this part of the Columbia River. People come from many places outside of this area specifically to see the variety of birds that congregate and fly through this river corridor, some stopping to feed for a few days or weeks before moving on. This site would be an unconscionable choice for a development of this kind, with this knowledge.
"No impacts to listed species" – is this a wish, or a promise from an unknown deity? How can it possibly be known ahead of time that a listed species will not be impacted; especially when inadequate studies have failed to identify what species use the area and with what frequency? And when only a two year start-up mortality study is planned? This is not enough time to obtain meaningful data much less to make any conclusions from the data. The project location would be

an especially difficult one for such monitoring due to the terrain and planned forestry understory management activities. A recent eastern U. S. mortality study is employing dogs to find bat carcasses, because they are so difficult to locate by eye, even in dry flat grassland.

There is no body of information available documenting how wild animals might respond to the sound of wind turbine propellers. This should be at least briefly discussed and dealt with as a possible impact.

Section 1, Table 1 Pg 24 Biological Resources: Design and Mitigation Measures "In order to avoid or minimize impacts to any raptors potentially nesting on or near the project site, a raptor nest survey would be conducted ....." Then what? A survey is not a mitigation measure.

The composition of the proposed Technical Advisory Committee members is not well thought out. Entities or personages that have vested interests or have demonstrated no interest, cannot be relied upon to make responsible, nor to make informed mitigation recommendations. To include the developer on such a committee would be unwise as well as unfair to the resources. If this route is pursued, enforcement capabilities must be granted and there must be a preponderance of resource advocates as committee members. TAC groups are by reputation, generally ineffective when they have no powers. They are also rendered ineffective if members have conflicts in interest, as counties and developers often do. This would be a great opportunity to cast aside TACs, breaking out of the customary mold and devising a new and more effective way to resolve monitoring and mitigation issues associated with such a project.

"For potential impacts to big game species (deer and elk) coordination with WDFW will occur if appropriate." Again, just to mention something does not comprise a mitigation measure. What about bears, and large cats? Who decides if a situation is "appropriate" warranting consultation? Under what circumstances would it be appropriate to coordinate? The project location is a designated wintering area for elk. What plant species are present that elk might use for winter forage? Will these species be replanted and therefore present in adequate quantities to continue to serve as winter forage during construction and operation of the proposed project? These considerations must be treated responsibly somewhere in the document. The quoted statement is vague and obtuse. It leaves the reader with **no information** about how big game species ' use of the area will be approached, nor does it correct nor solve any problems big game species may have because of the project.

Section 1, Table 1 Pg 25 Energy and Natural Resources: Operation The "Minor quantities of lubricating oils....." should be specifically quantified, if only as an estimate, to be consistent with the remaining listed items.

Section 1, Table 1 Pg 25 Environmental health: Construction The project is located at the southern end of a wide contiguous band of lands termed "Fire-prone Landscape Management Strategy Area" by a USFWS 2008 Final Spotted Owl Recovery Plan map. This area runs from the Columbia River north to the Washington-Canada border. The increased risk of fire during the summer months must be seriously considered and aggressive prevention measures **above the usual standards** should be pursued and stipulated.

Prohibitions on conducting potential spark and fire-generating activities during the driest fire danger periods of the year could be part of a plan keyed to this project and would demonstrate

care and concern for nearby communities. A several month delay in certain construction activities and equipment use as a result of time-of-year prohibitions would be well justified and need not halt all building progress.

There WILL be blasting activity in association with this project, if approved. Getting rid of the "may" and "could" in the bullet dealing with blasting would be a more honest way of stating the realities of the massive environmental reshaping that this project will engender. If "Blasting could also create a fire hazard during dry weather", then this activity should be curtailed during these periods. Likewise, an activities plan related to the regional weather patterns might suggest avoiding blasting during unusually wet times of the year to avoid problems similar to those encountered recently along Hwy 14. There is no doubt that the level of blasting activity alone has the potential to seriously destabilize this particular environment, which, as noted elsewhere, already has nearby unstable loci. Since there is no geologic assessment data provided, it is impossible to even guess what impacts such activity could produce. When the geologic assessment is conducted, it should address not only immediate impacts but the potential long-term impacts of blasting, even although this would only be predictive. Road department records from Underwood and Hwy 14 should give the Council a good idea of the areas' historic instability.

Section 1, Table 1 Pg 25 Environmental health: Construction (Column 4} The second, bulleted statement in column 4 implies that a fossil-fuel- powered facility might supply fill-in power when a wind facility is unproductive (and that it would carry a higher risk of fire.) There is a federal requirement mandating that alternative power source facilities must accompany any new wind facility, based upon the amount of power generated. The proposed wind project would generate above the MW threshold, requiring the construction of an alternative power-generating facility to balance a wind farm's unproductive periods of no wind or too high wind. The construction cost of this requirement building, inter-tie costs, should certainly be included in the cost analysis for this project, but it does not appear. Since the alternative power facility is a requirement , its location should be identified and the associated environmental impacts need to be included in the EIS, including the cumulative impacts portion.

Section 1, Table 1 Pg 26 Environmental Health: Operation Again, with respect to fire potential, local ordinances and other regulations and standards are not directed to such a project, and are not adequate, because of the unusual situation. An individually tailored, aggressive fire prevention plan and response tactic needs to be developed for the construction and operation phases of this proposed project. Relying on existing regulations will not adequately address the specific potential hazards nor protect the nearby population and environment.

"...none of the planned turbines are within 2,500 feet of existing residences." This is not correct; there is one residence. Mitigation measures should be included in the proper column.

"EMF from the project ...would have no health and safety impacts." I do not see any information in the document to support this assertion. There is certainly study regarding the issue, but conclusions are not definitive at this time. Can a pronouncement be made if there is inadequate documentation? Unless this can be produced, this statement needs to be removed or qualified in some manner in order to be objective.

Section 1, Table 1 Pg 27 Noise: Construction This section downplays construction noise, which will carry well into the valleys and bounce off of adjacent hillsides. Although construction is stated to occur during daylight hours, it will likely begin very early and continue through dusk.

The added noise of myriad transportation trucks will certainly impact local residents on a daily basis and should be included in the list.

The noise from blasting will certainly be noticeable and will last for awhile. In thoroughness, it should also be mentioned.

Section 1, Table 1 Pg 27 Noise: Operation An in-depth submission regarding wind turbine noise impacts upon humans has been submitted. Please consider it as a counter to the data presented in the EIS and take appropriate action to modify the table.

Section 1, Table 1 Pg 33 Socioeconomics: Operation There are several studies that identify undesirable affects of turbines upon humans (see K. Brown's testimony citations). One would not unreasonably conclude that properties in close proximity to such turbine arrays might be less desirable for habitation, at least to a percentage of the population. Proponents of wind power have issued statements derived from studies indicating that property values are not adversely affected by nearby wind turbines. As such studies continue, depending on the analyses, certainly there is the possibility that property values may be affected one way or another, but for now either position can support and document its claims.

Section 1, 7 Pg 34 Summary of Unavoidable Adverse Impacts : Earth The enormously disruptive activity that will be required to complete this project, located in a geologically fragile environment that has already been subjected to considerable alteration, is very likely to respond with undesirable events. In potentially susceptible areas, no amount of "careful design" can prevent, nor can "mitigation measures" restore, areas where mass wasting has occurred. It should be added to the list of potential adverse impacts, especially since evidence of such an event was documented during a previous survey. The severe re-contouring, blasting, large-scale trenching and creation of impervious surfaces all increase the likelihood of minor or major responses from the environment. The soil types in some areas are acknowledged to be susceptible to erosion and the proposed "A" array is located precisely along a Class II (High Landslide Hazard Area) ridgeline. To dismiss these and other known geologic concerns with the two brief dismissive statements presented is unacceptable. Until a reputable geologic assessment study is performed, there will remain a glaring gap in this arena. Without professional scientific data, any predictive statements can only be considered arbitrary and of dubious merit.

Section 1, 7 Pg 34 Summary of Unavoidable Adverse Impacts: Air Quality Construction activity would involve many more pieces of diesel-fueled machinery than any logging operation. It is absurd to think that the residents of the town of Underwood will not notice, nor be affected by, a continuing stream of diesel trucks heading up and down the roads every day for months. Peak morning hour numbers of trucks are estimated to be 210/hr for 3-5 months. Further, all major construction equipment is to be diesel-powered (Section3 Table 6-5, Pg 109 Fire and Explosion Risk Mitigation.) It is disingenuous to claim that this would be comparable to "existing logging operations.", and equally so to state that "the project would contribute to a beneficial impact on overall air quality" Climatological data presented in the EIS indicates that the area is prone to air stagnation at all times of the year, but especially during the summer when pollutants from downriver may collect forming considerable haze. Even if this statement refers to the completed project, it is a bit of a stretch to claim "beneficial impacts on overall air quality" when the requirement to build alternative fuel power plants are a direct result of building wind powered

facilities. With this in mind, it might be fairer to consider that project would lead to a decline in overall air quality.

Section 1, 7 Pg 34 Summary of Unavoidable Adverse Impacts: Biological Resources See previous comments regarding bats and birds (Section 1, Table 1 Biological Resources: Operation.) The Summary statement simply reiterates the document text statements, almost word for word, imparting the same inappropriate lack of concern. Why are no other wildlife groups mentioned? Certainly animal corridors will be interrupted, the areas in which young are raised may be pushed further away and populations may become fragmented. Even with the proposed mitigation measures in place, erosion runoff would affect the fishery and invertebrate communities downhill of this project. Blasting may obliterate pika or marmot populations that may have been overlooked. No mention of them occurs in the animal surveys. These could be significant impacts unless there is some oversight to ensure that mitigation measures are maintained to the standard for the duration of construction. Often, self-policing measures produce initial compliance, but over time may be seen to deteriorate.

Section 1, 8.2 Para 1 Pg 37 The last sentence in this paragraph appears to more of a running prepositional phrase. It is awkward and could be recast for a more professional presentation.

Section 1, 8.2 Para 2 Pg 37 The first sentence of the second paragraph is incomplete and needs structural as well as subjective clarification.

The last sentence of this paragraph still stretches my imagination – how will "introducing up to 75 MW" of wind power "contribute to efforts to improve air quality in the Columbia River Gorge vicinity?" If anything, fossil-fuel facilities will be **added** (producing a negative effect upon air quality) to make up for the irregular output of this wind facility.

Section 1, 10 Pg 38 References Again, BPA's Wind Integration Plan might be an excellent addition to the references section if it might clarify the line access and interconnection issues.

Section 2, 1.4.1 Pg 9 Construction Activities "Transportation of construction materials" (gravel, concrete, rebar, etc.) could be added to the list but "Use of dynamite and machine re-contouring of ridges" should be added to the list.

Section 2, 1.4.2 Pg 12 Construction Schedule Earlier portions of the document state a construction time of one year. This section states "approximately 15 months" would be required for construction ; all other sections repeatedly mention one year. Consistency throughout the document would enhance credibility. Are the construction cost estimates based upon 12 or "approximately 15 months?" The suggested time-of-year prohibitions to pro-actively address fire danger could be inserted into the detailed construction schedule, possibly changing the time frame even beyond 15 months.

Section 2, 1.4.4 Pg 13 Construction Costs An extra three months or more added to the construction time estimate of one year stated early in the EIS will add to the construction cost estimate presented in Section 2, 1.4.4 Pg 13, assuming that it is based upon a 12-month time frame.

Another cost that has not been discussed, although it may not be considered a bona fide construction cost, is that of the required alternative/fossil fuel facility that would make up for non-production times at the wind facility. Interconnection, substation and line link costs associated with this facility should be also be added and later considered in cumulative impact analyses. The total cost of building an alternative power supply facility to offset erratic wind generation is possibly not the responsibility of the applicant, but possibly some monetary responsibility exists? Who pays for the construction of such a facility? Is the cost partially subsidized? If so, by whom?

Section 2, 1.5 Pg. 14 Project Operations The project is stated to "operate 24 hours per day, seven days per week," implying that generation also occurs on that schedule. It might be a bit more objective to modify the statement to reflect the reality of wind power generation for those who do not know.

Is there any capability
The first U. S. study of reduced (bat) fatalities and economic costs of "low-wind mitigation" began in 2008,continued in 2009 and 2010. The research is being conducted in Pennsylvania with Casselman turbines and has demonstrated that bat fatalities were reduced an average 73% when turbines were left off-line, at night, during low wind conditions (<11.2 – 14.5 mph). An additional benefit to bats was to use the nighttime limitation during the migration season in the fall. The second year of the study, 2009, was funded wholly by USFWS. I will provide the Council with the citations. The calculated loss of production resulting from the temporary stoppage in that area of the country was 0.3 to 1.0% of the facilities' yearly output.

Some studies have indicated that certain individual towers in an array produce more mortalities than others. Will this project have the capability of shutting down a single turbine? Will it be possible to shut down individual arrays in this project? Will the strategy above be a possibility for these turbines or is their operation wholly automatic? What would the cost difference be if this capability was part of the design plan for these proposed turbines? This approach might be one that could be applied to bird mortality as well.

Section 2, 3 Pg 19 Alternatives Considered but Eliminated from Detailed Study As in Section 1, the applicant has substituted a list of self-generated criteria instead of fulfilling the mandated subject matter identified in the heading.

Section 3, 44.1.5 Special Status Wildlife Species Northern Spotted Owl Although the two historical northern spotted owl nesting sites at Moss and Mill Creeks, near the northern boundary of the proposed project are not believed to be presently occupied, these areas still carry the potential for occupation and use. Little is known about long-term northern spotted owl reoccupation patterns and current agency attempts to halt population declines are not encouraging. Forested habitats that have supported northern spotted owls in the past are likely to support a diverse suite of life forms and hold the potential to support one another, given enough space.

The proposed project is located within one of Washington States ten designated SOSEAs (Spotted Owl Special Emphasis Areas.) Although the project location and proposed construction activities do not impinge upon the parameters specified in the state regulations regarding SOSEAs, a favorable decision for this proposal would lead to extensive re-contouring and dynamiting the

outer boundary of a select habitat resource. Regardless of the legality of the proposed actions, to actually go ahead with the proposed habitat alterations would seem to flout the intent of the regulation. Eliminating the northern portion of the B array and the entire C5 to C8 array might allow the outer edges of the historic nest range that overlap the project boundary some protection as well as respect the spirit of the SOSEA. This might even serve as one of the as-yet-unsupplied Action Alternatives.

It is interesting and disturbing at the same time, to see the large list of of bird and mammal species observed at the proposal site and to realize that a number of them are "threatened," federal species of concern, or Washington State candidates for listing. Townsend's big-eared bat is both a federal species of concern and a Washington State Candidate for listing, although the incomplete bat studies conducted at the proposal site did not determine bats to species, it is a possibility that this bat may be using the area as well as Keen's Myotis, another Washington State Candidate for listing.

Although it is acknowleged in **Section 3, page 81** that "Some bat fatalities are anticipated as a result of the operation of the proposed project" the only mention of bats in **Section 3, 4.3 Mitigation Measures** is to minimize turbine lighting "thereby reducing the potential for birds and bats to be disoriented by lights....." Bats are not attracted nor disoriented by lights, although they are attracted by some night-flying insects that are. Essentially then, there is no mitigation measure directed toward bat mortalities; should there not be one suggested? If one cannot be suggested then it is assumed that the proposed project's bat mortalities will have to be considered unavoidable.

On the next page, **Section 3, 4.4 Unavoidable Adverse Impacts**, the second paragraph states that bird and bat mortalities will occur, but that "the level of mortality is not anticipated to be sufficient to negatively affect the population viability of any single species." This fallacy of this statement has been discussed before (page 5); the Applicant has presented no credible documentation to support such a claim. As wind farms proliferate in our region, cumulative mortalities become increasingly significant for individual populations, regardless of their population status. In this case, since population status is an unknown, it would not be possible to make a statement about viability.

Section 3, 4.4 Unavoidable Adverse Impacts, Paragraph three "It appears unlikely that the project would cause any mortality to a threatened or endangered species." Northern goshawks, golden and bald eagles were reported to be present at the proposed turbine sites. This project has an operating time estimate of 30 years. Even a non-statistician might consider the" likelihood" of such an event over thirty years to be at least "somewhat likely." Death can occur from a rare visitation, as well as from frequent visitations and although the number of mortalities may be small, the cumulative impacts for certain bird and bat species could affect overall species survival.

Section 3, 5.2.1 Pg 89 Impacts: Proposed Action: Construction There is no mention of re-using the material removed from blasting in order to lessen the need for 100,000 yards of gravel the project is expected to require. Is this a possibility?

Section 3, 5.4 Pg 92 Unavoidable Adverse Impacts The proposal is stated to have "minor unavoidable adverse impacts to energy and natural resources." The crushed rock requirement by

itself (100,000 yards) would deplete local supplies and possibly drive prices higher locally after construction since it might have to be hauled from greater distances.

The preceeding statement is immediately followed by another, claiming that "The overall impact of the project to energy and natural resources would be positive since it would provide the region with low-cost, clean, renewable energy..." etc. This has been commented on previously. The power generated from the proposed facility will not necessarily be used in this region due to the nature of BPA's power brokering activities. Our region's power costs in the past were indeed comparatively inexpensive, but prices are not low now, nor will they be in the future. P.U.D. newsletters have been explaining this fact to customers for several years. There is a growing discussion about making power costs equal across the country, so that those living in "power-poor "areas will not be unfairly penalized. Clean? Not as clean as solar, and certainly this proposal will require radical environmental destruction.

Section 3 14.3 Pg 269 Cumulative Impacts Rhetoric, political pressure, or private interest should never be allowed to override thorough and thoughtful, unhurried evaluation. Scientific rigor is essential to the cumulative impacts analysis. I am very sorry to see this section displaying an alarming number of mis-statements as well as faulty logic. Some of these statements have been carried over from Sections one and two, but there are several statements introduced in Section 3, clearly meant to justify the EIS's approach to the cumulative impacts analysis, that are simply a result of poor logic and misapplication of conclusions or data that has been taken out of context.

One example is a statement that appears on page 274 of Section 3, and is partially quoted below. The NAS Mid-Atlantic Highlands study conducted in 2007, only three years ago is not as relevant (in 2010)for analysis of cumulative impacts to wildlife, especially birds and bats; the rapid pace of wind power development has changed the dynamic entirely not only in the location of the study but especially in the northwest, making this study unsuitable for cumulative impact use in this EIS. This study moreover, quoted in the EIS in **Section 3, Pg 2, 74 Bird and Bat Species** (last sentence in paragraph 2), concluded that "for rare and local populations" the predicted level of fatalities when combined with all other man-made sources of mortality could affect population viability." This statement was made three years ago. Note that the study referred to predictions of mortality, not documented mortalities per se. It has been found that predictions in the arena of wind power mortalities have often been underestimated.

The "other man-made sources of mortality," contrary to the opening statement in paragraph three **(Section 3, Pg 274 Bird and Bat Species)** is hardly an "inherent difficulty" to a cumulative impacts analysis focusing on wind turbine mortalities. The "other man-made mortalities" are merely ancillary; they existed before wind turbine facilities and comprise a background level inherent to our cultural lifestyle. The "cumulative" aspect of the bird and bat analysis attempts to determine what impact wind turbines have regionally, to sometimes unknown population numbers of migrating, foraging and, nesting species.

State protections, USFWS and other specific, reputable wildlife data also must be considered in the analysis, as should a comparison analysis of costs. Although it is difficult to attribute monetary values to wildlife resources, standards are available to do so.

An essential element in any study is the study plan. Basic assumptions must be scientifically (logically) rigorous and the data collection schedules equally well-planned in order to produce

meaningful results. Data collection on wildlife takes many years. Conclusions from the results of such studies must employ scientific rigor. This is where peer-reviewed papers and respected sources can assist reviewers. To ensure adequately broad and equitable cumulative impacts analysis for this proposed project, it would be appropriate to engage another analyst, other than those that have already provided information and conclusions in association with this proposal. There are well-respected scientists available who would be able to perform this service with expertise and lack of bias. I strongly recommend this action, and the inclusion of such a consultation in the final EIS document.

I have made my points along the way, as I followed through the EIS document and will not summarize my concerns. I realize that this may be an inconvenient way to deal with such a large amount of material, but this is page 14 already! The specific shortcomings of the cumulative impacts section are noted throughout this letter but my main concern is for the apparent lack of understanding about what it should be, and to the lack of critical logic used to justify some of the conclusions.

Thank you for the opportunity to comment further and for considering my comments.

Sincerely,

Sallie Tucker Jones

Michelle, Kayce (UTC)

From: sallie tucker jones [redacted]m]
Sent: Friday, August 27, 2010 3:24 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Draft EIS Comments
Attachments: August 15 comments re Wind farm.docx

Hi Tammy, I hope this works. Thanks for your help, Sallie

COMMENT LETTER 273

BEFORE THE STATE OF WASHINGTON ENERGY FACILITY SITE EVALUATION COUNCIL (WEFSEC)

In the Matter of Application

No. 2009-1

Whistling Ridge Energy LLC

Whistling Ridge Energy Project

Comments by Barbara Bleakley, a private citizen

My husband and I live in White Salmon, WA. We, like thousands of other families, have purchased homes in this area because of the "protected" beauty of the National Scenic Area (NSA). It should continue to be protected as a priceless asset to the NW and our country. It is time for our government to stop supporting any project that is politically expedient at the expense of the citizens. We are hopeful that reason will prevail and that the powers that be perform a careful and thorough analysis of every single possible negative impact to our local communities and environment by this project.

We have grave concerns over locating the Whistling Ridge wind farm on the proposed ridge immediately outside the NSA, including but not limited to the points made below. We can easily conclude that there are better locations in unpopulated or otherwise unproductive areas, and that other more appropriate green technologies should be considered a higher priority.

1. **Precedent.** We feel that if Whistling Ridge is allowed to move forward, the Governor of WA would be setting a dangerous precedent here in the Columbia River Gorge. What will stop other wind farms from being allowed just outside the geographical boundaries but visually impacting the NSA? We have already sacrificed the natural beauty of the Columbia Hills east of the NSA to hundreds and perhaps even thousands of wind turbines on both sides of the Columbia in the interest of this green energy that must be subsidized to make ANY economic sense. How far should we go with this philosophy of creating green energy. At what cost? As common sense tells us, if it sounds too good to be true, it probably is, as evidenced by the ethanol political boondoggle. Allowing this project is outrageous considering all the blood, sweat and tears expended over the creation and management of the nation's ONLY National Scenic Area. Hundreds of millions of dollars of residential view property will immediately be impacted and devalued. Our scenic resources should NOT be held for ransom under the guise of "green energy" without definitive studies of the many significantly adverse impacts to people, wildlife, transportation, management of our electrical grid and its capacity, and our nation's and state's limited monetary resources. How could anyone have ever anticipated that when the NSA act was created by Congress that the most politically powerful family in the Gorge would many years later propose siting a huge industrial wind farm over 400 feet above a ridge immediately outside the boundary lines of the NSA and in plain view of their own White Salmon, Hood River, and Skamania County neighbors?

2. **Inadequate Electrical Grid**. An article published in the Oregonian Newspaper dated July 17, 2010 written by Ted Sickenger titled, "Too Much of a Good Thing: Growth in wind power makes life difficult for grid managers"

(http://www.oregonlive.com/business/index.ssf/2010/07/too_much_of_a_good_thing_growt.html) provides a great summary of the enormous limitations of the current grid system for handling the CURRENT number of wind turbines. It is a very complicated issue that needs to be rectified BEFORE we decide which green energy makes the most sense to invest government dollars in. Why are we spending huge amounts of subsidy money to build what will most likely be an obsolete technology by the time the electrical grid can handle the capacity of these giant wind turbines so they do not have to sit idle when the wind is blowing! There are promising new wind energy technologies under development right now that will very soon be economically viable without subsidies and have less visual and environmental impact. (See http://www.makanipower.com/ for example.)

3. **"Facts".** The promoters of this project have concentrated their money and power on a sales job based on selective misinformation in an attempt to promote the economic and political benefits (which have been grossly exaggerated) to Skamania and Klickitat Counties and WA State. Photos and "facts" have been specifically chosen or rejected to distort the realities as well as to quote old studies that are no longer appropriate. For example, there is a blatant omission (and highly selective inclusions) in the Draft EIS document of any photos of potential visual impacts from the Strawberry Mountain area in White Salmon. How about from the Mark O. Hatfield State Park scenic hike/bike trail along the Columbia River between Hood River and Mosier?

4. **Transportation Studies**. Now that the Oregon Court of Appeals recently upheld the Gorge Commission's right to approve the Broughton Mill development project, new transportation studies should be incorporated in the EIS to address the impact of these two Stevenson family projects, perhaps concurrent, on transportation.

5. **Wildlife Concerns**. There are wildlife concerns that need further study and have been addressed by other opponents to this project. I'm not a biologist, but the impacts on just bat populations by wind turbines has been sited by the USGS in this article: http://www.fort.usgs.gov/batswindmills/. " Dead bats are turning up beneath wind turbines all over the world. Bat fatalities have now been documented at nearly every wind facility in North America where adequate surveys for bats have been conducted, and several of these sites are estimated to cause the deaths of thousands of bats per year. This unanticipated and unprecedented problem for bats has moved to the forefront of conservation and management efforts directed toward this poorly understood group of mammals." These affects on bats and the other 300 species of birds in the Gorge, migratory birds, and other wildlife should be studied further before blindly accepting the notion that wind turbines are "green". Obviously this point isn't limited to just the Whistling Ridge project, but is relevant to all current technology wind farms including this one.

6. **Light pollution**. Visualize a peaceful summer evening enjoying the sunset view of the Gorge from Strawberry Mountain in White Salmon where we live (and from many other areas in the Gorge), and seeing 50 blinking red lights all going off at once as the sun goes down behind them! One of the big draws to rural areas is the beauty of the night sky devoid of city lights.

We hope you will conclude as we have that this is the absolute wrong location for this project, and probably the wrong technology for this time. Please let's use some good old NW common sense that we are known for. Rely on facts and not just somebody's sales pitch, political pressure, and the enticement

of big "free" subsidies, going into private pockets paid for by all US citizens. Please recommend the denial of this project in its proposed location to Governor Gregoire. It is the right decision.

Michelle, Kayce (UTC)

From: Kent and Barbara Bleakley [b[redacted]
Sent: Friday, August 27, 2010 3:48 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Energy Project
Attachments: Whistling Ridge Comments.doc

Attached are comments on the proposed project for your review.

Thanks,
Barbara Bleakley

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COMMENT LETTER 274

WR - DEIS
Public Comment #532

Michelle, Kayce (UTC)

From: Steve Royal [redacted]
Sent: Friday, August 27, 2010 5:31 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

The Columbia River Gorge National Scenic Area (CRGNSA) will be impacted again through the unnecessary slaughter of raptors being hit by the turbin blades. Raptors that are very important to the species food chain in the Gorge in that certain species will over produce with the demise of the raptors. The sight lines that are preserved in the Gorge with regulations will be invasive to the beautiful sights of the CRGNCA and the Lewis and Clark National Historic Trail from even the Columbia River itself.

The Washington Department of Natural Resources has clear cut forest on both sides of the Pacific National Scenic Trail within the CRGNSA. Why now would huge wind turbins be located upon a forested ridge line where industrial clear cutting would again most likely be utilized to place the huge turbine wind generators on that scenic destroying and forest destroying ridgeline?

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

The DEIS has other flaws. The DEIS fails to adequately analyze the potential cumulative impacts of this project when considered with other existing and likely future wind energy projects and other development projects in the region. The photo simulations in the DEIS are inadequate and misleading. Some of them have cloudy backgrounds, thus not adequately representing the full extent of the impacts, and other simulations are out scale. Additional viewpoints need to be considered, including views from the Historic Columbia River Highway. The DEIS erroneously concludes that the scenic impacts would not be significant, even though most of the turbines would be visible from designated key viewing areas within the National Scenic Area. In addition, the BPA and EFSEC have not adequately consulted with the Yakama Nation to ensure the protection of cultural resources.

Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Steve Royal

[redacted]

COMMENT LETTER 275

WR - DEIS
Public Comment #534

Michelle, Kayce (UTC)

From: [redacted]
Sent: Friday, August 27, 2010 10:42 PM
To: EFSEC (UTC)
Subject: I support Whistling Ridge

Hello Energy Facility Site Evaluation Council,

I would like to voice my strong support for the Whistling Ridge Energy Project. Washington State utilities must reach the goals set by Initiative 937. Wind is the most feasible and most cost-effective option for bringing 15% new renewable energy on the grid by 2020, which means we need to build more wind farms. Lewis County has the wind, Weyerhauser Lumber has the land: it is a match made in heaven. Many studies have shown that the environmental impact of the Whistling Ridge Energy Project would be minimal. For the last century, the site has been used in commercial forest operations. The land has already been cleared, roads built, transmission lines already installed, and wildlife habitats already fragmented. The impacts on a few other species that might be affected are rated low-risk. The environmental benefits are numerous. Wind is clean, renewable, and does not consume water or produce waste. Whistling Ridge will generate 75 megawatts of electricity; enough to power 20,000 homes a year, without contributing to global climate change. The choice is clear: support Whistling Ridge and Lewis County by approving this project.

Sincerely,
Rod Davidson
[redacted]

Late

WR - DEIS
Public Comment #535

Michelle, Kayce (UTC)

From: Elayne.[redacted]
Sent: Saturday, August 28, 2010 9:44 AM
To: EFSEC (UTC)
Subject: I support Whistling Ridge

Hello Energy Facility Site Evaluation Council,

I would like to voice my strong support for the Whistling Ridge Energy Project. Washington State utilities must reach the goals set by Initiative 937. Wind is the most feasible and most cost-effective option for bringing 15% new renewable energy on the grid by 2020, which means we need to build more wind farms. Skamania County has the wind, SDS Lumber has the land: it is a match made in heaven. Many studies have shown that the environmental impact of the Whistling Ridge Energy Project would be minimal. For the last century, the site has been used in commercial forest operations. The land has already been cleared, roads built, transmission lines already installed, and wildlife habitats already fragmented. The impacts on a few other species that might be affected are rated low-risk. The environmental benefits are numerous. Wind is clean, renewable, and does not consume water or produce waste. Whistling Ridge will generate 75 megawatts of electricity; enough to power 20,000 homes a year, without contributing to global climate change. The choice is clear: support Whistling Ridge and Skamania County by approving this project.

Sincerely,
Elayne Novotny
[redacted]

COMMENT LETTER 276

WR - DEIS Public Comment #521

Michelle, Kayce (UTC)

From: Gretchen Starke [redacted]
Sent: Friday, August 27, 2010 4:56 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Energy Project DIES
Attachments: whistling ridge, deis comments, aug 2010.doc

Attached are the comments of the Vancouver Audubon Society.

Gretchen Starke

VANCOUVER AUDUBON SOCIETY

www.vancouveraudubon.org

308 NE 124th Avenue
Vancouver, Washington 98684
August 27, 2010

Stephen Posner
energy Facility Site Manager
WA EFSEC
Energy Facility Site Evaluation Council
905 Plum Street SE
Olympia, Washington 98504-3172

Andrew M. Montano
Environmental Protection Specialist
BPA
905 NE 11th Avenue
Portland, Oregon 92708-3621

RE: WHISTLING RIDGE ENERGY PROJECT – APPLICATION NO. 2009-01

Dear Mr. Posner and Mr. Montano:

Our sister organization, the Seattle Audubon Society, is the intervener in the process of this site certification and will have more detailed comments. Nevertheless, as an organization dedicated to the welfare of birds and all wildlife, the Vancouver Audubon Society has an interest in this project. It is also in the Columbia River Gorge area, an area that we have long been concerned with.

In reading this DEIS, one thing stands out. Rather than being a decision making document, which DEISs are supposed to be, this appears to be a justification document, providing support for a decision that is already in the mind of the preparers. The failure to analyze more than two alternatives -- the applicants desired outcome and the required do-nothing alternative -- strengthens that impression. The alternatives considered (briefly?) but eliminated from detailed study were given short shrift. The perceived economic shortcomings of some of these possible alternatives is not reason enough to fail to analyze and compare to see if a smaller size or different configuration might be less harmful to wildlife. Economics change with changing conditions, whereas the needs of wildlife are seldom so flexible.

In looking at the avian survey section (3-30 to 3-65) , it is not possible to determine how many of which species were found. Therefore, we have no idea of the value of this site to many birds,

especially the songbirds. Rufous hummingbirds were found in the spring and summer, but how many? Were they males or females? During the migration season, how many warblers passed through? Were they in the strike zone of the blades? Percentages are not useful for analysis without knowing what they were percentage of. Further, it would be more useful to be able to compare the use and species composition, in numbers, of this site to the use and species composition, in numbers, of the nearby Forest Service and Department of Natural Resources land.

The northern spotted owl has been declining in Washington about seven percent a year. Therefore it is no wonder that many historical nest sites are no longer used. There are fewer birds to use them. It stands to reason, however, that to eliminate historical nest sites is to eliminate that chance for a pair of owls to use that site ever again. How, then, is the population to recover? The fact that nearby owl habitat areas are no longer used does not mean that they should be dismissed as potential owl habitat. They must be taken into consideration. It should have been noted that all DNR land in the state is covered by a Habitat Conservation Plan that *includes the northern spotted owl* along with salmon and many other species.

The fact that Vaux's swifts were seen during the fall migration is of concern. Yet, there is inadequate discussion of mitigation measures to avoid mortality of swifts, as well as songbirds and other small birds during migration.

We concur with the Seattle Audubon Society in their observation of the weakness of the cumulative impact analysis in the DEIS. In addition, considering that any kind of development causes loss of habitat, the DEIS should have considered, not only potential future wind power development in forested areas, but the impact of many other types of development, such as housing, that permanently destroys habitat.

We appreciate the opportunity to comment on this DEIS.

Sincerely,

Gretchen Starke

Conservation Chair,
Vancouver Audubon Society

COMMENT LETTER 277

WR - DEIS
Public Comment #524

Michelle, Kayce (UTC)

From: Sally Newell [redacted]
Sent: Friday, August 27, 2010 5:01 PM
To: EFSEC (UTC)
Subject: whistling ridge DEIS
Attachments: whistling ridge deis comment.doc

To Whom it May Concern,

Attached are our comments on the Whistling Ridge Energy Project.

Paul and Sally Newell

Sally and Paul Newell

[redacted]

August 27, 2010

Mr. Jim Luce, Chair

Washington Energy Facility Siting Council

905 Plum St. SE, Third Floor

P.O. Box 43172

Olympia, WA 98504-3172

Dear Mr. Luce,

Thank you for the opportunity to comment on the Draft Environmental Impact Statement for the Whistling Ridge Energy Project. We deeply appreciate the extension of time allowed to review the document, as it has allowed us a fuller understanding of the impacts that the state intends to consider relative to this project.

The DEIS overall appears to us to be a shallow (in spite of its sheer mass) analysis of the impacts of the proposed project. Since our expertise in the field of natural resource studies is limited, we will rely on others to address the project's impacts on bird and bat populations, although we note that reliance on studies conducted by the project proponents seem suspect. A party with a vested interest in the construction of a windfarm would not necessarily be the party we would select to provide unbiased data on any aspect of the potential harm to the public or resources. We would be much more comfortable with analysis by independent professionals in the various fields of study, selected by the state agencies the public employs to safeguard these important public resources.

We will focus on three areas in which we feel we do have a certain amount of expertise: Scenic resources, Transportation resources and Recreation resources.

As a former Commissioner serving at the pleasure of Governor Mike Lowry on the Columbia River Gorge Commission, Sally has a more than passing interest in (and acquaintance with) the local landscape. She also worked as a school bus driver for Mill A School, traversing Cook-Underwood Road between Mill A School and the Underwood Community Center for over 10 years. As a professional driver, she had a unique perspective on the safety aspects of this road, as well as SR14, which was often used to transport students to games and field trips. Paul has lived in Underwood all his life, and for the first 10 years of his adult life worked for Broughton Lumber Company at the Willard Mill, commuting on Cook-Underwood Road from Underwood to Willard. Both of us are avid horsemen, riding and packing in and around Underwood, Mill A and Willard, as well as on the nearby Buck Creek Trail System and in the Gifford Pinchot National Forest.

To the scenic component of the DEIS, we would point out that the photographs purporting to depict the scenic impacts from various vantage points were obviously selected to minimize the impacts in the eye of the beholder. Importantly, NONE of the photographs depict the way these views will look at night, with red aviation lights destroying the appearance of the ridgelines in the moonlight. After all, it is dark about half of the time, and we think the scenic value of the project area at night should be a consideration, especially since there is currently nothing in the area that generates the kind of scenic distraction that a string of red aviation lights (visible for 20 miles) strobing every few seconds will. These are not low to moderate impacts, especially if they are visible from YOUR living room windows.

While the project is (just barely) outside the Columbia River Gorge National Scenic Area, we feel that a project that impacts a national treasure should be evaluated carefully. Buckets of money, not to mention blood, sweat, tears and emotional distress on all sides have been expended to preserve the scenic , natural, cultural and recreation resources of this place, and to encourage economic development in a way that is compatible with that preservation. It makes no sense to us, after 25 years of effort, for the State of Washington to produce a 1500 page document that fails to properly consider the impact this project would have on the CRGNSA. When the boundaries for the scenic area were established, no one could possibly have conceived that just 25 years later, the state would be considering allowing structures 400 feet high a mere 50 feet outside that boundary, and clearly visible from major viewing areas, including two population centers within the CRGNSA.

We are among the many people who have invested their lives and their life savings in this beautiful place with the understanding that is a special, protected place, recognized by our government with special status to allow it to remain beautiful for future generations to enjoy. We are among the people who willingly, through design and landscaping, try to make our homes and other structures blend with the surrounding landscape. We are among the many people who understand that even though we own a fairly large piece of land, will not be able to divide it among our children and grandchildren, in the service of a larger public ideal. And that's okay with us, as long as the sacrifice is shared equally. It seems to us that for the state to allow a desecration of the scenery of this kind makes a mockery of that sacrifice in the name of lining the pockets of a wealthy local dynasty. We didn't notice any analysis of that in the DEIS.

We feel it is worth mentioning that the wealthy local dynasty mentioned above recently won a decision from the Oregon Court of Appeals that will enable it to construct a major destination resort along SR14 on the site of the old Broughton Mill at Hood, directly south of Underwood. Construction and operation of that resort will significantly impact local traffic as well as recreation uses at the Hatchery State Park, and needs to be considered in the transportation and recreation sections of the DEIS.

The transportation section of the DEIS fails to mention the five tunnels between Cook and Underwood on SR 14. It does mention the tunnels at Lyle in its analysis of potential haul routes, but the ones between Cook and Underwood are omitted. Those tunnels are so dangerous that Mill A School doesn't allow its busses to use them when students are being transported. They are so low that there are very few local drivers who haven't witnessed semi trucks crossing the center line inside those tunnels to take advantage of the added height in the center of the tunnel's arc. We were nearly killed by one of these ourselves. We would not have considered that to be a moderate impact.

The only viable way for SDS to get those turbines to Bingen would be by barge or rail, in our opinion. Getting them to the proposed project site with "low to moderate impacts," will be far more difficult.

Section 4.3 purports to analyze transportation issues associated with the project. Section 4.3.1.1 Regional and Site Area, fails to even mention the community of Underwood. While it is an unincorporated community, we would guess the population at (conservatively) 2500, based on information obtained from the Skamania County Assessor in the early 1990's. Attempts to update that information from several county departments were unsuccessful, but with the new census nearing completion, we would hope that EFSEC would obtain that information for a final EIS. We contest the DEIS's conclusion that impacts to these residents during construction would be low to moderate. Underwood has only one road connecting it to SR14, and there is no viable alternative route to any other state or county road that would get one to White Salmon or Stevenson. Cook-Underwood Road is Underwood's lifeline to the outside world, and any disruption to its use will impact residents, especially in emergency situations.

The proposed haul route from Bingen to Underwood over SR14 underestimates the dangers posed by existing local conditions. The DEIS fails to even mention the dangers posed by traffic attempting to enter SR14 at Dock Grade Road. This intersection is the site of many accidents every year, and these will be exacerbated by the presence of many oversized, overweight trucks westbound on SR14. Dock Grade is the main route for folks from White Salmon to SR14, commuting to Hood River or elsewhere for work, shopping and recreation. People take crazy chances there, and sight distances are deceiving. The intersection of SR14 and SR141 is so dangerous that WDOT placed a warning sign with flashing lights just east of the blind corner leading into it. SR141 is the main route to the White Salmon River Valley, and the communities of Husum, BZ Corners, Glenwood and Trout Lake. Population in these places has grown considerably over the past 20 years or so, along with recreation use. Trout Lake is the gateway to Mt. Adams and the Gifford Pinchot National Forest in this area. It is the road to the White Salmon Wild and Scenic River and associated rafting and kayaking opportunities.

SR14 is so narrow between these two intersections that it is a challenge for a passenger car, a semi truck and a bicycle to share the road. There is no shoulder whatsoever in many places, and we'd measure the lanes in a couple of spots to contest the DEIS's assertion of 12 foot lanes if it wasn't such a dangerous proposition. An Underwood man was killed there a couple of years ago walking his dog. In order to safely move oversized loads through there, we think one-way traffic with flaggers will be needed, but the DEIS does not mention this. Traffic volume through this stretch is heavy by local standards, but the DEIS contains no analysis. It uses "typical rural highway traffic patterns," to reach its conclusions. Is it too much to ask that counters be placed on the roadways to determine actual usage during the proposed construction season?? The mix of traffic is horrendous, especially in the summer and early fall months . . . you'll see bicycles, pedestrians (crazy people), long-haul semi's and log trucks, along with RV's of every description, school busses and passenger vehicles. The DEIS generalizes the width of SR14 from SR97 and SR395, and doesn't really talk about SR14 from Bingen to Underwood. This is an unconscionable omission.

The analysis of Cook-Underwood is all rosey, too. At the top of page 4.3-5, the DEIS states that "very little as-built information is available regarding existing pavement and base thickness along the proposed haul route." Cook-Underwood Road was built many years ago to accommodate local traffic, agricultural hauling and log trucks. Maintenance has consisted of occasional treatments with chipseal and gravel. There are many sections where the asphalt is already showing some distress, and it runs along a steep, unstable bluff up to 1000 feet above SR14. SR14 runs along the river at almost sea level, and most of Cook-Underwood is 500-1000 feet in elevation. The DEIS doesn't mention the very steep grade coming up from SR14 at both ends, and it doesn't say anything about how slow those big overweight loads will be going, but there will be serious deterioration of LOS going on there, too! Table 4.3-1 indicates 240 commuters will be trying to come up the hill at Underwood at peak pm drive time . . . we'd like to see counters on that, too. Imagine those folks following these slow, giant trucks all the way to their driveways, because many of them will have to. A trucker friend of ours said they would need to hook two semis together to move the heaviest loads up the worst part of the grade . . . would there be a delay associated with that practice? Where is the analysis of that? Between Highland Orchard Road and Chenoweth Road is a steep hill with a series of sharp curves and limited shoulder. There will likely be lots of delays for local traffic there, too, but there is no mention in the DEIS. There are many parts of Cook-Underwood which are narrow with little or no shoulder, and as mentioned before, a steep, high and unstable bluff on the south side. What happens to the folks up here if the road just gives way at some point? Our guess is that the LOS would suffer for years to come. It could even cause a home to have to give up its yard to enable the road to be re-routed. The DEIS is silent on this point. If the rest of this DEIS is as deficient as the transportation section, it is a shoddy document indeed!

Garbage in, garbage out. EFSEC needs to calculate LOS using real traffic counts and hard data, not HCS+algorithms. It is not unusual to wait 10-30 seconds to enter SR14 from the east outlet of Cook-Underwood Road as it is. Add traffic associated with a major construction project at the old Broughton mill site and oversized loads for windmill construction to the current situation and there will be serious impacts to local transportation. In addition, parts of Cook-Underwood along the bluff are narrow

enough that flaggers and one-way traffic would be needed to allow the big loads through, but there is no mention of the LOS impact of that. Kids on school busses in Underwood have a 45 minute ride to Mill A School, and about the same to White Salmon. Traffic delays could mean the difference between arriving at school ready to learn, and missing breakfast and playing catch-up all day long for them.

We were struck by the lack of information about the numbers of local people who will be impacted by the construction phase. The economic impact of the jobs generated by the construction phase could well be offset by visitors who will never return after tangling with the traffic nightmare that will ensue.

There is nothing in the DEIS speaking to the roads themselves, about the damage those giant loads are liable to cause. The road being built on SDS land is 60 feet wide. How on earth will our little, old, 24 foot roadways accommodate these trucks and cranes? The DEIS needs to tell us that. The fact that Skamania County has no over-size or over-weight restrictions in place at this time doesn't mean the roads will accommodate these loads . . . this county has been through 4 or 5 county engineers in the past few years. The head of the county's Public Works department has no engineering credentials.

The DEIS is also deficient in the area of recreation. The Buck Creek Trail System receives short shrift in the DEIS. This trail system was built years ago by a local couple, with the cooperation and assistance of the Washington Department of Natural Resources. There was a trailhead, known as the Whistling Ridge Trailhead, complete with corral and campsite immediately adjoining the project area to the north. That trailhead has disappeared, along with the trail connecting it to the rest of the Buck Creek Trail System. The local chapter of Backcountry Horsemen of Washington recently had a work party on the trail system, and after much searching, found the northern end of the trail, but lost it in the clearcut to the south. The trailhead is depicted on the wooden map near Northwestern Lake, and on paper maps distributed by DNR as recently as three years ago.

Figure 4.2-27 purports to depict recreation facilities and key viewpoints. It shows the trailheads, but fails to clearly depict the trails and topography in a way to meaningfully show the potential visual impact on trail users. These include, but are not limited to the Buck Creek Trail System, and the Monte Cristo and Monte Carlo trails north of it. There are many places in the Gifford Pinchot that the project would be visible from, like Little Huckleberry Trail north of Willard. The project will be highly visible from the best southerly views from Little Huckleberry and the Buck Creek Trails, and could preclude the rebuilding of the Whistling Ridge Trail due to degradation of the trail experience. The DEIS does not discuss the disruption of a backcountry campout by aviation lights flashing to the south, and generally makes light of the impacts that will be suffered by recreationists subjected to the deterioration of their experience due to the scenic impacts associated with the project.

In sum, we think your DEIS is deficient and that the Whistling Ridge Energy Project has the wrong name, in the wrong place.

Sincerely,

Paul and Sally Newell

From: repar [redacted]
Sent: Friday, August 27, 2010 10:59 AM
To: EFSEC (UTC)
Subject: Whistling Ridge DEIS comments-transport-Repar-4
Attachments: Comments_DEIS_Transportation_27Aug2010.doc

Importance: High

Dear EFSEC,
Attached, please find my comments on Transportation as regards the Whistling Ridge project.
Thank you.

Mary J. Repar
[redacted]

Mary J. Repar

[redacted]

27 August 2010

EFSEC
905 Plum Street SE
Olympia, WA 98504-3172
e-mail: efsec@commerce.wa.gov

BPA
Public Affairs Office – DKE -7
P.O. Box 14428
Portland, OR 97293-4428
Toll-free comment line: 800.622.4519
FAX: 503.230.3285
503. 230. 4145
www.bpa.gov/comment

Re: The Whistling Ridge DEIS and the inadequacy of the data and analyses for impacts to transportation in the region

Dear EFSEC and BPA,

I am greatly concerned about what I feel is a very inadequate analysis of the actual impacts to our roads and byways by the transport of the wind turbines and other construction paraphernalia for the Whistling Ridge wind farm project. The "specialized" trucks that are needed would, I believe, create havoc on our roads and there would also be serious damage to our rural, scenic public roads. The whole issue of which roads SDS would actually use if this wind farm is approved, has not been adequately addressed in the DEIS. Skamania County authorities also fail to address impacts to our roads and byways from all the over-weight traffic for this wind farm proposal. Waiting to figure it all out after the fact is not good public policy and it certainly is not public disclosure.

I needed to educate myself on this issue and the following disturbing information is about what it really takes to transport wind turbine components. My emphasis is in **bold red.** The following is an article on what makes wind energy possible:

http://www.go-explore-trans.org/2009/nov-dec/wind_turbines.cfm

Trains, trucks, and ships make wind energy possible

by Katie Greenwood

Imagine yourself in a flat, wide-open field. Next to you, extending about 400 feet into the air is a wind turbine. Its 3 gigantic steel blades whoosh around and around hundreds of feet above your head.

A wind farm in Kansas
Photo courtesy: Brent Danley via flickr

Standing next to a wind turbine, you can witness the incredible power of the wind to move this massive machine.

But before the wind could move the turbine, something else had to move it first.

Trucks, ships, and trains move wind turbines from the factory to the wind farm. A wind farm is a group of wind turbines in the same location used to produce electricity. (Wind farms are also called wind power plants.)

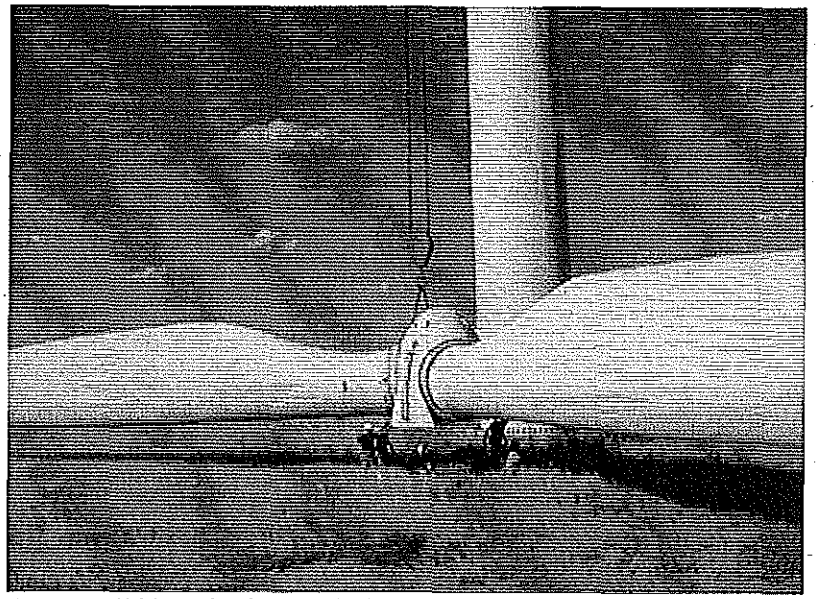
In the United States, Texas and Iowa have the greatest number of wind farms because flat plains are the best sites for wind farms, but **many turbines come from factories outside of the United States.**

Just how big are they?

Wind farms range in size from a few dozen to 421 turbines. **A single turbine is transported in up to 12 pieces.**

Wind turbines are manufactured and shipped in several parts, and each part is huge.

The tall, vertical piece is called the tower. It's usually made in 3 parts but sometimes more.



A crane lifting the huge blades and hub of a wind turbine
Photo courtesy: rockymountaincrane.com

Each section of the tower is about 120 feet long and weighs up to 70 tons. An empty semi-truck and trailer weighs about 15 tons.

Attached to the top of the tower is the nacelle. The nacelle houses the generator, power electronics, and the gears that turn the wind into electrical energy. **Nacelles weigh 50–70 tons.**

Most turbines have 3 blades that are attached to the nacelle by the rotor hub. Some blades are up to 50 yards long. **A 3-blade rotor hub can almost cover a football field!**

Curriculum connection

Using geometry in a transport route survey

Before construction of a land wind farm can begin, route planners consider several possible trucking routes for the turbines.

Route planners study several factors including traffic, road construction, surrounding buildings, and environmental issues to determine the best route.

With the help of a surveyor, the route planner **assesses the steepness of hills and inclines along the route.** A surveyor can take the necessary measurements using a transit.

Students practice using
a surveyor's transit.

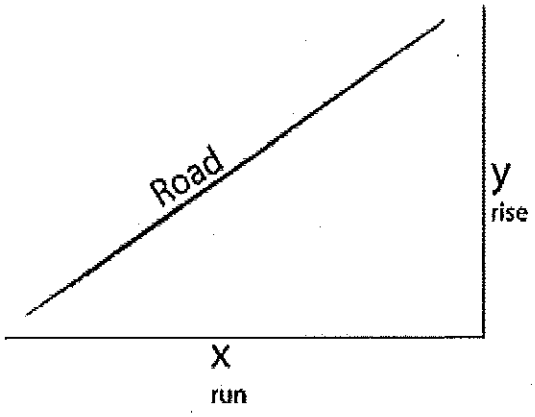
The steepness of a road's incline is called the *grade*. **Turbines can safely ascend and descend grades of less than 15%.** Steeper grades **can potentially lead to accidents that damage turbine parts or cause erosion of the soil and structure beneath the road.**

If the surveyor assesses the grade at greater than 15%, it may be necessary to level the roads or put in erosion control measures for that part of the route.

Getting the grade

How do they get the grade?

The illustration below shows a highway in profile. Notice that a right triangle has been constructed in the diagram.



An illustration of the the verticle and horizontal distances of an inclined road.

The bottom of the triangle is the horizontal distance a particular section of highway covers. This horizontal distance, or the "run" of the highway, indicates how far a vehicle would travel on the road if it were level.

The "rise," or vertical distance, is a measure of how much higher a vehicle is after driving along the road. To find the "rise," the surveyor must determine the difference in elevation from the bottom of a slope to the top.

Putting it together

Similar to calculating the slope of a line in your geometry class, calculating the incline of a road is simply "rise over run."

Slope is the measure of the vertical rise in the road divided by the horizontal distance or:

$s=y/x$

Grade is the slope expressed as a percentage. To find the percent, the slope is multiplied by 100.

$G=100s$

Try it out: If a highway rises 375 feet over 1 mile, is the grade safe for trucks hauling turbine components?

Check your answer.

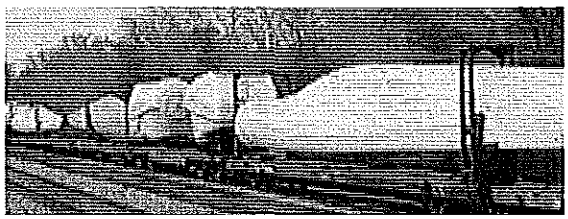
So to build even small wind farms, there are many large loads that must travel long distances.

How in the world are these hulking parts moved?

The type of transportation used depends on the location of the wind farm. Often, a combination of transportation modes is used for each wind farm.

By train

A large number of turbines manufactured in the United States are first transported by train, according to Dr. Nadia Gkritza, who is currently researching sustainable energy and transportation systems at Iowa State University.



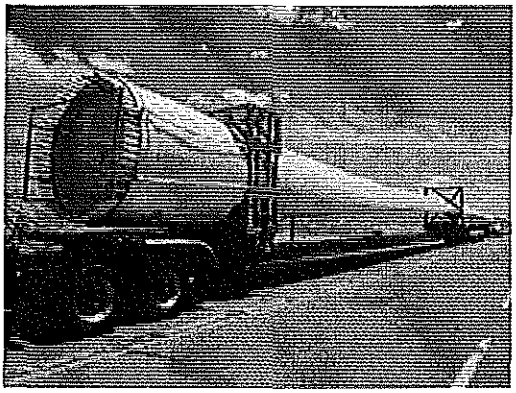
A single train can haul 50–70 cars of wind turbine parts. *Photo courtesy*: kedziers via flickr

A single train can haul 50–70 cars of wind turbine parts. It costs less to move turbine parts by train because more can be moved at a time, but the train routes **must avoid low overpasses** when hauling the large components.

But since trains don't directly connect to the wind farms, the final transportation leg must be done by truck.

By trucks

Trucking has been the most common method of transporting turbines because trucks can go directly to a wind farm.



Each wind turbine requires 8–12 semi-truck trailers. Many turbine loads weigh more than 100,000 pounds. *Photo courtesy*: Bill Weaver via flickr

Transporting by truck requires 8–12 trailers for each turbine.

Hauling the oversized loads requires a permit from the state Department of Transportation. The trucks must follow paths that avoid road construction, low bridges, and busy city centers. **Often, trucks have to take a long route to their destination when transporting turbines.**

Many wind farms are located within crop farmland. **This means that these heavy** parts travel on narrow, unpaved roads that are not designed to accommodate the heavy loads. Immediately after a wind farm is completed, **maintenance workers must repair and level the roads.**

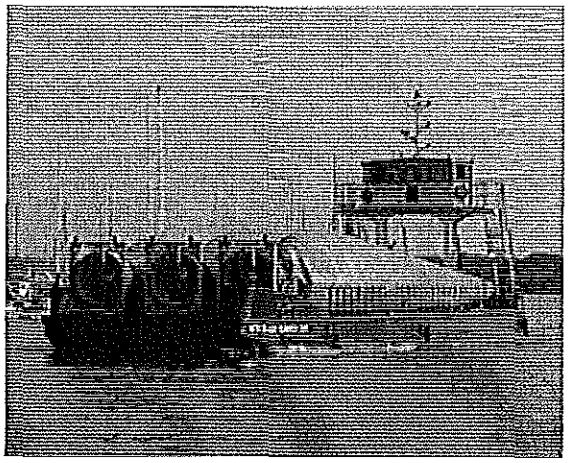
Highways and interstates can handle about 80,000 pounds. Many turbine loads weigh more than 100,000 pounds, so transporting turbines can cause damage to even these roads over time.

By ships

When turbine components come from overseas, they are imported in several shipments. Each ship carries only 1 type of component.

When Vestas imported 60 turbines into the Port of Longview in Washington, **all the components arrived in 5 shipments.** The towers **arrived in 3 separate shipments followed by 2 shipments of nacelles and blades.**

The fragile loads must be packed tightly but carefully to avoid damage. Safety must also be considered to avoid interfering with the ship's stability and navigation.



Ships and barges don't have to negotiate tight turns or avoid overpasses like trucks and trains. *Photo courtesy*: GrahamAndDairne via flickr

There are specific ways of lashing and securing the parts to the ship. When shipped long distance, blades are shipped in transport containers to keep them from shifting around.

As wind energy technology advances, new wind farms are being erected off shore. An offshore wind farm in Nantucket Sound, Massachusetts, is scheduled to begin in 2010. The project is being called Cape Wind.

One advantage to transporting by ships and barges: **they don't have to negotiate tight turns or avoid overpasses like trucks and trains**.

Learn More

The American Wind Energy Association offers an excellent wind energy tutorial that discusses the basics of wind power.

Katie Greenwood is a writer for *Go!*.

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IOWA STATE UNIVERSITY
Institute for Transportation

In conclusion, some of the issues and disturbing facts about what it really takes to transport and build a wind farm:

- many turbines come from factories outside of the United States;
- **A single turbine is transported in up to 12 pieces;**
- **Each section of the tower is about 120 feet long and weighs up to 70 tons.** An empty semi-truck and trailer weighs about 15 tons;
- **Nacelles weigh 50–70 tons;**
- A 3-blade rotor hub can almost cover a football field!;
- Route planners study several factors including traffic, road construction, surrounding buildings, and environmental issues to determine the best route; assesses the steepness of hills and inclines along the route;
- **Turbines can safely ascend and descend grades of less than 15%.** Steeper grades **can potentially lead to accidents that damage turbine parts or cause erosion of the soil and structure beneath the road;**
- If the surveyor assesses the grade at greater than 15%, it may be necessary to level the roads or put in erosion control measures for that part of the route;
- So to build even small wind farms, there are many large loads that must travel long distances;
- A single train can haul 50–70 cars of wind turbine parts. It costs less to move turbine parts by train because more can be moved at a time, but the train routes must avoid low overpasses;
- Transporting by truck requires 8–12 trailers for each turbine;
- Often, trucks have to take a long route to their destination when transporting turbines;
- Many wind farms are located within crop farmland. **This means that these heavy** parts travel on narrow, unpaved roads that are not designed to accommodate the heavy loads. Immediately after a wind farm is completed, **maintenance workers must repair and level the roads;**
- Highways and interstates can handle about 80,000 pounds. Many turbine loads weigh more than 100,000 pounds, so transporting turbines can cause damage to even these roads over time;
- When turbine components come from overseas, they are imported in several shipments;
- When Vestas imported 60 turbines into the Port of Longview in Washington, **all the components arrived in 5 shipments.** The towers **arrived in 3 separate shipments followed by 2 shipments of nacelles and blades;**
- One advantage to transporting by ships and barges: **they don't have to negotiate tight turns or avoid overpasses like trucks and trains.**

Analysis on grades and transportation requirements is totally inadequate in the DEIS. The Whistling Ridge proposal involves grades ranging from 5% to 70%. More expert survey data is needed for the DEIS. More analysis and data is needed on just how much the transport trucks and the wind infrastructure materiel actually weigh and how much damage they might do to our rural roads and byways. And, I think we all need to know just how SDS really proposes to get these huge, heavy, and unwieldy turbines up steep slopes that are prone to

erosion and mass wasting! **(Mass wasting and soils will be addressed in a separate memo.)**

The DEIS is totally inadequate on the transport issue. Thank you.

/e-signature/**Mary J. Repar**
27 August 2010

Michelle, Kayce (UTC)

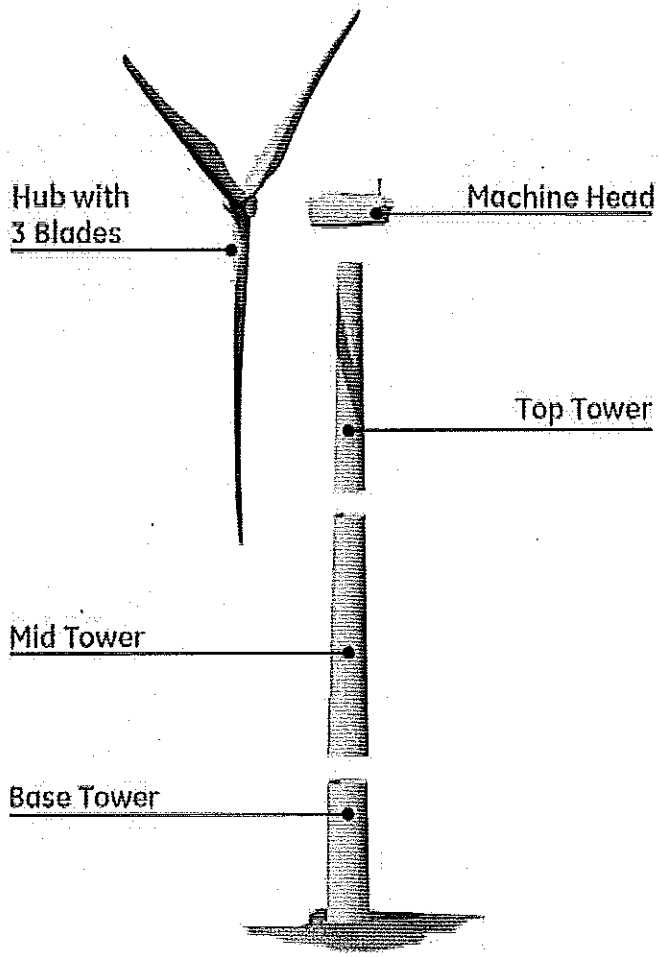
From: repar [redacted]
Sent: Friday, August 27, 2010 4:44 PM
To: EFSEC (UTC)
Subject: Addendum to Whistling Ridge comments (e-mail 4) on transport
Attachments: DEIS_turbine_specifications_27Aug2010.pdf

Importance: High

Dear EFSEC,
Attached, please find a pdf file, DEIS_turbine_specifications_27Aug2010.pdf, that I wish to be attached to my previous e-mail on transportation. It was #4 in the subject line. I'm sorry that some of the pictures are cut off—my technical expertise has failed me late in the day! Thank you very much.

Mary J. Repar
[redacted]

Mesalands Community College
Wind Turbine Specifications



Dimensions & Weights

Hub height – 80 meters or 253.6 feet

Tower Components

Component	Weight(lbs)	Length(Ft.)	Diameter(Ft.)
Base Section	126,766	73.2	15 to 14.1
Middle Section	83,445	82	14.1 to 11.2
Top Section	65,936	98.4	11.1 to 8.4

Other Components

Component	Weight (lbs)	Length(Ft.)	Diameter (Ft.)
Hub	37,479	N/A	10.5
Blade	13,889	121.4	6.4

Rotor (assembly)	79,146	N/A	252.6
Nacelle	121,916	28.9	12.5x12.5

Foundation

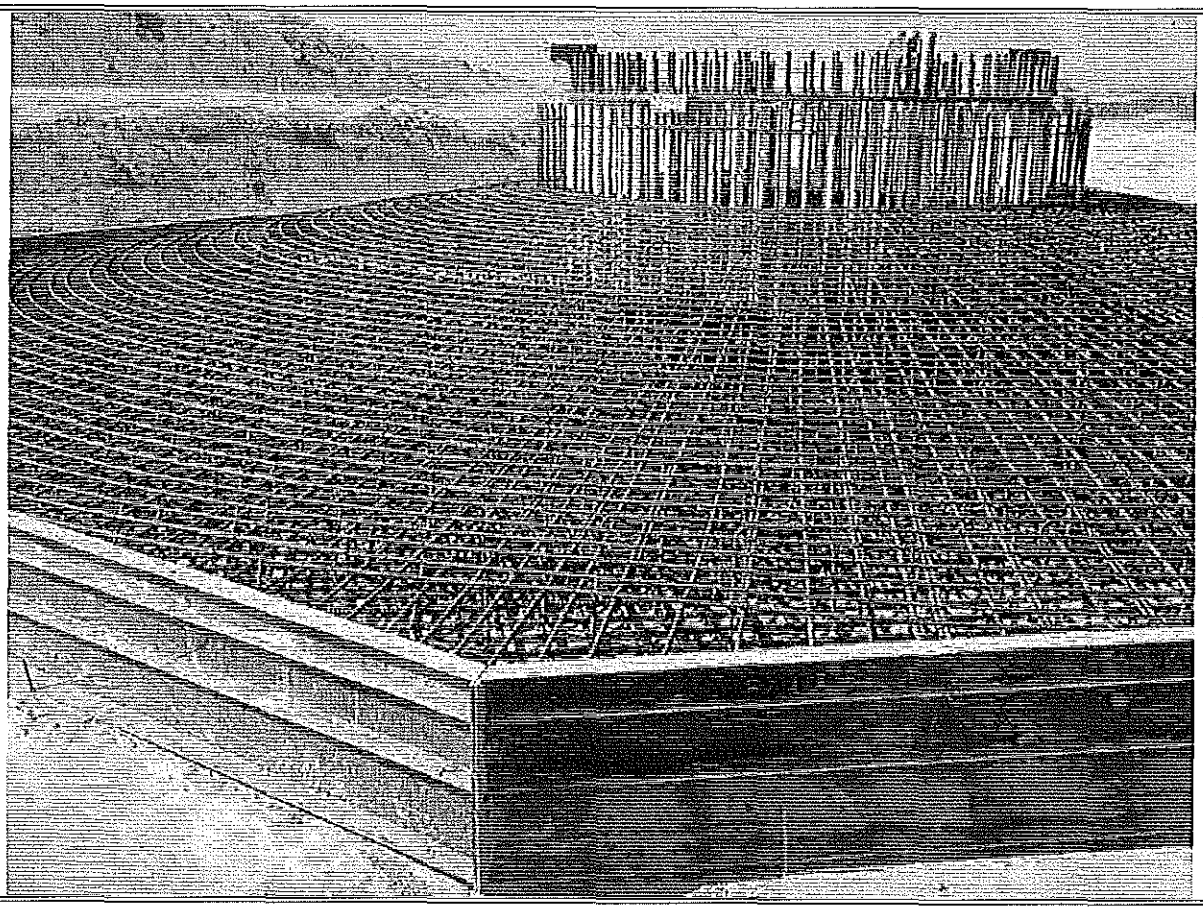
Foundation is 45 feet across by 9 feet thick and is installed below the existing ground plane:

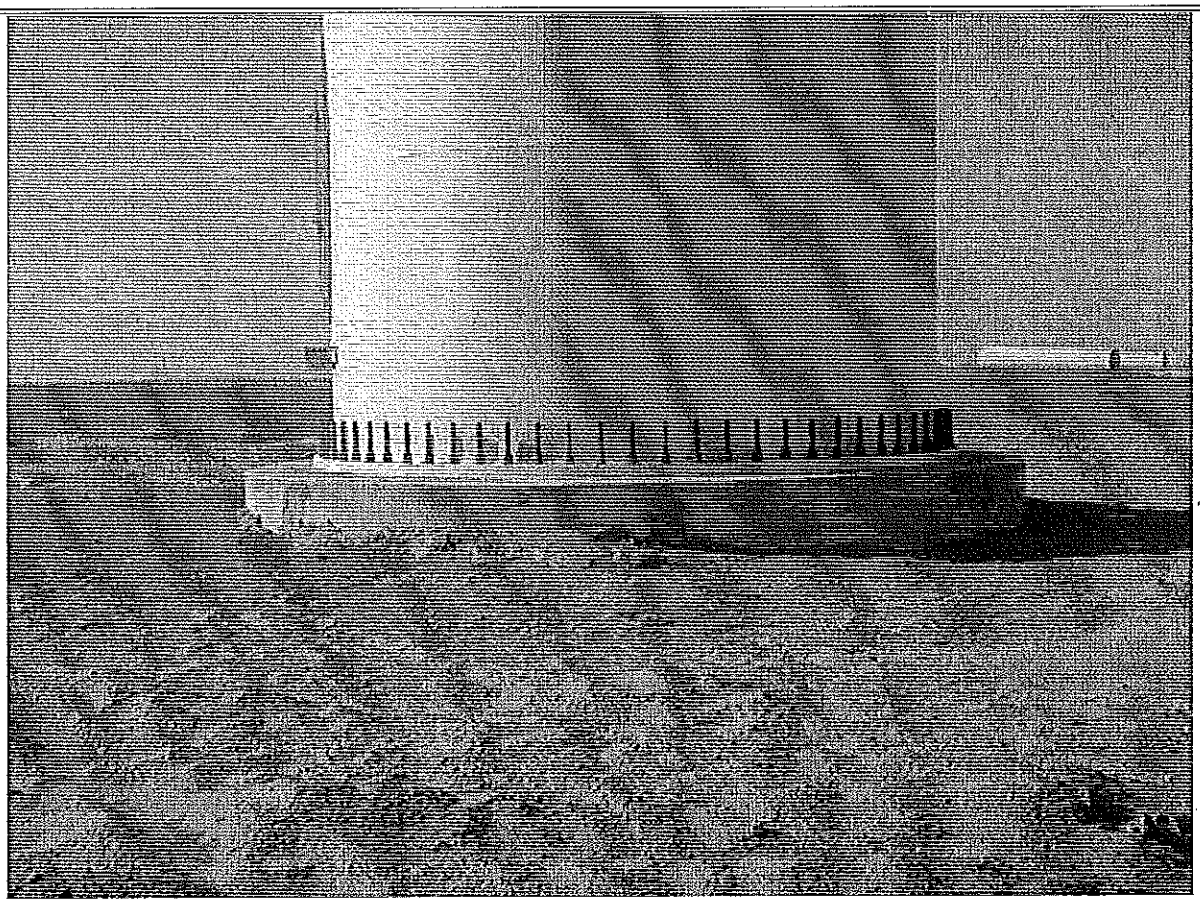
12,150 cubic fee

450 cubic yards

742 Tons of concrete (using 3,300 lb/yd^3)

45 trucks of concrete



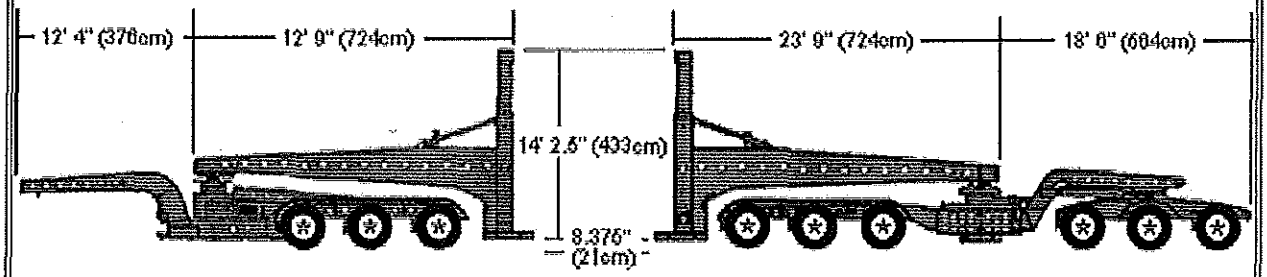


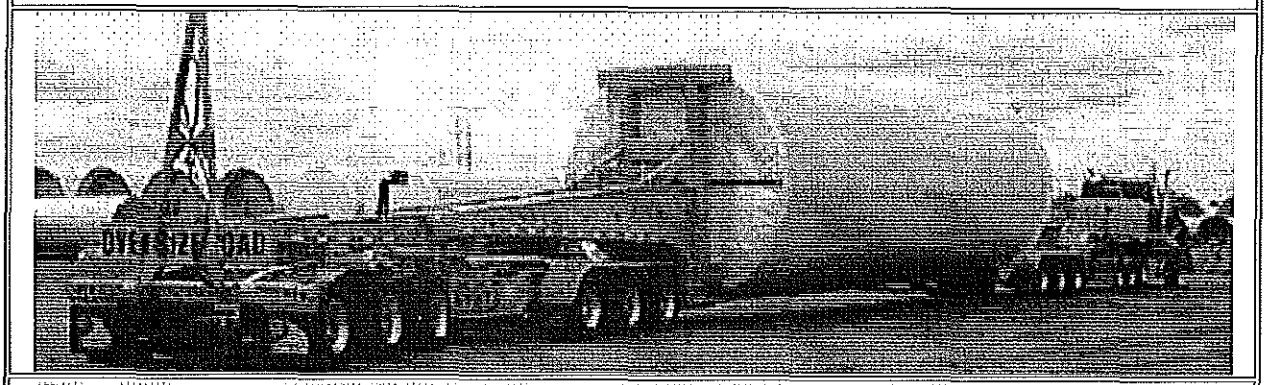
Tower Section Transportation

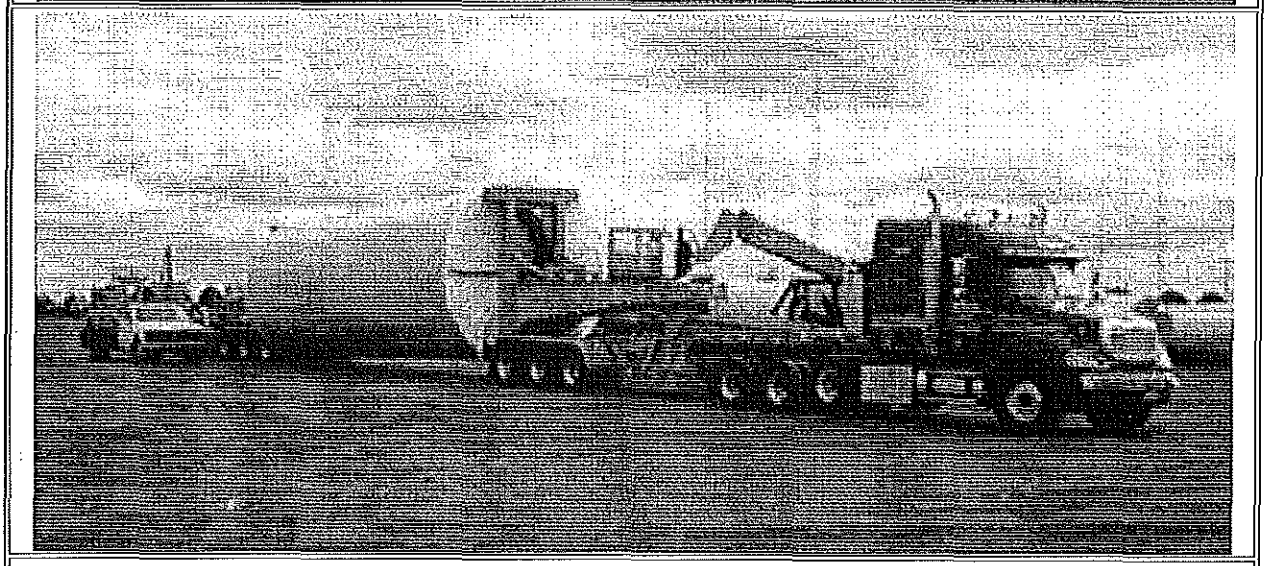
Wind Turbine arrived October 14th , 2008.

There was 7 trucks hauling the turbine but only some were just normal trucks. For tower segments, transportation used Schnable type trailers, the tower section is connected to the Schnable attachments of the trailers. The tower section thus forms an integral part of the trailer arrangement and is not supported on any kind of chassis

6 AND 9 AXLE SCHNABLE WITH STEERABLE DOLLY

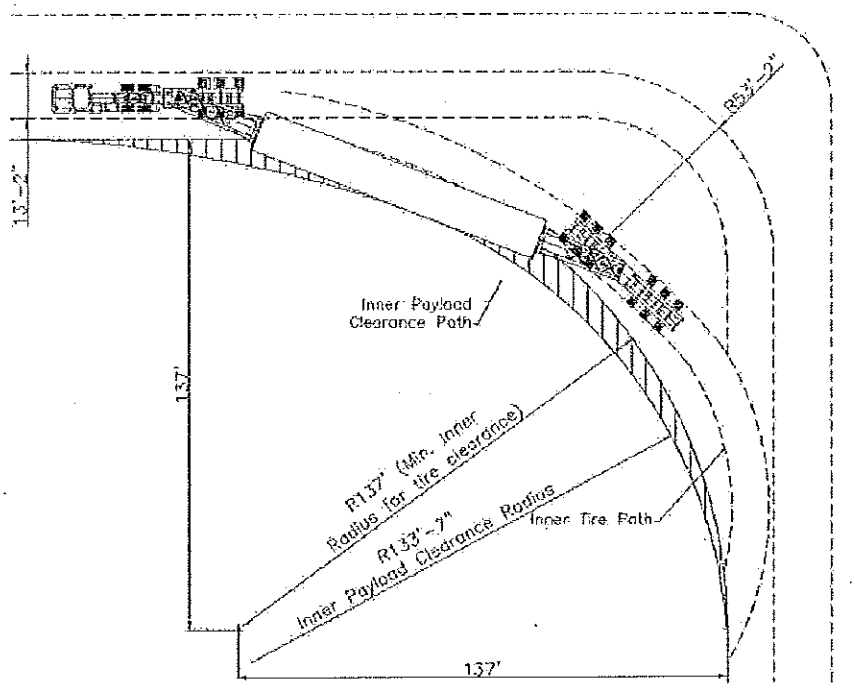




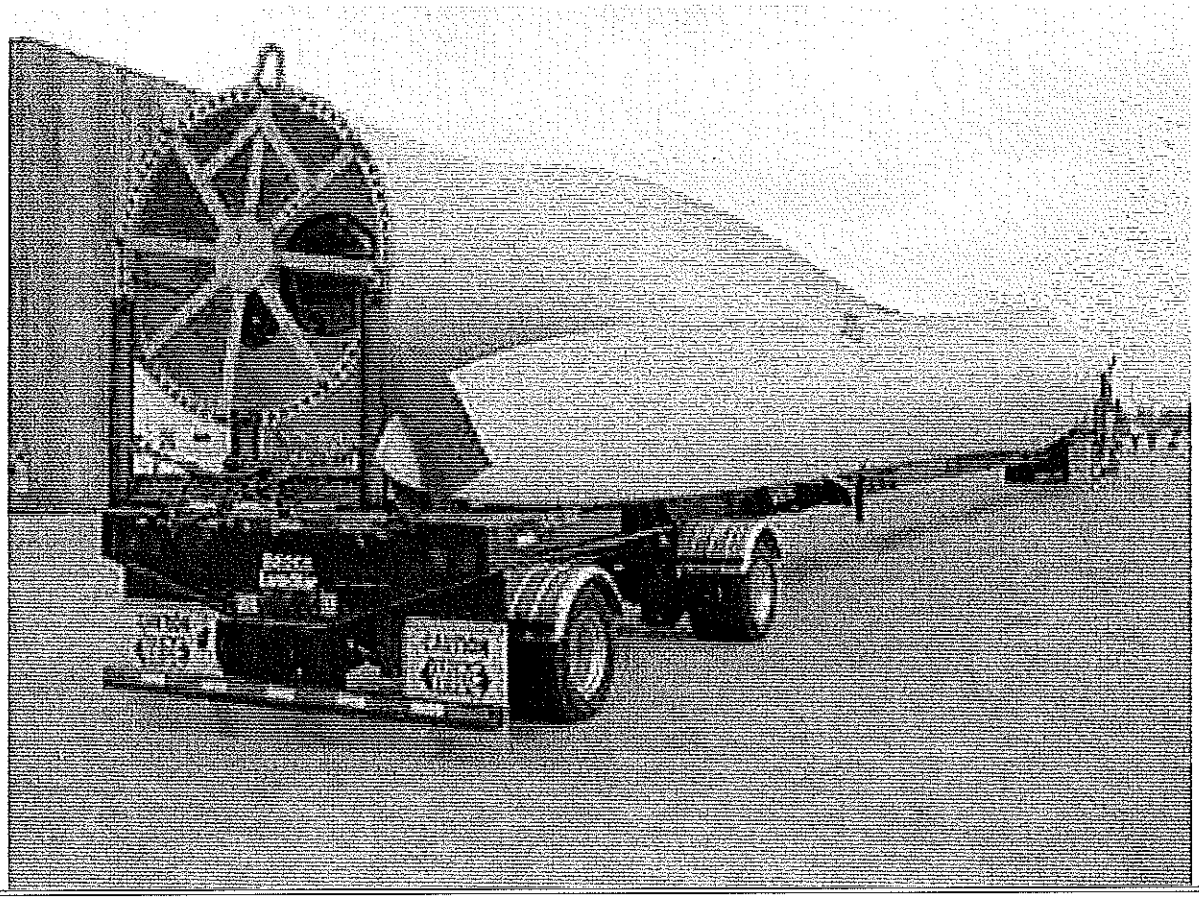


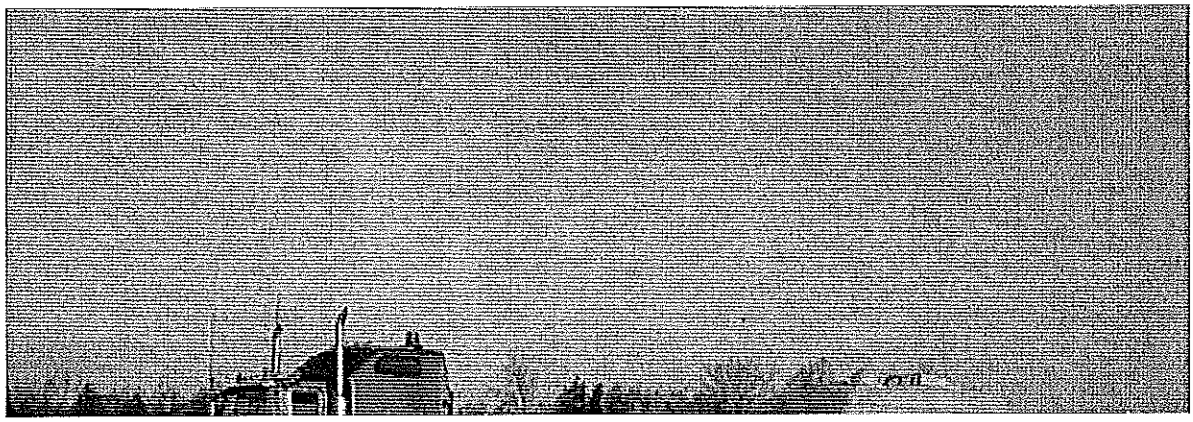
A Schnable trailer with the base tower loaded is the least maneuverable transport arrangement

that will negotiate the site roads. Although Schnable trailers are the most prevalent mode of transportation for tower section, it cannot be guaranteed that these trailers will be used on a specific project.



Other turbine components are shipped using special designed trailers.





Traffic Volume

Traffic:

45 - concrete trucks

7 - trucks hauling wind turbine

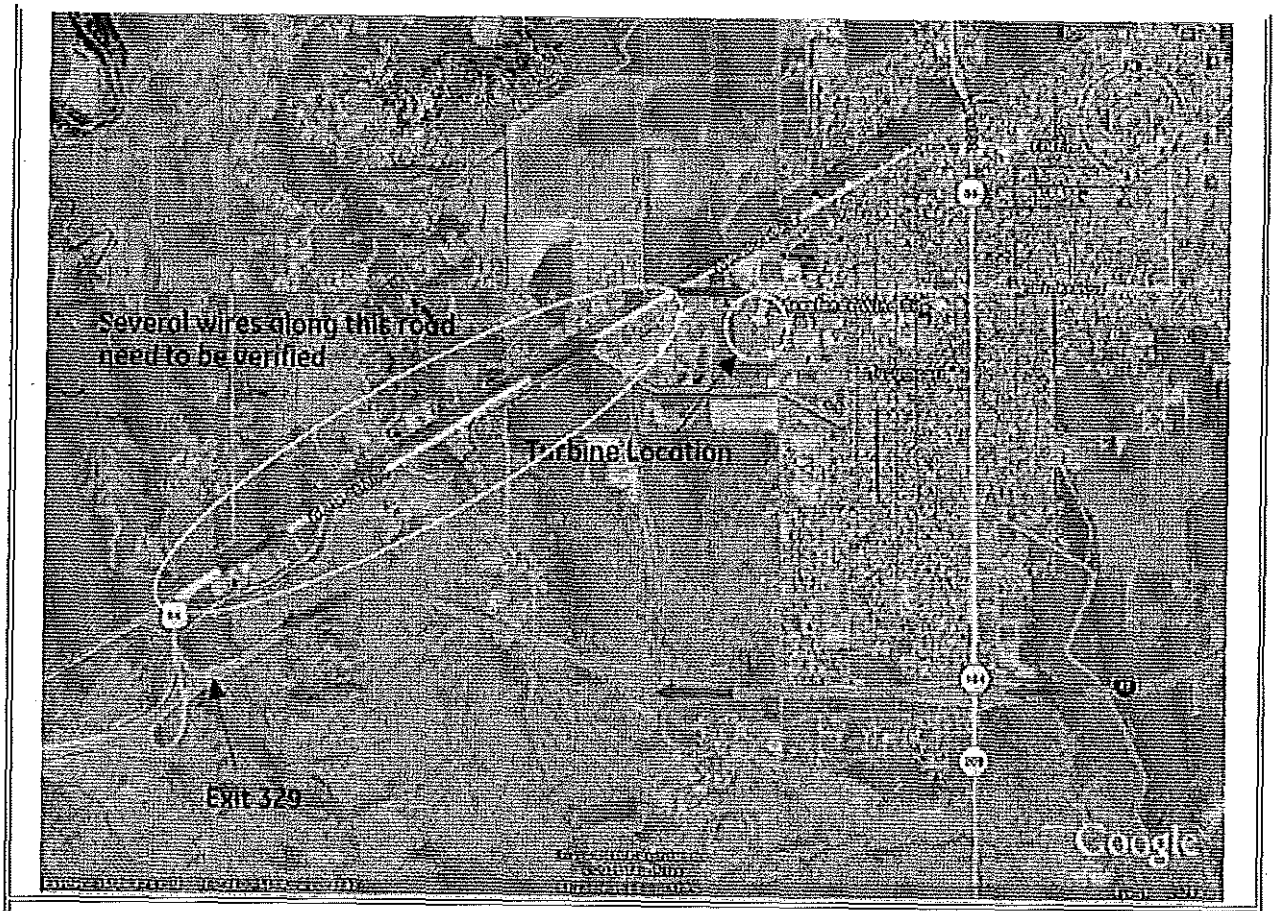
6 - trucks hauling 2 cranes (largest is 400 ton crane)

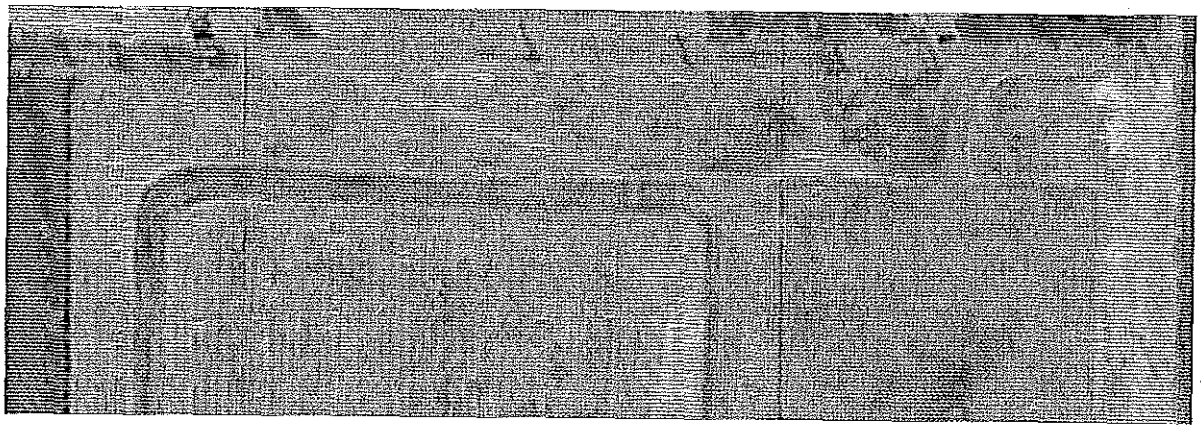
2 - trucks hauling 20 tons of rebar

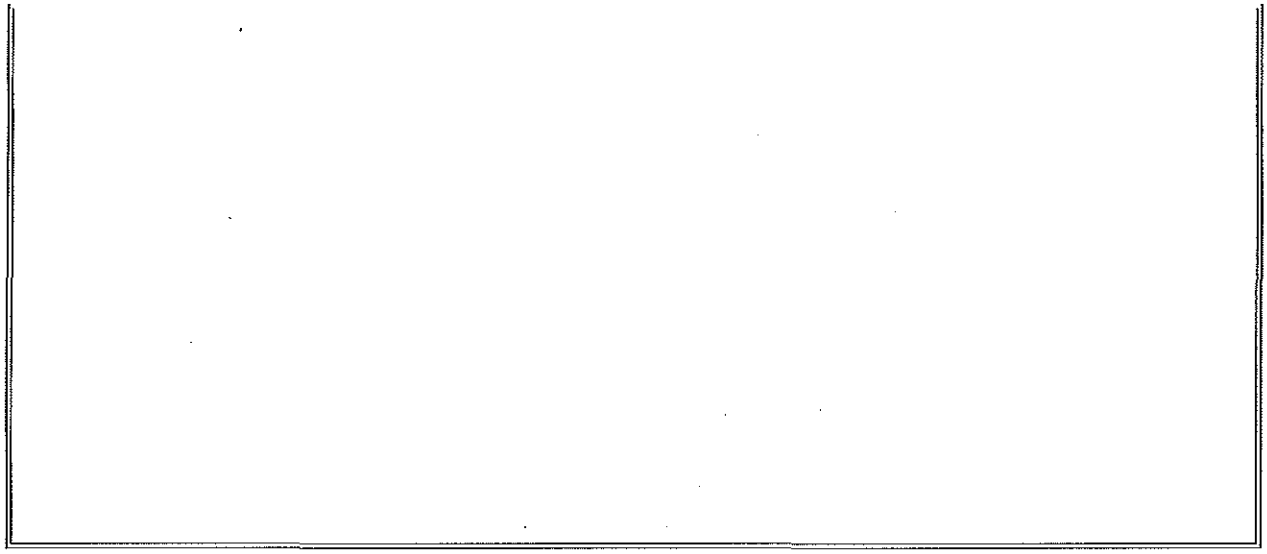
2 – trucks hauling various moving equipments such as fork lifts

Wind Turbine Logistics

- **Observers were asked to remain on the East side of 11th Street**
- **Bleachers were provided on the East side of 11th Street**
- **Cars were not allowed on the West side of 11th Street**
- **Police Escort was required from I-40 Exit 329**
- **Point of origin for tower sections was Trinity, Texas**
  - **Transit time 8 hours**
- **Point of origin for nacelle was Pensacola, Florida**
  - **Transit time 22 hours**
- **Point of origin for blades was Tecis, Port of Import – Houston, Texas**
  - **Transit time 14 hours**


Several wires along this road need to be verified
Turbine Location
Exit 329
Google





Michelle, Kayce (UTC)

From: repar [redacted]
Sent: Friday, August 27, 2010 11:04 AM
To: EFSEC (UTC)
Subject: Comments-Whistling Ridge-cap and flex-Repar-5
Attachments: Comments_DEIS_BPA_capacity and flexibility_27Aug2010.doc

Importance: High

Dear EFSEC,
Attached, please find my 5th memo, on BPA capacity and flexibility, for the Whistling Ridge wind farm proposal. Thank you.

Mary J. Repar
[redacted]

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27 August 2010

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Re: Comments on the inadequacy of Whistling Ridge DEIS in regard to the integration of wind power into the power grid; backup sources for wind when there isn't any; wind powers effects on the energy grid, etc.

Dear EFSEC and BPA,

I would like to further address the issue of wind power generation in the Pacific NW and the fact that "wind generation needs back-up, flexible sources to handle unexpected changed in its output." I have made comments in the memo entitled Comments_DEIS_Chap. 3_Environment_Impacts_Mitigation_27Aug2010, but in this document I would like to go further in depth about my concerns that were not addressed in the Whistling Ridge DEIS, concerns that I feel BPA should have addressed in the DEIS and they did not. The document that helped to crystallize my concerns about the lack of information on wind power integration and the integration of wind power into the energy grid, is the Sixth Power Plan done by the NW Energy Council, and the document is located at http://www.nwcouncil.org/energy/powerplan/6/final/SixthPowerPlan_Overview.pdf.

My comments are ***bolded and italicized, located after sections upon which I wish to comment.*** Most of this information was not included in the DEIS and it should have been part and parcel of the discussion. Its lack of inclusion is a fatal flaw in the DEIS and should be addressed by BPA, SDS, and EFSEC. I have not included the entire document. The document is in quotation marks:

"As a result, planners must now consider potential resources in terms of their **energy, capacity, and flexibility contributions. The rapid growth of wind generation (which has little capacity value and increases the need for flexibility reserves) means that**

meeting growing peak load and flexibility reserves will require adding these capabilities to the power system. Changes can be made to the operation of the power and transmission system that will reduce flexibility reserve needs. These operational changes are expected to cost less than adding peaking generation, demand response, or flexibility storage, and they can be implemented more quickly. **Wind generation needs back-up, flexible resources to handle unexpected changes in its output.**

Comment: Wind power has "little capacity value and increases the need for flexibility reserves" which basically means that wind power needs backup sources, which means coal-power, gas plants, hydro power, or some other sources. Sources which probably contribute more CO2 to the environment. The DEIS does not address the issue of the unreliability of wind, the lack of storage capacity in wind power, and the need for backups to the power system to balance or leaven the production of wind energy. Why isn't this information in BPA's portion of the DEIS? Oh, I forgot. BPA didn't contribute very much pertinent energy production and infrastructure information to the DEIS so that's why we don't have all the information needed to make a thoughtful and studied decision about the feasibility or desirability of this wind farm proposal! How much flexibility and capacity will have to be added to BPA's energy production in order to balance wind power?

While the problems appear daunting, particularly in integrating new wind generation with a more constrained hydrosystem, there are solutions. The first step is to change system operating procedures and business practices to more fully utilize the inherent flexibility of the existing system. The Council believes these changes will be significantly cheaper to achieve, and can be implemented sooner than adding additional generating capacity solely to provide flexibility. It will also set the stage for determining how much flexibility will ultimately be needed from new generation.

Actions for these operating and business practice changes include: **establishing metrics for measuring system flexibility; developing methods to quantify the flexibility of the region's existing resources; improving forecasting of the region's future demand for flexible capacity; improving wind forecasting and scheduling; transitioning from the current whole-hour scheduling framework to an intra-hour scheduling framework; and increasing the availability and use of dynamic scheduling. Fully implementing these improvements may also require physical upgrades to transmission, communication, and control facilities, though the cost of these upgrades is expected to be relatively small compared to the cost of adding new flexible capacity.**

Comment: What are the metrics for measuring system flexibility? What are the methods to be used to quantify the flexibility of the region's existing resources? How will BPA improve forecasting of the region's future demand for flexible capacity? How will BPA and the wind industry improve wind forecasting and scheduling? How will BPA transition from current whole-hour scheduling to intra-hour scheduling? How will BPA increase the availability and use of dynamic scheduling? What is dynamic scheduling? Will it cost the rate payers more money to implement all of these

efforts to integrate unreliable wind power into the existing power grid? If physical upgrades to transmission, communication, and control facilities will be required, what are the costs going to be? To the regional rate payers? Tax payers? What are the cumulative regional impacts of the existing transmission lines? What would be the future cumulative impacts of new transmission lines? Where would these new transmission lines be located? How big would they be? How would they affect wildlife and wildlife habitats? Habitat fragmentation? These are only some of the questions that BPA should have addressed in the Whistling Ridge DEIS. They did not and this is a fatal flaw in the DEIS.

The Northwest Resource Adequacy Forum, jointly chaired by the Council and Bonneville, with participation by other regional utilities and interest groups, has devoted considerable effort over the past several years to reaching an understanding of the hydrosystem's sustainable capacity value. The work of the forum is described more fully in Chapter 14.

Comment: So Bonneville, which is BPA, sits on the Northwest Resource Adequacy Forum, and they have "devoted considerable effort...to reaching an understanding of the hydrosystem's sustainable capacity value." Care to share with the rest of us, BPA? What is the sustainable capacity value of our hydrosystem? How much sustainable capacity does BPA actually have? If there is too much capacity, from all these regional wind farms, does it become unsustainable? What happens to unsustainable capacity? Does too much capacity affect the BPA infrastructure? How is the infrastructure affected if capacity reaches unsustainable levels? Are there inherent dangers in unsustainable capacity? Dangers to the BPA infrastructure? Dangers to the general public and energy users? These questions, and many more relevant ones, should be addressed in the DEIS, by BPA. They are not. A fatal flaw.

Wind generation capacity also raises capacity issues because it is not controllable. Wind generation is variable; operators can reduce generation when the wind is blowing, but they cannot make it produce more, even if the rated wind capacity is much higher. **Furthermore, the output level is relatively unpredictable and, in the Northwest, is unlikely to be available at times of extreme peak load--for example when load is high because of a winter cold spell or a summer hot spell.**

Comment: If wind generation is not controllable, why is the Federal government subsidizing the wind industry? Why aren't we using our monies to work on conservation and raising efficiencies in the ways that we now use energy? If "the output level is relatively unpredictable and, in the Northwest, is unlikely to be available at times of extreme peak load...a winter cold spell or a summer hot spell" why are all these wind farms being built? Probably because they are highly subsidized by taxpayer money, and the producers get tax credits which they use for God knows what, but they are tax credits. Why are we spending so much money and effort on wind if it won't be available to cool us in summer and warm us in winter because wind is uncontrollable, variable, and unpredictable? These questions should be answered in the DEIS. There should be a rationale, by the proponents, as to why they are proponing for this wind

farm, and all the others in WA and OR and other areas. If wind is variable, then how is BPA going to balance the power generated by wind turbines? How is BPA going to maintain its flexibility and consistency of power production if wind is so variable, unpredictable, and uncontrollable? More questions that should be answered in the DEIS.

The amount of installed capacity expected to be available during peak-load hours is often called a generator's "peak contribution" or "reliable capacity." There is a body of technical literature on methods for the calculation of this value. **Analysis done by Bonneville and the Resource Adequacy Forum suggests that, for the wind area at the east end of the Columbia River Gorge, where much of the region's current wind generation is located, there is an inverse relationship between wind generation and extreme temperatures, both in winter and summer.** This is likely due to widespread high pressure zones covering the region's load centers (the biggest ones being west of the Cascades) and the area of wind generation east of the Cascades during periods of extreme low and extreme high temperatures. Figure 12-1 illustrates **the loss of wind generation during a recent winter period.** While efforts to better define the reliable capacity of wind generators are ongoing, both in the Northwest and in NERC and WECC, **the Resource Adequacy Forum has adopted a provisional peak contribution for wind of 5 percent of installed capacity.** This work will need to address the impact of future wind development in other areas, such as Montana and Wyoming, that may have different weather patterns and could improve the overall capacity contribution of wind.

Comment: So, analysis done by Bonneville and the Resource Adequacy Forum "...suggests that, for the wind area at the east end of the Columbia Gorge, where much of the region's current wind generation is located [as is the Whistling Ridge proposal] there is an inverse relationship between wind generation and extreme temperatures, both in winter and summer." Well, gosh darn, does this mean that when it's really hot, like in the summer time, there is less wind and therefore there is less wind power generation and therefore less energy is available for cooling? Summer time also means less water in the Columbia River and that means less water available to BPA for power generation. And, in the winter time, when it is really cold there is less wind power generation available to heat our homes and businesses? Why aren't these issues and concerns addressed in the DEIS? When we most need energy is when it is not being produced. Hmm, that does not make sense. Common sense, that is. Why are we even subsidizing more wind farms? Further, "the Resource Adequacy Forum has adopted a provisional peak contribution for wind of 5 percent of installed capacity." Does this mean that all the wind farms that litter the landscape only produce, and WILL ONLY PRODUCE and are ONLY CAPABLE OF PRODUCING, "5 percent of installed capacity"? This is a stunning statement. Whole ecosystems are being destroyed by wind turbines, pads, and impermeable maintenance roads that criss-cross our environments and ecosystems, and these wind farms will ONLY PRODUCE "5 percent of installed capacity"?!? Well, I would be speechless if this didn't make me so angry. This stunning analysis MUST be part of the DEIS and must be addressed in the future. A deep fatal flaw in this very inadequate, and getting more inadequate by the minute, DEIS.

Adding Flexible Capacity

System planners and operators are looking at resources that can be used to meet peak-hour demand and respond to **variations in wind output.** These flexible-duty resources do not necessarily need to generate large amounts of energy over the course of the year. **Resources typically placed in this category include: rapid-response natural gas-fired generators; storage resources such as pumped-storage hydro plants; and utility demand response programs.** ***In the near term, natural gas-fired turbines and reciprocating engines*** appear to be good options for meeting the increased demand for flexibility. To offset unexpected changes in wind output, these resources need rapid-start capability and efficient operation at output levels less than full capacity.

Comment: So, now we have come to the crux of the wind generation matter—wind is not a reliable source of energy and needs backup from "natural gas-fired generators; storage resources such as pumped-storage hydro plants; and utility demand response programs…natural gas-fired turbines and reciprocating engines appear to be good options." What is the carbon footprint of these backup systems? If I recall correctly, pumped-storage hydro plants are really reservoirs at high elevations to which water is pumped uphill, stored, and then released to go downhill and produce power through turbines. What are utility demand response programs? What are the cumulative regional impacts of these backup systems? These questions and issues should be addressed in the DEIS and are not. The DEIS is supposed to be a document that contains information so that we can all make reasoned, objective decisions about the proposed project and its regional cumulative effects. This DEIS is by no means that type of document.

The LM6000 Sprint (50-megawatt) and LMS100 (100-megawatt) aeroderivative turbines are two good candidates for flexibility augmentation. Starting cold, both turbines can be ramped to their maximum output within 10 minutes. These aeroderivative turbines are more efficient than comparable frame turbines, and therefore more cost-effective to operate at partial output levels. The LM6000 Sprint is a commercially mature technology with more than 200 units in operation. The first LMS100 unit went into commercial operation at the Groton Generating Station in South Dakota in 2006.

Comment: These "two good candidates for flexibility augmentation" sound good. But what is their carbon footprint? How do they affect the environment? Do they cause air pollution? Could we achieve better energy-saving results through conservation and increasing our efficiencies capabilities?

Gas-fired reciprocating engines are also a good flexibility option. The Plains End Generating Facility in Colorado is a 20-unit plant that has an output range of anywhere from 3 megawatts to 113 megawatts. The engines have a 10-minute quick start capability and can ramp up and down in response to an AGC signal. All of the above options can be constructed with short lead times, and therefore are good near-term flexibility options. A

more complete description of these natural gas-fired generating technologies is provided in Chapter 6.

Comment: Gas is a hydrocarbon. Hydrocarbon use produces greenhouse gasses. Greenhouse gasses are known to cause global climate changes. Using "gas-fired reciprocating engines" will produce greenhouse gasses. What is the carbon footprint of these gas-fired reciprocating engines? How many of them would be needed to balance out the unpredictability of wind power generation? What is their cumulative impact on air and water quality?

Pumped-storage hydro is a good mid-term option for meeting increased demand for flexibility since it can quickly change its operating level. These hydro plants operate in either a pumping mode or a generating mode. Traditional operation of pumped-storage hydro is based on the price of electric power. When the price of electric power is low, water is pumped from a source to a storage reservoir located at a higher elevation. When the price of electric power is high, the stored water is released and passed through a turbine to generate power. **As more wind power is added to the system, pumped-storage operation is likely to respond to the price of regulation and load-following services**. For example, operators of pumped-storage plants can commit in advance to increase pumping when there are unexpected increases in wind output. Plants with variable-speed pumps are likely to be more responsive in these circumstances. Likewise, operators can also commit to increase generation when wind power output unexpectedly drops. Furthermore, operating the plant in this manner is not likely to result in dramatic operating cost increases or reduced revenue. However, with a 13-year construction lead time, and high capital cost, risk is high. Other options may capture a large share of the ancillary services market before a new pumped-storage plant can be brought on-line.

Comment: Well, I don't want to burst anybody's bubble of happiness, but where are you all planning on getting the water that's necessary to produce pumped-storage hydro power? There is no chance on this green Earth that any water is coming out of the Columbia River. There are already too many users and abusers feasting on the Columbia. This is probably a non-starter idea. But, it should have been addressed in the DEIS. BPA's failure to do so is irresponsible.

The potential use of hot water heaters, plug-in hybrid vehicles, and other demand response options to provide regulation and load-following services is described in Chapter 5, Appendix H, and Appendix K."

Comment: The DEIS should have included a section on other ways and means of conserving and producing energy, as a contrast to wind power generation. BPA should more fully explain how our Pacific NW energy demands can be met by means other than wind power. They should also explain why this proposed wind farm is needed, or if it really is needed, in the energy grid.

Source document:
http://www.nwcouncil.org/energy/powerplan/6/final/SixthPowerPlan_Overview.pdf

/e-signature/**Mary J. Repar**
27August 2010

Michelle, Kayce (UTC)

From: Stephen Amy [redacted]
Sent: Friday, August 27, 2010 11:19 AM
To: EFSEC (UTC)
Subject: A comment on the proposed Whistling Ridge energy project

I am writing to submit a comment on the proposed Whistling Ridge energy project.

I believe wind power will be an essential and large part of the future mix of energy sources, and generally do support wind projects, but I also think that each site that has been proposed for a project must be evaluated according to local criteria.

I've heard that the Whistling Ridge project site is located in very important northern spotted owl habitat; and, considering the continuing decline of the spotted owls, this argues strongly against citing the project.

Also, a significant and large area of the Columbia Gorge National Scenic Area will have sightlines negatively affected if the project goes ahead.

Therefore, I ask that the State of Washington deny the proposal.

Stephen Amy
[redacted]

Michelle, Kayce (UTC)

From: repar [redacted]
Sent: Friday, August 27, 2010 12:02 PM
To: EFSEC (UTC)
Subject: Comments-Whistling Ridge-Land and Soils-Repar-6
Attachments: Comments_DEIS_Land_Soil_27Aug2010.doc

Importance: High

Dear EFSEC,
Attached, please find what I think is my last comment memo on the Whistling Ridge wind farm proposal! I wish you all Good Luck! in evaluating all the comments that you have and will be receiving. Thank you very much for all that you do to keep us and our environments safe./Mary

Mary J. Repar

[redacted]

Mary J. Repar
[redacted]

27 August 2010

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Re: Regarding the inadequacy of analysis of impacts to land and soils from the proposed Whistling Ridge (WR) wind farm project in Skamania County, wind turbine size and weight, and geologic mass wasting, etc.

The Draft Environmental Impact Statement (DEIS) shows that the soils on the proposed Whistling Ridge wind farm site, 1152 acres located in Sections 5, 6, 7, 8, and 18 of T3N, R10E, and on Section 13 of T3N, R9E, are unstable and should not be disturbed through the building of this project, a project that would involve thousands of tons of ground movement and disturbance, with the addition of thousands of tons of concrete and wind turbines on top of this unstable soil. In reading the DEIS, it also came to my attention that the soil descriptions used by the proponent were not as complete and not as informative as the soil descriptions in the Soil Survey of Skamania County, Washington, done by the U.S. Department of Agriculture, Soil Conservation Service, dated October 1990. It is as if certain, very pertinent information was left out of the DEIS. I have attempted to put this information in this memo.

On p. 3-1, 3.1.1.2, Regional Geology, the DEIS states, *"Regional geologic maps indicate the presence of **Quaternary-age mass wasting landslide deposits located north of Underwood Mountain*** [my emphasis] *(Figure 3.1-2). These deposits are mapped as a large landslide, estimated to be approximately 1/3 square mile in area and almost a mile long. However, based on field work conducted in 2007, there is no obvious evidence to suggest the presence of a landslide as mapped on the 1:100,000 scale geologic map. If landslide deposits are present, they have been exposed long enough that most or all of the geomorphic evidence has been removed by erosion."* (p. 3-3) This is not an acceptable analysis. See Reference A, at the end of this document for more information on mass wasting but, briefly, "Mass wasting, the downhill movement of soil and rock under the influence of gravity, encompasses a variety of physical processes by which mountain ranges are eroded. These processes include:

- Creep - slow, nearly continuous downslope movement that is induced by either freeze/thaw cycles or wet/dry cycles.

- Slides - sudden downhill movement of masses of rock or sediment.
- Debris flows- dense, fluid mixtures of rock, sand, mud, and water

There are other categories of mass wasting processes such as slumps, rock flows, rockfalls, block glides (etc...) that can be grouped together or separately with creep, slides, and debris flows depending on which characteristics that share in common. **All of these processes share one thing in common, namely, that they are caused by the incessant downward pull of gravity, which moves loose slope material downwards.**" [my emphasis]

"*These deposits are mapped as a large landslide, estimated to be approximately 1/3 square mile in area and almost a mile long. However, based on field work conducted in 2007, there is no obvious evidence to suggest the presence of a landslide as mapped on the 1:100,000 scale geologic map. If landslide deposits are present, they have been exposed long enough that most or all of the geomorphic evidence has been removed by erosion.*" "No obvious evidence...If landslide deposits are present...they have been exposed long enough that most or all of the geomorphic evidence has been removed..."!!! These are astonishing statements, made without any type of real, geological evidence, i.e., a sub-surface hazard survey, drill holes, etc., in the DEIS. **An in-depth geological study should be made of the entire proposed site—before the project is approved, not after.** Geomorphic evidence of landslides does not just disappear—a near-surface hazard survey is a tool to find out just what is going on under the exposed, eroded surface. This has not, apparently, been done for this DEIS, and it should be. This proposed wind farm would be situated on top of a unstable ridge line, subject to mass wasting[1].

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[1] References:

A. **http://www.geology.wisc.edu/courses/g112/mass_wasting.html**

I. Physical and chemical weathering

Weathering is the destructive process by which rocks and minerals are broken down through exposure to atmospheric agents such as air, wind, water, and ice. Weathering processes can be grouped into two broad categories, consisting of

Physical weathering - the fragmentation of a larger rock into smaller pieces by mechanical processes. These processes include

- abrasion (erosion of a rock due to the impact of grains carried by wind, water, or ice)
- fragmentation during downslope movement via rockfalls, landslides, etc.
- frost wedging via the freeze/thaw cycle.
- thermal expansion and contraction via heating and cooling

Chemical weathering - breakdown of rock or mineral through reactions between rocks/minerals and atmospheric constituents such as water, oxygen, and carbon dioxide. The most common reactions include

- Solution - molecules and elements in rocks and minerals dissolve directly into water
- Oxidation and hydration - reaction between oxygen, water, and iron-bearing minerals that helps to break down minerals
- Hydrolysis - a complex weathering reaction that forms clays, the primary constituent of soils.

Ice and Physical weathering

The two principal mechanisms by which ice causes rock weathering (and erosion) are via **frost wedging** and **glaciation.**

- **Frost wedging** is the process by which water that has trickled into cracks in rocks (ranging from microscopic to large cracks) alternates between freezing and thawing. Frozen water (ice) occupies 10% greater volume than does its liquid equivalent. Water that freezes thus pushes outward on the sides of a fracture with tremendous force. This eventually breaks rocks apart.

- **Glaciation** - Glaciers are large masses of ice that rest on or adjacent to a land surface and typically move. Glacial ice forms when snow accumulates in deep enough piles (tens of meters) to cause individual snow flakes to recrystallize and form ice. Glaciers are extremely effective weathering and erosional agents. A glacier is capable of carving deep valleys into bedrock as well as scraping all loose material (soil and weathered bedrock) off from a landscape. In alpine regions, mountain glaciers are important elements in both weathering and erosion; most alpine mountain peaks have been shaped (or carved) by small mountain glaciers.

II. Mass wasting and gravity

Mass wasting, the downhill movement of soil and rock under the influence of gravity, encompasses a variety of physical processes by which mountain ranges are eroded. These processes include

- Creep - slow, nearly continuous downslope movement that is induced by either freeze/thaw cycles or wet/dry cycles.
- Slides - sudden downhill movement of masses of rock or sediment.
- Debris flows- dense, fluid mixtures of rock, sand, mud, and water

There are other categories of mass wasting processes such as slumps, rock flows, rockfalls, block glides (etc...) that can be grouped together or separately with creep, slides, and debris flows depending on which characteristics that share in common. All of these processes share one thing in common, namely, that they are caused by the incessant downward pull of **gravity**, which moves loose slope material downwards.

Gravity-driven mass wasting processes are a subset of larger set of processes that transport weathered and unweathered earth materials. These processes are classified as **erosional processes**, which include all processes that remove and transport weathered or unweathered soil and rocks. Erosional processes include

- Wind
- Running water
- Waves
- Glaciers
- Water flowing underground
- Gravity-driven processes (mass-wasting)

Mass-wasting processes

Mass-wasting processes such as creep, landslides, and debris flows are distinguished from each other in part by whether they occur rapidly or slowly. Landslides are capable of transporting massive amounts of rock and soil downslope for miles in very short periods (e.g. minutes). Creep can also transport much material, but at rates of only millimeters per year. Both are important erosional processes. **Rapid mass**

p. 3-7, 3.1.1.4 Geologic Hazards

Earthquakes

Earthquakes are the result of sudden releases of built-up stress within the tectonic plates that make up the earth's surface. Stress accumulates where movement between plates or on faults produces friction. No faults are mapped within the footprint of the proposed project area. However, faults are mapped approximately 1.5 miles to the southwest and northeast. (Pezzopane 1993 and Geomatrix 1995) Many of these faults are inferred, and shown as dotted lines buried by younger surficial deposits. While the activity of the area faults is unknown, a review of aerial photography showed no indication of recent movement along the trace of the inferred faults.

There have been no surface-rupture earthquakes on any fault within northwestern Oregon or southwestern Washington in historic times, and investigations of the regional faults have been limited.

According to the updated National Seismic Hazard Maps published by the US Geological Survey (USGS) in 2008 (Petersen et al. 2008 and USGS 2009), the peak ground acceleration estimated for the area of the Whistling Ridge site is 0.18g for a 475-year return period earthquake (i.e., ground motion with a 10 percent chance of being exceeded in 50 years) and 0.40g for a 2,475year return period earthquake (i.e., ground motion with a 2 percent chance of being exceeded in 50 years).

Large earthquakes at more distant faults could cause prolonged ground movement at the project site. Information on historic large earthquakes can be found in the Application for Site Certification Section 3.1 (Appendix A).

Landslides

The landslide evaluation conducted for the Application for Site Certification concluded that the project could be constructed and operated without danger to human life or the surrounding environment due to landslide hazards.

Although none of the proposed turbines are located within Class II LHAs, several of the towers along the western side of the project site (Tower Lines A and B) are located along ridgelines with descending slopes that are locally greater than 35 degrees (70 percent). Based on studies conducted for the Application for Site Certification, it appears that the primary concern for towers located adjacent to the Class II LHAs is the potential for headward erosion of the steep drainages by debris or earth flow processes. Erosion rates of these drainages are unknown, but no obvious recent mass wasting features were observed in the aerial photos or during the site

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wasting events such as massive landslides or debris flows are typically triggered by events that destabilize material that resides on steep slopes. Such events include earthquakes, volcanic eruptions, rain or melting snow, and **poorly planned landscape alterations by humans (e.g. road cuts or developments that require the removal of material at the bases of slopes).** [my emphasis]

reconnaissance. **Further subsurface investigation in support of final tower foundation design would help determine if there are weak rock or soil layers that could contribute to more deep-seated failure of the ridges and provide information on the quality of the rock underlying the ridgelines.**

The soils on the proposed wind farm site can be found in the U.S. Department of Agriculture's Soil Conservation Service's Soil Survey of Skamania County Area, Washington, October 1990. The DEIS descriptions are in ITALICS; other descriptions and information for each soil type is from the Soil Survey book (I have copied freely!). The soil types are numbered, as follows:

#66, McElroy Series (included in this unit are small areas of Chemawa, Timberhead, Underwood, and Undusk soils) gravelly loam, 5 – 15 percent slopes. "*The McElroy series consists of very deep soils (up to 5 feet) formed in colluvium and residuum from basalt with a mantle of volcanic ash that influences soils in the top 9 to 13 inches. The soils exist on the footslopes and backslopes of mountains on slopes from 5 to 90 percent at elevations from 400 to 2,600 feet in eastern Skamania County and western Klickitat County. McElroy Soils are well drained with medium to rapid runoff and moderate permeability. The series was established in 1981 following the introduction of volcanic ash from the eruption of Mt. St. Helens.*" The average annual precipitation is 55 inches, average air temperature is about 46 degrees Fahrenheit (F), and the average frost-free period is 105 – 125 days. Hazard of water erosion is moderate. This unit is used for woodland, hayland, pastureland, homesites, wildlife habitat, and recreation. Douglas fir, ponderosa pine, and grand fir are the main woodland species. Oregon white oak and bigleaf maple are trees of limited extent in this soil unit. Main limitation for harvesting timber is seasonal soil wetness...wheeled and tracked equipment produces ruts, compacts the soil, and damages the roots of trees...Unsurfaced roads and skid trails are soft and slippery and can be impassable when wet...Occasional snowpack hinders the use of equipment and limits access in winter. This unit is well suited to use as hayland and pastureland. The main limitation of this unit for use as homesites is the steepness of slop. Erosion is a hazard in the steeper areas. Capability sub-class IIIe.

#67, McElroy Series (included in this unit are small areas of Chemawa, Timberhead, Underwood, and Undusk soils), gravelly loam, 15 to 30 percent slopes. It formed in colluvium derived dominantly from basalt with a mantle of volcanic ash. The native vegetation is mixed conifers and shrubs. Elevation is from 400 to 2300 feet. [Note: the DEIS states that the McElroy Series is from 400 to 2600.] The average annual precipitation is 55 inches, average air temperature is about 46 degrees F, and the average frost-free period is 105 – 125 days. Runoff is medium and the hazard of water erosion is moderate. Most areas of this unit are used for woodland, pastureland, hayland, wildlife habitat, recreation, and **watershed.** A few areas are used as homesites. Douglas fir, ponderosa pine, and grand fir are the main woodland species on this unit. Limited extent trees are Oregon white oak and bigleaf maple. Main limitation for harvesting timber is seasonal soil wetness...wheeled and tracked equipment produces ruts, compacts the soil, and damages the roots of trees...Unsurfaced roads and skid trails are soft and slippery and can be impassable when wet... Occasional snowpack hinders the use of equipment and limits access in winter. This unit is well suited to use as hayland and pastureland. The main limitations are steepness of slope and the hazard of erosion. Main limitation for use as homesites

is the steepness of slope and erosion. **Restricted permeability and steepness of slope increase the possibility of failure of septic tank absorption fields.** Access roads should be designed to provide adequate cut-slope grade, and drains are needed to control surface runoff and keep soil losses to a minimum. Capability subclass IVe.

Watersheds are very important and should be protected from industrial wind farms.

#68, McElroy Series (included in this unit are small areas of Chemawa, Timberhead, Underwood, and Undusk soils), gravelly loam, 30 – 65 percent slopes. Very deep, well-drained soil is on the back slopes of mountains. It formed in colluvium derived dominantly from basalt with a mantle of volcanic ash. The native vegetation is mainly mixed conifers and shrubs. Elevation is 400 to 2300 feet. The average annual precipitation is 55 inches, average air temperature is about 46 degrees F, and the average frost-free period is 105 – 125 days. **Runoff is rapid, and the hazard of water erosion is severe.** This unit is used for woodland, wildlife habitat, recreation, and **watershed.** Douglas fir, ponderosa pine, and grand fir are the main woodland species on this unit. Oregon white oak and bigleaf maple are limited extent trees on the unit. Steep slopes restrict the use of wheeled and tracked equipment in skidding. Use of wheeled and tracked equipment when the soil is moist produces ruts, compacts the soil, and damages the roots of trees. Logging roads require suitable surfacing for year-round use. Occasional snowpack hinders the use of equipment and limits access in winter. Steep yarding paths, skid trails, and firebreaks are subject to rilling and gullying unless plant cover is maintained or adequate water bars are provided. Capability sub-class VIe.

#135, Timberhead Series, gravelly loam, 5 to 30 percent slopes. *The Timberhead series consists of very deep soils (up to 5 feet) formed in residuum and colluvium from basalt mixed with volcanic ash. The* ***soils exist on mountain ridges between 5 and 30 percent at elevations from 2,000 to 3,600 feet in Skamania County and western Klickitat County.*** *Timberhead Series soils are well drained with medium to rapid runoff and moderately high to high permeability.* [Note: The Soil Survey book states that this unit is at 2000 to 2800 feet elevation.] Average annual precipitation is about 60 inches, the average annual air temp is 44 degrees F, and the average frost-free period is 95 to 115 days. Included in this unit are small areas of McElroy, Underwood, and Undusk soils. Runoff is medium, and the hazard of water erosion is moderate. Most areas of this unit are used for woodland, recreation, wildlife habitat, and watershed. A few areas are used as grazeable woodland. Douglas fir, grand fir, and western hemlock are the main woodland species on this unit. [Would there be bats here, just like at the canopy crane, because of the hemlock?] Among the trees of limited extent is western redcedar. Areas on ridge tops that are subject to **strong, persistent winds** [how strong and how persistent?] are less productive than other areas of this unit. The main limitation of harvesting timber is seasonal soil wetness. Use of wheeled and tracked equipment when the soil is moist produces ruts, compacts the soil, and damages the roots of trees. Unsurfaced roads and skid trails are soft and slippery and can be impassable when wet. Occasional snowpack hinder the use of equipment and limits access in winter. This map unit is in capability subclass IVe.

#136, Timberhead Series, gravelly loam, 30 to 65 percent slopes. *The Timberhead series consists of very deep soils (up to 5 feet) formed in residuum and colluvium from basalt mixed*

with volcanic ash. The soils exist on mountain ridges between 5 and 30 percent at elevations from 2,000 to 3,600 feet in Skamania County and western Klickitat County. Timberhead Series soils are well drained with medium to rapid runoff and moderately high to high permeability. [Note: the Soil Survey book states that this soil unit is in the 2000 to 2800 foot elevation range.] Average annual precipitation is about 60 inches, the average annual air temp is 44 degrees F, and the average frost-free period is 95 to 115 days. Included in this unit are small areas of McElroy, Underwood, and Undusk soils. Also included are small areas of Rock outcrop and moderately deep soils over basalt. Available water capacity is moderately high. **The hazard of water erosion is severe.** Most areas of this unit are used for woodland, recreation, wildlife habitat, and **watershed.** Douglas fir, grand fir, and western hemlock are the main woodland species on this unit. Western redcedar is a tree of limited extent. The main limitation for harvesting timber is steepness of slope, which restricts the use of wheeled and tracked equipment. Use of wheeled and tracked equipment when the soil is moist produces ruts, compacts the soil, and damages the roots of trees. Occasional snowpack hinders the use of equipment and limits access in winter. Steep yarding paths, skid trails, and firebreaks, are subject to rilling and gullying unless plant cover is maintained or adequate water bars are provided. Capability subclass VIIe.

#144, Underwood loam, 2 to 15 percent slopes. *The Underwood series consists of very deep soils (5 feet or more) formed in residuum and colluvium from basalt and andesite with a thin mantle of volcanic ash. The soils exist on benches, backslopes, and footslopes of mountains with slopes between 2 and 50 percent at elevations between 500 and 2,700 feet in southeast Skamania County and west Klickitat County. Underwood Series soils are well drained with slow to medium runoff and moderately high permeability.* [Note: The Soil Survey book states that this unit is at 500 to 2000 feet elevation.] The native vegetation is mainly mixed conifers and shrubs. The average annual precipitation is about 50 inches, the average annual air temperature is about 46 degrees F, and the average frost-free period is 100 to 150 days. Included in this unit are small areas of Chemawa and McElroy soils on terraces and foot slopes and Timberhead and Undusk soils on ridgetops. Also included are small areas of soils that are more than 35 percent clay. Included areas make up about 10 percent of the total acreage. Permeability of this Underwood soil is moderately slow. **Available water capacity is high. Runoff is medium, and the hazard of water erosion is moderate.** This unit is used for woodland, hayland, pastureland, orchards, homesites, wildlife habitat, and recreation. Douglas fir, ponderosa pine, and grand fir are the main woodland species on this unit. Among the trees of limited extent are Oregon white oak and bigleaf maple. The main limitation for harvesting timber is seasonal soil wetness. **Use of wheeled and tracked equipment when the soil is moist produces ruts, compacts the soil, and damages the roots of trees.** Unsurfaced roads and skid trails are soft and can be impassable when wet. Logging roads require suitable surfacing for year-round use. **Occasional snowpack hinders the use of equipment and limits access in winter.** The main limitations of this unit for use as homesites are steepness of slope, shrink-swell potential, moderately slow permeability, **and the hazard of erosion in the steeper areas**. Use of sandy backfill for the trench and long absorption lines helps to compensate for the moderately slow permeability of the soil. **During the rainy season, effluent from onsite sewage disposal systems may seep at points downslope.** If the density of housing is moderate to high, community sewage systems are needed to prevent contamination of water supplies as a result of seepage from onsite disposal systems. The effects of shrinking and swelling can be minimized by using proper engineering designs. **Buildings and roads should be designed to offset**

the limited ability of the soil in this unit to support a load. This map unit is in capability subclass IIIe.

#147, Undusk gravelly loam, 5 to 30 percent slopes. *The Undusk series consists of very deep soils (5 feet or more) formed in residuum and colluvium from basalt and andesite with a thin mantle of volcanic ash. The soils exist on benches, backslopes, and footslopes of mountains with slopes between 5 and 65 percent at elevations between 2,000 and 2,800 feet in southeast Skamania County and west Klickitat County. Undusk Series soils are well drained with slow to medium runoff and moderately high permeability.*
Based on the current test pits and field observations, the site soil is best represented as Soil Site Class D (stiff soils). Rock with varying strength and weathering characteristics was encountered at depths ranging from 3 to 12 feet bgs. The average annual precipitation is about 55 inches, the average annual air temperature is about 44 degrees F, and the average frost-free period is 90 to 120 days. The subsoil to a depth of 60 inches or more is dark brown very gravelly loam and extremely gravelly loam. Included in this unit are small areas of Chemawa, McElroy, Timberhead, and Underwood soils on ridges and back slopes and **St. Martin soils on landslides.** Also included are small areas of soils that are less than 35 percent rock fragments and soils that are shallow to bedrock. Included areas make up about 12 percent of the total acreage. Permeability of this Undusk soil is moderate. **Available water capacity is moderately high. Runoff is medium, and the hazard of water erosion is moderate.** This unit is used for woodland, wildlife habitat, recreation, and **watershed.** Douglas fir, grand fir, and western hemlock are the main woodland species on this unit. Among the trees of limited extent are red alder and western redcedar. **Areas on ridgetops that are subject to strong, persistent winds are less productive than other areas of this unit.** The main limitation for harvesting timber is seasonal soil wetness. Use of wheeled and tracked equipment when the soil is moist produces ruts, compacts the soil, and damages the roots of trees. Unsurfaced roads and skid trails are soft and can be impassable when wet. Logging roads require suitable surfacing for year-round use. **Occasional snowpack hinders the use of equipment and limits access in winter.** Logging activities can readily displace the surface layer. This map unit is in capability subclass IVe.

#177, Undefined Soil Unit located West of wind turbine string C1-C4. ??????

These units sit next to the turbine strings—????

Turbines are heavy, unwieldy machines. In my research, I came across the following information, several articles—one from Wind Watch, one from aweo.org, and one on transporting wind turbines--which provide insight on just how big and weighty wind turbines actually are, and I believe this information is very pertinent to the evaluation of weight effects on the soils located in the proposed area of the Whistling Ridge wind farm:

Article #1

http://www.wind-watch.org/faq-size-p.php

National Wind Watch

FAQ -- Size

How big is a wind turbine?

Industrial wind turbines are a lot bigger than ones you might see in a schoolyard or behind someone's house.

The widely used GE 1.5-megawatt model, for example, consists of **116-ft blades atop a 212-ft tower for a total height of 328 feet.** The blades sweep a vertical airspace of just under an acre.

The 1.8-megawatt Vestas V90 from Denmark is also common. Its 148-ft blades (sweeping more than 1.5 acres) are on a 262-ft tower, totaling 410 feet.

Another model being seen more in the U.S. is the 2-megawatt Gamesa G87 from Spain, which sports 143-ft blades (just under 1.5 acres) on a 256-ft tower, totaling 399 feet.

Many existing models and new ones being introduced reach well over 400 feet high.

How are the wind turbine components transported?

Transport of such large items and the cranes needed to assemble them often presents problems in the remote areas where they are typically built. Roads must be widened, curves straightened, and in wild areas new roads built altogether.

What kind of platform is a wind turbine set in?

The steel tower is anchored in a platform of more than a thousand tons of concrete and steel rebar, 30 to 50 feet across and anywhere from 6 to 30 feet deep. Shafts are sometimes driven down farther to help anchor it. **Mountain tops must be blasted to accommodate it.** The platform is critical to stabilizing the immense weight of the turbine assembly.

How much do wind turbines weigh?

In the GE 1.5-megawatt model, **the nacelle alone weighs more than 56 tons**, the **blade assembly weighs more than 36 tons**, and **the tower itself weighs about 71 tons -- a total weight of 164 tons.** The corresponding weights for the Vestas V90 are 75, 40, and 152, total 267 tons; and for the Gamesa G87 72, 42, and 220, total 334 tons.

What is the nacelle?

The gearbox -- which transforms the slow turning of the blades to a faster rotor speed -- and the **generator are massive pieces of machinery housed in a bus-sized container**, called the nacelle, at the top of the tower. The blades are attached to the rotor hub at one end of the nacelle. **Some nacelles include a helicopter landing pad.**

Are wind turbines more intrusive than other structures of similar size?

Besides the noise and vibrations such huge moving machines unavoidably generate, they must be topped with flashing lights day and night to increase their visibility. The moving blades attract attention.

How much area is required for a wind power facility?

The **huge turbines require a correspondingly large area around them clear of trees and other turbines** to maximize the effect of the wind and avoid interference. **They should have 10 rotor diameters of clearance in the direction of the wind and 3 rotor diameters in every other direction.** In a line of several turbines perpendicular to the wind **(as on a mountain ridge), the GE 1.5-MW model would need at least 32 acres and the Vestas V90 78 acres for each tower.** In an array that can take advantage of the wind from any direction, the GE needs 82 acres and the Vestas V90 111 acres per tower.

In practice, the area varies, averaging about 50 acres per megawatt of capacity. On mountain ridges, the turbines are generally squeezed in about eight per mile.

Can the area around a wind turbine continue to be used?

Only by putting oneself in danger. Besides the **unpleasant noises and distracting motion, wind turbines are not safe.** They are **high-voltage electrical devices with large moving parts. It is estimated that for every 100 turbines, one blade will break off (see Larwood, 2005).** In the winter, heavy sheets of ice can build up and then fall or be thrown off. Access to the land around wind turbines is usually restricted, even to the landowner.

Are bigger turbines more efficient?

No, they are just **bigger.** Output depends on wind speed and the combination of blade diameter and generator size. **Bigger blades on a taller tower can capture more wind to run a bigger generator, but they don't do so more efficiently than smaller models.**

© National Wind Watch, Inc.
www.wind-watch.org

Article #2

http://www.aweo.org/windmodels.html
Size specifications of common industrial wind turbines

Vestas and General Electric (GE) dominate the market for industrial wind turbines in the U.S. Many older U.S. facilities use NEG Micon turbines, and Vestas has absorbed that manufacturer. Other older facilities use turbines from Zond, which was acquired by Enron (the inventor of "green tags"), whose wind business GE acquired in turn to take over the racket. Information about Vestas models can be found at www.vestas.com, Gamesa models at www.gamesa.es/en/products/wind-turbines/catalogue, GE models at www.gepower.com/prod_serv/products/wind_turbines/en, Siemens models at www.powergeneration.siemens.com/products-solutions-services/products-packages/wind-turbines/products/Products.htm, Suzlon models at www.suzlon.com, Clipper models at www.clipperwind.com, and Repower (acquired by Suzlon in May 2007) models at www.repower.de/index.php?id=12&L=1. Americas Wind Energy, Enercon, Fuhrländer, Mitsubishi, Goldwind, Nordex, AAER, Dewind, and Ecotècnia are also major manufacturers, but their turbines are less common in the U.S.

model	capacity	blade length*	hub ht†	total ht	area swept by blades	rpm range	max blade tip speed‡	rated wind speed§
GE 1.5s	1.5 MW	35.25 m (116 ft)	64.7 m (212 ft)	99.95 m (328 ft)	3,904 m² (0.96 acre)	11.1-22.2	183 mph	12 m/s (27 mph)
GE 1.5sle	1.5 MW	38.5 m (126 ft)	80 m (262 ft)	118.5 m (389 ft)	4,657 m² (1.15 acre)	?	?	14 m/s (31 mph)
Vestas V82	1.65 MW	41 m (135 ft)	70 m (230 ft)	111 m (364 ft)	5,281 m² (1.30 acres)	?-14.4	138 mph	13 m/s (29 mph)
Vestas V90	1.8 MW	45 m (148 ft)	80 m (262 ft)	125 m (410 ft)	6,362 m² (1.57 acres)	8.8-14.9	157 mph	11 m/s (25 mph)
			105 m (344 ft)	150 m (492 ft)				
Vestas V100	2.75 MW	50 m (164 ft)	80 m (262 ft)	130 m (427 ft)	7,854 m² (1.94 acres)	7.2-15.3	179 mph	15 m/s (34 mph)
			100 m (328 ft)	150 m (492 ft)				
Vestas V90	3.0 MW	45 m	80 m	125 m	6,362 m²	9-19	200 mph	15 m/s

		(148 ft)	(262 ft)	(410 ft)	(1.57 acres)			(34 mph)
Gamesa G87	2.0 MW	43.5 m (143 ft)	78 m (256 ft)	121.5 m (399 ft)	5,945 m² (1.47 acres)	9/19	194 mph	c. 13.5 m/s (30 mph)
Siemens	2.3 MW	46.5 m (153 ft)	80 m (262 ft)	126.5 m (415 ft)	6,793 m² (1.68 acres)	6-16	169 mph	13-14 m/s (29-31 mph)
Bonus (Siemens)	1.3 MW	31 m (102 ft)	68 m (223 ft)	99 m (325 ft)	3,019 m² (0.75 acres)	13/19	138 mph	14 m/s (31 mph)
Bonus (Siemens)	2.0 MW	38 m (125 ft)	60 m (197 ft)	98 m (322 ft)	4,536 m² (1.12 acres)	11/17	151 mph	c. 15 m/s (c. 34 mph)
Bonus (Siemens)	2.3 MW	41.2 m (135 ft)	80 m (262 ft)	121.2 m (398 ft)	5,333 m² (1.32 acres)	11/17	164 mph	c. 15 m/s (c. 34 mph)
Suzlon 950	0.95 MW	32 m (105 ft)	65 m (213 ft)	97 m (318 ft)	3,217 m² (0.79 acres)	13.9/20.8	156 mph	11 m/s (25 mph)
Suzlon S64	1.25 MW	32 m (105 ft)	73 m (240 ft)	105 m (344 ft)	3,217 m² (0.79 acres)	13.9/20.8	156 mph	12 m/s (27 mph)
Suzlon S88	2.1 MW	44 m (144 ft)	80 m (262 ft)	124 m (407 ft)	6,082 m² (1.50 acres)			14 m/s (31 mph)
Clipper Liberty	2.5 MW (4 × 650 KW)	44.5 m (146 ft)	80 m (262 ft)	124.5 m (409 ft)	6,221 m² (1.54 acres)	9.7-15.5	163 mph	c. 11.5 m/s (c. 26 mph)
		46.5 m (153 ft)		126.5 m (415 ft)	6,793 m² (1.68 acres)		169 mph	
		49.5 m (162 ft)	78 m (256 ft)	127.5 m (418 ft)	7,698 m² (1.90 acres)		180 mph	
Repower MM92	2.0 MW	46.25 m (152 ft)	100 m (328 ft)	146.25 m (480 ft)	6,720 m² (1.66 acres)	7.8-15.0	163 mph	11.2 m/s (25 mph)

*This figure is actually half the rotor diameter. The blade itself may be about a meter shorter, because it is attached to a large hub.

†Hub (tower) heights may vary; the more commonly used sizes are presented.
‡Rotor diameter (m) × π × rpm ÷ 26.82
§The rated, or nominal, wind speed is the speed at which the turbine produces power at its full capacity. For example the GE 1.5s does not generate 1.5 MW of power until the wind is blowing steadily at 27 mph or more. As the wind falls below that, power production falls exponentially.

Article #3

http://www.cn.ca/documents/WhitePapers/Transporting-Wind-Turbines-White-Paper-en.pdf
HOW BIG IS BIG?

To understand and appreciate the logistics of transporting such massive parts it helps to understand the makeup of a wind turbine. The specs for a 1.8 MW turbine provided by the Canadian Wind Energy Association (CanWEA):

- **The nacelle (generator components)** is the size of a small motor home and weighs 63,000 kg (138,891 lb).
- **Each blade** is 39 m (128 ') long – the same length as a Boeing 737, and the 3-blade rotor weighs 35,000 kg (77,162 lb).
- **The 65 m (213 ') tower** is made up of rolled steel and comes in three pieces. The entire tower weighs 132,000 kg and contains enough steel to manufacture 206 average cars.
- **The foundation concrete** is 9 – 10 m (33 ') deep and 4 m (13 ') across. 102 tension type bolts run the full depth of the foundation.
- **Swept area** of the blades is 5,024 sq. m, (16,483 ') the size of 3 NHL hockey rinks combined or about 1.25 acres.
- **Total weight** of the entire turbine is 230,000 kg (507,063 lb) – about the same as two fully fueled 3,200 HP diesel electric locomotives.

This is just one example, however even the wind turbine components above are often even bigger than this.

WWW.CN.CA 4 **THE LOGISTICS, NOT EXACTLY A BREEZE**

Understanding the size of wind turbines provides an appreciation for the complexity of their transportation. A single turbine can require up to 8 loads (one nacelle, one hub, three blades and three tower sections). **For an entire project of 150 MW, transportation requirements have been as much as 689 truckloads, 140 railcars and 8 vessels to the United States.** And, many projects today are much larger than 150 MW (the largest operating project in the US is currently 736 MW, and projects of more than 4,000 MWs are in the early stages of development).*5*

It is no wonder that one of the biggest challenges facing the industry are the logistics of transporting such oversized parts sometimes over extremely long distances. **Among the issues; traffic backups, road damage, coordination and cost.**

TRAFFIC CONGESTION

As suggested in a recent article in the New York Times, *"As demand for clean energy grows, towns around the country are finding their traffic patterns roiled as convoys carrying disassembled towers that will reach more than 250 feet (*76.2 m*) in height, as well as motors, blades and other parts roll through. Escorted by patrol cars and gawked at by pedestrians, the equipment must often travel hundreds of miles from ports or factories to the remote, windy destinations where the turbines are erected."6*

ROAD DAMAGE

Normal wear and tear of any road is expected over time, but **whenever there is extensive pressure and constant flow of traffic, road damage becomes inevitable.** In Texas for example, the state with the most wind turbines, the **constant truck traffic is tearing up small roads** in the western part of the state, where the turbines are being rapidly erected.

Conclusions and Comments:

1. **An in-depth geological study should be made of the entire proposed site—before the project is approved, not after. A near-surface seismic hazard survey and deep coring should be required before this project is approved.**

2. **No watershed studies have been done for this project site, even though the Soil Surveys clearly state that this is a watershed area.**

3. **The impacts of the turbines' weights on the mountain ridges in the DEIS has not been fully addressed. Could mass wasting result from ridges being flattened, heavy machinery being installed, deep anchors disturbing the soils, etc?**

4. **"The steel tower is anchored in a platform of more than a thousand tons of concrete and steel rebar,** 30 to 50 feet across and anywhere from 6 to 30 feet deep. Shafts are sometimes driven down farther to help anchor it. **Mountain tops must be blasted to accommodate it.** The platform is critical to stabilizing the immense weight of the turbine assembly." This statement is from the National Windwatch article. I really don't want to see mountain tops "blasted," and residents near the wind farm proposal probably don't want to see it, either! The proposed wind farm has 50 some turbines proposed. That is 50 x 1000 tons of concrete and steel rebar = to 50,000 tons of concrete and steel rebar weighing down on soils that are susceptible to erosion; one ton equals 2000 pounds, 2000 pounds x 50,000 tons = 50,000,000 pounds. What are the cumulative impacts of putting 50,000,000 pounds of stress on mountain ridges in Skamania County, and what are the cumulative effects of all the other wind farms' weights on all the lands and soils in BPA's area of interest? What does all this weight do to water tables? Any other effects? This issue of weight should be addressed more fully in the DEIS and its lack makes the DEIS inadequate and incomplete.

5. Wind turbines are dangerous pieces of noisy machinery and they should not be put on top of ridges or on steep slopes. At least this is what I think. The lack of information on the environmental, cumulative impacts of wind turbines on lands and soils is a critical deficiency in the Whistling Ridge DEIS and this is a fatal flaw in the DEIS.

6. Mass wasting is a real concern in the proposal area and it has not been adequately addressed in the DEIS. There are real consequences to area residents from erosion and mass wasting events. How would people be evacuated if a wind turbine's weight causes a mass wasting event or other types of erosion? What are the evacuation routes?

There are a lot of questions about the geology of the proposal area that have not been adequately answered in the DEIS. We need complete data in order to properly evaluate the DEIS.

/e-signature/**Mary J. Repar**
27 August 2010

Michelle, Kayce (UTC)

From: [redacted]
Sent: Friday, August 27, 2010 1:13 PM
To: EFSEC (UTC)
Subject: I support Whistling Ridge

Hello Energy Facility Site Evaluation Council,

I would like to express my strong support for the Whistling Ridge Energy Project. I am proud to live in a community adjacent to this project. I am proud to say we will have such a project here. We are doing our part to help our Country become as environmentally conscious as possible in our energy production and use.

I will see the turbines from our property, and most likely also hear them. And although I live up in the Little White Salmon River Canyon Valley I can hear the trains running along both sides of the Columbia River, I hear the barges as they go up and down the River, and I hear the generators and alarms from the US Federal Fish Hatchery down in the Canyon. I hear all this while I live in the beautiful forest and so do the dear eating my Blueberries, the Turkey\'s eating my bird seed, the Cougar that crossed our road a while back, and the bear that smashed our drinking water spring roof last week. Surprise, we all seem to be flourishing here in the woods side by side!

SDS has an excellent reputation as a supporter of our community, citizens, our fire departments, schools, etc., and they go out of their way to allow public use of their lands and conduct their business with consideration of us as their neighbors. Surprise, industry working side-by-side private homes in the wilderness, it works!

I am proud to live here in Mill A, in Skamania County Washington.

Turn the tables everyone, use the Whistling Ridge Energy Project as an asset!!

Anita Gahimer Crow
Resident and Business Owner
Mill A/Cook, Washington

Sincerely,
Anita Gahimer Crow
[redacted]

Michelle, Kayce (UTC)

From: [redacted]
Sent: Friday, August 27, 2010 2:44 PM
To: EFSEC (UTC)
Subject: Re: Whistling Ridge DEIS Comments

Ladies and Gentlemen,

Thank you for the opportunity to submit comments regarding the above captioned proposed industrial wind generating facility in Underwood, Washington. I strongly believe that this proposed industrial facility clearly warrants a siting denial by your Council. There are fatal flaws in the concept, location, design, construction and operation of an industrial energy facility in Underwood, Washington and the Columbia River Gorge.

The concept of locating such a facility on ridge lines of dense old growth forested land is ill conceived for numerous reasons. It is of great importance that the approval of such a facility would have far reaching precedential repercussions, encouraging the deforestation and development of thousands of acres of both habitat and scenic resources. Developers are already viewing the potential for the development of similar facilities to the west, which could result in facilities scattered from the western Columbia Gorge to Portland, despoiling the natural ambiance of the area and reducing habitat, carbon sequestration and tourism. Your approval of an industrial facility impacting, but not technically in the boundary of The Columbia Gorge National Scenic Area (NSA) would set a precedent that could open the flood gates for any development visible from the NSA but not technically within its boundaries, including, but not limited to Las Vegas style casino signs, Space Needle type establishments, and high rise developments on formerly forested ridges. You have the power and authority to prevent setting the precedent that the Columbia River Gorge is open to a gold rush of industrial development.

The concept of ridge line deforestation and industrial development is also faulty in its failure to address additional factors such as the earthquake prone conditions of this area, the impact of blasting and construction on known water resources, including springs and aquifers. The steepness of the proposed site, once deforested further, will result in unacceptable water run off, erosion and extreme habitat loss.

The concept of clear cutting thousands of acres of old growth forest for industrial development in favor of select harvesting is ecologically and economically unsound for this region. Alternative sites that have already been cleared and that do not impact the scenic value of the Gorge are plentiful and should be preferred to the siting of the current proposal.

The concept that one developer's desire to achieve "economic diversity" at the expense of the impact of the project to Gorge wildlife, residents and tourists of both Washington and Oregon is selfish at best, arrogant at worst. The concept of this proposed project is fatally flawed and siting of this proposed industrial facility should be denied.

The location of the proposed project is also fatally flawed for many of the reasons discussed previously and for additional reasons. The proposed location will severely impact local Underwood residents. You are aware of the numerous non wind industry sponsored studies detailing both physical and mental health impacts on both adults and children, so I will not reiterate those findings.

Please do not discount the life altering effect that an industrial energy facility will impose on local residents. Please do not credit the wind industry sponsored studies that such a facility would not negatively impact home values severely. Really, would any of you chose a residence within close proximity to 425 foot loud twirling lighted structures if given the choice of an equally pleasing quiet rural residence unencumbered by such structures? I think not.

The proposed location of the project also discounts the very real threat of fire in what is now a strictly no burn tinder box. This location is not a flat insured wheat field. This location is a forested steeply graded terrain which is home to a wide variety of wildlife, domesticated livestock and people and their homes. Both construction and operation of an industrial facility poses an unacceptable threat to the aforementioned as well as to travelers and the very scenic vistas that make up the Gorge. The location of the proposed facility by its very nature would be difficult or impossible to adequately access with fire fighting equipment. The helicopter water drops so instrumental in fighting the Underwood fire of the summer of 2008 which destroyed trees, vegetation, wildlife and homes, would not be available for use in and around the proposed structures because of the proximity prohibition for helicopters and turbines or towers. A developer's pet project should not instill fear and concern and potential devastation to the surrounding inhabitants and a potentially severe loss of scenic value to the Gorge community and tourists.

The proposed location is flawed for reasons of cumulative impact. Existing industrial wind facilities and the rate of development of additional industrial wind facilities in the surrounding areas to the east have created an unacceptable cumulative impact on the wildlife populations of the area, as well as for many of the residents. Approval of the proposed WRE project would exacerbate this effect due to its established migratory paths as well as the non migratory bat and avian populations, not to mention the wildlife habitat devastation that would result from the sheer amount of deforestation required.

The proposed project location is ill conceived from another cumulative impact circumstance. Recent legal and government decisions related to the Broughton Mill resort and the Cascade Locks Casino make it possible that those facilities could become a reality. If so, the cumulative impact of these establishments, coupled with the construction of an industrial wind facility (and the precedent for other industrial developments) in a relative proximity to each other, could cumulatively negatively impact the Gorge in ways that we cannot now fully conceive. We must be good stewards of this national scenic area, not its destroyers.

The design of the proposed facility is fatally flawed for lack of statutorily required alternatives and insufficient mitigation analysis.

The construction of the proposed facility would entail unacceptable traffic and emergency response impacts for residents and visitors to the NSA, particularly to key viewing points in the Underwood area. Construction of this facility would create unacceptable impacts on ground water supplies, and contribute to the already high fire hazard.

The operation of the proposed industrial facility raises unanswered questions regarding the use of the power generated and the ownership of the facility. It is common knowledge that 80% of the wind power generated in the northwest is sold outside of Washington, principally to California, and thus not contributing to Washington's mandated green energy requirements. It is also common knowledge that a high percentage of the smaller wind energy facilities themselves are sold to out of state buyers, or are under contracts for sale to such buyers who frequently employ their own in-house employees, not resulting in local permanent jobs. Is the proponent's staunch resistance to alternative designs related to a minimum output required for just such a sale? Should the residents and visitors to the Columbia River Gorge National Scenic Area be subjected to the intrusion of the construction and

presence of an industrial wind energy facility that statistically is likely to become owned by an out of state entity that sells its power out of state?

The Whistling Ridge Energy proposed project is the wrong project for the Gorge, at the wrong time and wrong
place.

Sincerely,

Rebecca Maxey

COMMENT LETTER 284

From: Talburt, Tammy (UTC) on behalf of EFSEC (UTC)
To: Rachel Tamigniaux
Subject: FW: Comments-Whistling Ridge-DEIS-Avians-Repar-8 #3
Date: Thursday, September 23, 2010 11:18:42 AM
Attachments: Comments_MBTA_27Aug2010.doc
Importance: High

From: repar [mailto[redacted]
Sent: Friday, August 27, 2010 4:50 PM
To: EFSEC (UTC)
Subject: Comments-Whistling Ridge-DEIS-Avians-Repar-8
Importance: High

Dear EFSEC,
Attached, please find my last entry for comments on the Whistling Ridge DEIS. Thank you for this opportunity to comment. I learned a lot and I know there is a lot to still learn! Have a wonderful weekend./Mary

Mary J. Repar

[redacted]

Mary J. Repar
[redacted]

27 August 2010

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www.bpa.gov/comment

Re: Comments on the Whistling Ridge DEIS and the inadequacy of information on the cumulative effects of wind farm development on avian species and possible and probable violations of the Migratory Bird Treaty Act of 1918 (MBTA)

Dear EFSEC and BPA,

I voiced some concerns about birds and bats in my previous comments on Chapter 3 and cumulative effects, but I wanted to voice even more concern and trepidation about the cumulative effects and impacts that regional wind farms, and BPA energy production facilities en toto, have on migratory species. The Migratory Bird Treaty Act, see Reference #1, below, is mentioned in the DEIS but I am very concerned that the topic of migrating avian species should have more in-depth and thorough regional data presented in the DEIS. As I have stated before, cumulative impacts, both direct and indirect, are not done on a project by project basis, but, according to NEPA regulations, must be done on a reference geographical and/or regional basis. This was not done by either SDS or BPA, the two proponents for this wind farm project.

Briefly, some of my concerns:

- Cumulative effects and impacts on species viability are not adequately addressed in the DEIS—there is no supporting data to show if avian species birth rates, replacement rates, genetic diversity, etc., would or would not be affected by regional wind farms. This must be addressed;
- Will there be "taking" by the wind turbines? How will "taking," basically killing of an avian, be addressed? What type of monitoring will be done throughout the life of the project to collect data on "taking"?
- Where are the migratory bird maps for the region? I did not find them in the DEIS.

- Are there other species, besides avian, that migrate through the area and might be affected by the regional wind farms and BPA's energy generation infrastructure? Apparently, the MBTA was amended to include other species: "The 1974 statute (P.L. 93-300) amended the MBTA to include the provisions of the 1972 Convention between the U.S. and Japan for the Protection of Migratory Birds and Birds in Danger of Extinction. This law also amended the title of the MBTA to read: **"An Act to give effect to the conventions between the U.S. and other nations for the protection of migratory birds, birds in danger of extinction, game mammals, and their environment."**

I'm sure that I have many more questions, but the 5 p.m. deadline is upon me and I want to make sure that I get these comments in on time. I do think that the Whistling Ridge DEIS is extremely deficient in data on migration pathways for avian species. This lack of regional data must be addressed or the DEIS is incomplete. It is an established fact that wind farms kill birds. How many is hotly debated. However, that does not mean that we should not attempt to gather data so that we can better understand the regional cumulative impacts and effects of wind farms and energy production infrastructures on avian species, and, of course, on other species.

Thank you.

Sincerely,

/e-signature/Mary J. Repar
27 August 2010

Reference #1

http://www.fws.gov/laws/lawsdigest/migtrea.html

Migratory Bird Treaty Act of 1918

Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712; Ch. 128; July 13, 1918; 40 Stat. 755) as amended by: Chapter 634; June 20, 1936; 49 Stat. 1556; P.L. 86-732; September 8, 1960; 74 Stat. 866; P.L. 90-578; October 17, 1968; 82 Stat. 1118; P.L. 91-135; December 5, 1969; 83 Stat. 282; P.L. 93-300; June 1, 1974; 88 Stat. 190; P.L. 95-616; November 8, 1978; 92 Stat. 3111; P.L. 99-645; November 10, 1986; 100 Stat. 3590 and P.L. 105-312; October 30, 1998; 112 Stat. 2956

The original 1918 statute implemented the 1916 Convention between the U.S. and Great Britain (for Canada) for the protection of migratory birds. Later amendments implemented treaties between the U.S. and Mexico, the U.S. and Japan, and the U.S. and the Soviet Union (now Russia).

Specific provisions in the statute include:
Establishment of a Federal prohibition, unless permitted by regulations, to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention . . . for the protection of migratory birds . . . or any part, nest, or egg of any such bird." (16 U.S.C. 703)

This prohibition applies to birds included in the respective international conventions between the U.S. and Great Britain, the U.S. and Mexico, the U.S. and Japan, and the U.S. and the Russia.

Authority for the Secretary of the Interior to determine, periodically, when, consistent with the Conventions, "hunting, taking, capture, killing, possession, sale, purchase, shipment, transportation, carriage, or export of any . . .bird, or any part, nest or egg" could be undertaken and to adopt regulations for this purpose. These determinations are to be made based on "due regard to the zones of temperature and to the distribution, abundance, economic value, breeding habits, and times of migratory flight." (16 U.S.C. 704)

A decree that domestic interstate and international transportation of migratory birds which are taken in violation of this law is unlawful, as well as importation of any migratory birds which are taken in violation of Canadian laws. (16 U.S.C. 705)

Authority for Interior officials to enforce the provisions of this law, including seizure of birds illegally taken which can be forfeited to the U.S. and disposed of as directed by the courts. (16 U.S.C. 706) Establishment of fines for violation of this law, including misdemeanor charges. (16 U.S.C. 707)

Authority for States to enact and implement laws or regulations to allow for greater protection of migratory birds, provided that such laws are consistent with the respective Conventions and that open seasons do not extend beyond those established at the national level. (16 U.S.C. 708)

A repeal of all laws inconsistent with the provisions of this Act. (16 U.S.C. 710)
Authority for the continued breeding and sale of migratory game birds on farms and preserves for the purpose of increasing the food supply. (16 U.S.C. 711)

The 1936 statute implemented the Convention between the U.S. and Mexico for the Protection of Migratory Birds and Game Mammals. Migratory bird import and export restrictions between Mexico and the U.S. were also authorized, and in issuing any regulations to implement this section, the Secretary of Agriculture was required to consider U.S. laws forbidding importation of certain mammals injurious to agricultural and horticultural interests. Monies for the Secretary of Agriculture to implement these provisions were also authorized.

The 1960 statute (P.L. 86-732) amended the MBTA by altering earlier penalty provisions. The new provisions stipulated that violations of this Act would constitute a misdemeanor and conviction would result in a fine of not more than $500 or imprisonment of not more than six months. Activities aimed at selling migratory birds in violation of this law would be subject to fine of not more than $2000 and imprisonment could not exceed two years. Guilty offenses would constitute a felony. Equipment used for sale purchases was authorized to be seized and held, by the Secretary of the Interior, pending prosecution, and, upon conviction, be treated as a penalty.

Section 10 of the 1969 amendments to the Lacey Act (P.L. 91-135) repealed the provisions of the MBTA prohibiting the shipment of wild game mammals or parts to and from the U.S. or Mexico unless permitted by the Secretary of the Interior. The definition of "wildlife" under these amendments does not include migratory birds, however, which are protected under the MBTA.

The 1974 statute (P.L. 93-300) amended the MBTA to include the provisions of the 1972 Convention between the U.S. and Japan for the Protection of Migratory Birds and Birds in Danger of Extinction. This law also amended the title of the MBTA to read: "An Act to give effect to the conventions between the U.S. and other nations for the protection of migratory birds, birds in danger of extinction, game mammals, and their environment." Section 3(h) of the Fish and Wildlife Improvement Act of 1978 (P.L. 95-616) amended the MBTA to authorize forfeiture to the U.S. of birds and their parts illegally taken, for disposal by the Secretary of the Interior as he deems appropriate. These amendments also authorized the Secretary to issue regulations to permit Alaskan natives to take migratory birds for their subsistence needs during established seasons. The Secretary was required to consider the related migratory bird conventions with Great Britain, Mexico, Japan, and the Soviet Union in establishing these regulations and to establish seasons to provide for the preservation and maintenance of migratory bird stocks.

Public Law 95-616 also ratified a treaty with the Soviet Union specifying that both nations will take measures to protect identified ecosystems of special importance to migratory birds against pollution, detrimental alterations, and other environmental degradations. (See entry for the Convention Between the United States of America and the Union of Soviet Socialist Republics Concerning the Conservation of Migratory Birds and Their Environment; T.I.A.S. 9073; signed on November 19, 1976, and approved by the Senate on July 12, 1978; 92 Stat. 3110.)

Public Law 99-645, the 1986 Emergency Wetlands Resources Act, amended the Act to require that felony violations under the MBTA must be "knowingly" committed. P.L. 105-312, Migratory Bird Treaty Reform Act of 1998, amended the law to make it unlawful to take migratory game birds by the aid of bait if the person knows or reasonably should know that the area is baited. This provision eliminates the "strict liability" standard that was used to enforce Federal baiting regulations and replaces it with a "know or should have known" standard. These amendments also make it unlawful to place or direct the placement of bait on or adjacent to an area for the purpose of taking or attempting to take migratory game birds, and makes these violations punishable under title 18 United States Code, (with fines up to $100,000 for individuals and $200,000 for organizations), imprisonment for not more than 1 year, or both. The new amendments require the Secretary of Interior to submit to the Senate Committee on Environment and Public Works and the House Committee on Resources a report analyzing the effect of these amendments and the practice of baiting on migratory bird conservation and law enforcement. The report to Congress is due no later than five years after enactment of the new law.

P.L. 105-312 also amends the law to allow the fine for misdemeanor convictions under the Migratory Bird Treaty Act to be up to $15,000 rather than $5000.

COMMENT LETTER 285

WR - DEIS
Public Comment #538

Michelle, Kayce (UTC) **Late**

From: repar [redacted]
Sent: Sunday, August 29, 2010 12:06 PM
To: EFSEC (UTC)
Subject: Whistling Ridge DEIS-addendum from Repar
Attachments: Comments_DEIS_wind power difficult for grid_27Aug2010.doc

Importance: High

Dear EFSEC,
I forgot to include this article on wind farms creating challenges for the power grid, with my comments (submitted on 27 August 2010) in the document that I sent on Friday, entitled Comments_DEIS_BPA_Inadequate_27Aug2010. Thank you very much./Mary

Mary J. Repar
[redacted]

Mary J. Repar
[redacted]

27 August 2010

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503. 230. 4145
www.bpa.gov/comment

Re: Comments on the Whistling Ridge DEIS and too much of a good thing: Growth in wind power makes life difficult for grid

Dear EFSEC and BPA,

I forgot to include this article on wind farms creating challenges for the power grid, with my comments (submitted on 27 August 2010) in the document that I sent on Friday, entitled Comments_DEIS_BPA_Inadequate_27Aug2010. I think this article makes it quite clear that too much wind power is not good for the power grid—which brings up the question of why are so many subsidized wind farms being built if the power they produce can't actually be used on the electric power grid? And, why are we concentrating all our energy eggs in the wind power basket?

I have bulletized the article, below, for a quick summary of my concerns about wind generation and its effects on BPA's power grid:

- Fast-growing number of wind farms;
- Has created **new challenges** for those who manage the power grid;
- Almost two nuclear plants worth of extra **power was sizzling down the lines;**
- Storm caused the **largest hourly spike in wind power the Northwest** has ever experienced;
- At BPA, it was **too much of a good thing;**
- **More electricity than its customers needed;**
- More than the available power lines could export;
- **More than the grid could readily absorb;**
- The edict went out: Feather your turbine blades; **slash output;**
- It's **one likely to go out with increasing frequency;**

- The last three years have seen a **doubling of the generation capacity of wind farms** in the region;
- **By 2013, wind generation capacity expected to double again;**
- In the real world, wind development, coupled with **wild swings in its output**, are **overwhelming the region's electrical grid** and outstripping its ability to use the power or send it elsewhere;
- In theory, better coordination could help solve the problem, reducing costs, eliminating bottlenecks and solving scheduling conflicts;
- In practice, risk-averse engineers, utility managers or public utility customers **worried about rates increasing**;
- Renewables explosion forcing the **transmission issue** to center stage now;
- California, which already buys much of the Northwest's wind energy, **increasing its appetite for green power**;
- The solution to the problem is to **beef up or build new power lines**, a five to ten year proposition;
- Involves coordination on **what to build, where to put it and who pays**;
- **Only 15 percent of the electricity generated by wind farms in the Northwest goes to the public utilities that buy power directly from BPA**;
- **BPA manages three quarters of the region's high voltage transmission system**, including the sections serving most of the region's wind farms;
- BPA's job is to balance **wind farms' up-and-down power output**, blending it with other sources of power so total generation at any given time matches total demand -- **a requirement to maintain grid reliability**;
- As the region's wind fleet grows, **an ever bigger slice of the hydro pie** is being reserved to fill in when the wind doesn't blow as scheduled;
- That means **foregone sales of surplus** power, a source of revenue that reduces BPA's rates for public utility customers;
- **Dumping too much water** over the spillways, **to balance wind power** production, **harms fish**;
- Another option is to **cut generation at the wind farms**;
- Too many curtailments **undermines the economics of wind**;
- **"It's not fair to have a cost shift,"** said Elliott Mainzer, BPA's director of strategic planning;
- BPA proposed quadrupling its **"integration" rate**, Oregon's congressional delegation took up the wind developers' fight, accusing the agency of dragging its feet on renewables and focusing solely on **maintaining low rates for its public utility customers**. Sen. Ron Wyden was highly critical of the agency's attitude problem, and Rep. Earl Blumenauer even suggested it might be time for new leadership at the agency;
- **In extreme situations, however, the agency continues to dump wind;**
- At the current rate of wind development the region's system of dams and power lines will start running into consistent operational problems around 2013;
- In 2013, wind in BPA's territory will reach a total capacity of some 6,000 megawatts;
- The 6000 MW capacity ceiling will require major structural changes;

- The solution lies in **better coordination of power plants** across the west, **more efficient use of existing power lines** and **some expansion of the grid**;
- **New lines often require new rights of way through sensitive habitat and private property**, are **phenomenally expensive**, raising the show-stopping question of **who pays**;
- The piece that is not doing well is planning for moving wind out of the region;
- Changes won't come quickly, easily or cheaply.
- **"We can't pay for everything** at once, and **we don't want to pay for everything** on the table," said Jeff Bissonnette, a lobbyist for the Citizen's Utility Board of Oregon. "We have to figure out what makes sense to pay for first, second and third, and **what makes sense for consumers and the environment."**

In conclusion, it appears that wind may not be the end all answer to our concerns about carbon footprints and going green. More wind farms will mean more cries for more and bigger transmission lines. None of this was addressed in the Whistling Ridge DEIS in terms of cumulative impacts and effects on our region from the proposals to build more and more transmission lines. Why not? This is a real and vital deficiency of information, an information gap, in the DEIS, and these concerns about the effects of wind power on our power grid must be addressed. They have not been adequately addressed in the DEIS. This is a fatal flaw in the DEIS.

/e-signature/Mary J. Repar
27 August 2010

Reference Article:

Too much of a good thing: Growth in wind power makes life difficult for grid managers

Published: Saturday, July 17, 2010, 10:00 AM Updated: Saturday, July 17, 2010, 8:45 PM

Ted Sickinger, The Oregonian

Benjamin Brink/The Oregonian The fast-growing number of wind farms in the Northwest, such as the Biglow Canyon Wind Farm near Rufus, has created new challenges for those who manage the power grid.

On the afternoon of May 19, in a single chaotic hour, more than a thousand wind turbines in the Columbia River Gorge went from spinning lazily in the breeze to full throttle as a storm rolled east out of Hood River.

Suddenly, **almost two nuclear plants worth of extra power was sizzling down the lines** -- the largest hourly spike in wind power the Northwest has ever experienced.

At the Bonneville Power Administration's control room in Vancouver, **it was too much of a good thing**. More electricity than its customers needed. **More than the available power lines could export** from the region. And more than the grid could readily absorb by ramping down generation at the region's network of federal dams.

So the edict went out: **Feather your turbine blades; slash output**.

It was an unwelcome instruction for wind farm owners, whose economics depend on generating electricity whenever possible. **Yet it's one likely to go out with increasing frequency.**

During the **last three years**, the building boom spawned by green energy mandates in Oregon, Washington and California **doubled the generation capacity of wind farms** in the region. **By 2013, it's expected to double again**.

That seems like great news. Plenty of carbon-free energy with no fuel costs. Jobs. Property taxes.

In the real world, however, the pace and geographic concentration of **wind development**, coupled with **wild swings in its output**, are overwhelming the region's electrical grid and outstripping its ability to use the power or send it elsewhere.

In theory, better coordination of the balkanized grid operations around the west could help solve the problem, reducing costs, eliminating bottlenecks and solving scheduling conflicts that plague the system today.

In practice, however, those efforts have often stalled at the planning stage -- the victim of risk-averse engineers, utility managers or public utility customers worried about seeing their rates increase.

It's not a new problem. But the renewables explosion, and pressure to reduce carbon emissions, is forcing the transmission issue to center stage now.

"There's a sweet spot to talk about these issues, and everyone's attention is on this at the moment," said Rachel Shimshak, executive director of the Renewables Northwest Project. "Maybe the benefits didn't look so obvious before, but now we have a lot more people with skin in the game."

The most significant player in that crowd is **California, which already buys much of**

the Northwest's wind energy, but has trouble getting it delivered over clogged interstate power lines. The state has just increased its already aggressive renewable energy standards, **increasing its appetite for green power**.

Ultimately, the solution to the problem is to beef up or build new power lines, said Randy Hardy, a Seattle-based energy consultant. But that's a five to ten year proposition, involving even more coordination on **what to build, where to put it and who pays**.

"We have a next-year problem," Hardy said, "or maybe a this-year problem."

Only 15 percent of the electricity generated by wind farms in the Northwest goes to the public utilities that buy power directly from BPA, which sells power from federal dams in the Columbia Basin. But the federal power marketing agency manages three quarters of the region's high voltage transmission system, including the sections serving most of the region's wind farms.

That makes it **BPA's job to balance their up-and-down output**, blending it with other sources of power so total generation at any given time matches total demand -- a **requirement to maintain grid reliability**.

The dams are great for the job -- operators can adjust water flows through the turbines to help offset variable wind output.

But only within limits.

As the region's wind fleet grows, an ever bigger slice of the hydro pie is being reserved to fill in when the wind doesn't blow as scheduled. That means foregone sales of surplus power, a source of revenue that reduces BPA's rates for public utility customers.

When the wind blows harder than forecast, particularly during periods of high spring runoff at the dams, operators face the opposite problem. They can't bypass the dam turbines to lower hydro generation, because dumping too much water over the spillways harms fish.

So the other option is to cut generation at the wind farms.

Too many **curtailments**, however, **undermines the economics of wind**, not only because turbines generate less power to sell but because valuable tax and renewable energy credits are only generated when their blades are spinning.

"We are committed to trying to find ways to get as much wind into the system as possible, but we're going to be real sticklers about reliability, and we think its it's not fair to have a cost shift," said Elliott Mainzer, BPA's director of strategic planning

BPA does charge wind farms to offset the additional costs they bring to the system. But

those charges have been highly contentious.

Last year, when **the agency proposed quadrupling its "integration" rate,** Oregon's congressional delegation took up the wind developers' fight, accusing the agency of dragging its feet on renewables and focusing solely on maintaining low rates for its public utility customers. Sen. Ron Wyden was highly critical of the agency's attitude problem, and Rep. Earl Blumenauer even suggested it might be time for new leadership at the agency.

BPA ultimately backed away from the big rate increase. But it is coming up again this year as the agency kicks off a new rate-setting process.

Meanwhile, it has pushed ahead with a variety of efforts to accommodate more variable resources, from better wind forecasting to more flexible scheduling of transmission.

In extreme situations, however, the agency continues to dump wind.

At the current rate of wind development, says the BPA's Mainzer, the region's system of dams and power lines will start running into consistent operational problems around 2013, when wind in the agency's territory reaches total capacity of some 6,000 megawatts.

Above and beyond that, he said, **will require major structural changes.**

"If it's done right, he said, "it's a huge opportunity for the Northwest."

The solution, most experts believe, lies in **better coordination of power plants** across the west, **more efficient use of existing power lines** and **some expansion of the grid.**

"We believe there's more space on the lines if we get smarter about how we use them," said John Audley, deputy director at the Renewables Northwest Project. "But there isn't anyone out there who feels we have enough transmission in place to get what we need done."

Building new transmission, though, is an uphill battle. **New lines often require new rights of way through sensitive habitat and private property.** And they are phenomenally expensive, raising the show-stopping question of who pays.

BPA has had **some success** convincing wind developers and other transmission customers **to commit to helping fund new power lines and upgrades within the region.**

"The piece that is not doing well is planning for moving wind out of the region," said Brian Silverstein, senior vice president of transmission services for BPA. Ultimately, he said, "we can plan all we want. The challenge is getting people to commit to the investment."

There's a broad-based effort to get more out of the existing lines, too.

The **capacity of power lines linking Oregon and California**, for instance, is completely booked long term. But **on a day-to-day basis, utilization can be lower than 50 percent.**

Part of the problem is that utilities buy more capacity than they need, and hoard it for emergencies. **If that capacity can be freed up, BPA estimates the lines could transfer 10 to 15 percent more power.**

Another issue is that utilities are required to reserve line capacity an hour ahead of time. By allowing them to adjust their orders more frequently, utilities could accommodate unanticipated ebbs and flows in wind generation and maybe free up another 25 to 30 percent of capacity on the power lines.

But none of those changes come quickly, easily or cheaply. Utility managers, renewable developers, customer advocates and environmentalists met last week in Portland for a day-long seminar on expanding and modernizing the grid to accommodate renewables.

There was a definite sense of urgency in the air. But also determination.

"We can't pay for everything at once, and **we don't want to pay for everything** on the table," said Jeff Bissonnette, a lobbyist for the Citizen's Utility Board of Oregon. "We have to figure out what makes sense to pay for first, second and third, and **what makes sense for consumers and the environment."**

-- Ted Sickinger

Related topics: green power, renewables, wind farms, wind power

COMMENT LETTER 286

WR - DEIS
Public Comment #503

Michelle, Kayce (UTC)

From: repar [redacted]
Sent: Friday, August 27, 2010 10:06 AM
To: EFSEC (UTC)
Subject: Comments-Whistling Ridge-Repar-2
Attachments: Hearing Examiner Decision (SEP-08-35)_Feb2009.pdf; Comments_DEIS_Chap. 3 _Environment_Impacts_Mitigation_27Aug2010.doc

Importance: High

Dear EFSEC,
Attached please find my comments on Chapter 3 and cumulative impacts, plus a supporting document. Thank you.

Mary J. Repar

[redacted]

Mary J. Repar

[redacted]

27 August 2010

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Re: Comments on the Whistling Ridge DEIS, Chapter 3, Affected Environment, Impacts, and Mitigation; and, lack of cumulative impacts and effects analyses in the DEIS.

Dear EFSEC and BPA,

In this section, I am commenting upon the lack of any real, science-based cumulative impacts analyses done by either BPA or SDS Lumber, in Chapter 3 (p.3-1 to 3-289), Affected Environment, Impacts and Mitigation as presented in the Draft Environmental Impact Statement (DEIS). My ***Comments*** *are italicized and* ***bolded*** *after each section that I commented upon,* for the entirety of Chapter 3. (I saved Chapter 3 in text format so the tables and other pictures are not displayed properly). In order to preserve my sanity during my perambulations through 1500+ pages of the DEIS, I have had to also write a few separate memos, which I will also e-mail, upon certain specific areas that I had to research more thoroughly.

3.0 AFFECTED ENVIRONMENT, IMPACTS AND MITIGATION

This chapter describes the existing environmental resources in the vicinity of the proposed project and the potential impacts that the Proposed Action and the No Action Alterative would have on those resources. The potential impacts described were determined through research and field observation by environmental specialists and information provided by agency and public comments. More specific information on methodology for each resource is provided as appropriate. Each resource lists the mitigation measures that would lessen impacts and the impacts that would be unavoidable.

Toward the end of the chapter, cumulative impacts are described, followed by discussions of intentional destructive acts, relationship between short-term uses of the environment and long-term productivity, and irreversible or irretrievable commitments of resources.

3.1 EARTH

This section discusses the existing setting and potential project impacts related to geology, soils and topography. This analysis includes potential impacts of the Proposed Action on resources, and potential impacts of geologic hazards such as earthquakes or landslides on the project. This section includes information submitted as part of the Application for Site Certification (Appendix A) and the background data to that document (Appendix B Geotechnical Report).

3.1.1 AFFECTED ENVIRONMENT

3.1.1.1 Topography

The 1,152-acre proposed wind project site is situated on a series of north-trending ridges that range in elevation from approximately 2,100 to 2,300 feet above mean sea level (msl). The land west of the proposed project site drops sharply to a narrow river terrace and then to an elevation of less than 800 feet above msl in the Little White Salmon River valley. The topography northeast of the site drops gradually toward the White Salmon River or climbs gently up the northeast flank of Underwood Mountain at 2,728 feet above msl. To the south, the topography drops to a terrace of largely agricultural use and then toward the Columbia River. Figure 3.1-1 shows the site topography.

3.1.1.2 Regional Geology

The White Salmon, Washington area is located within the Cascade Range and the Columbia Intermontane Physiographic Province. The project area is located just within the western boundary of the Columbia Plateau, which is located at the western edge of the Columbia Intermontane Physiographic Province. This lowland province is surrounded on all sides by mountain ranges and highlands, and covers a vast area of eastern Washington and parts of northeastern Oregon and western Idaho.

3-1

33758687_115.cdr

Figure 3.1-1

Source: GeoDataScape. Site Topography

The Columbia Plateau is underlain by a series of layered basalt flows extruded from vents (located mainly in southeastern Washington and northeastern Oregon) during the Miocene epoch (between 5.3 and 23.8 million years before present [BP]). Individual basalt flows ranged in thickness from a few millimeters to as much as 300 feet. Where significant time elapsed between successive flows, interflow zones developed. The interflow zones are characterized by the presence of highly weathered basalt and paleosols. These interflow zones are generally significantly weaker than the surrounding basalt and sometimes form basal failure surfaces for large landslide complexes.

Above the basalts are a variety of younger volcanic rocks and sedimentary materials that range from Pliocene (1.8 to 5.3 million years BP) to Holocene (less than 10,000 years BP). Sedimentary rocks are generally thought to underlie the basalts.

Individual geologic units in the general area are primarily Underwood Mountain Basalt., as described in Section 3.1 of the Application for Site Certification (Appendix A). Near-surface rock consists of yellow-gray volcanoclastic rocks, medium to dark gray, fine-grained to medium-grained basalt and andesite, which is fractured into angular gravels, cobbles, and boulders.

Regional geologic maps indicate the presence of Quaternary-age mass wasting landslide deposits located north of Underwood Mountain (Figure 3.1-2). These deposits are mapped as a large landslide, estimated to be approximately 1/3 square mile in area and almost a mile long. However, based on field work conducted in 2007, there is no obvious evidence to suggest the presence of a landslide as mapped on the 1:100,000 scale geologic map. If landslide deposits are present, they have been exposed long enough that most or all of the geomorphic evidence has been removed by erosion.

Comment: Just because there is "no obvious evidence to suggest the presence of landslides" does not mean that the landslide does not exist or that mass wasting is not a definite possibility. What is mass wasting? A Wisconsin geology class syllabus defines mass wasting as follows: "Mass-wasting processes: Mass-wasting processes such as creep, landslides, and debris flows are distinguished from each other in part by whether they occur rapidly or slowly. Landslides are capable of transporting massive amounts of rock and soil downslope for miles in very short periods (e.g. minutes). Creep can also transport much material, but at rates of only millimeters per year. Both are important erosional processes. Rapid mass wasting events such as massive landslides or debris flows are typically triggered by events that destabilize material that resides on steep slopes. Such events include earthquakes, volcanic eruptions, rain or melting snow, and poorly planned landscape alterations by humans (e.g. road cuts or developments that require the removal of material at the bases of slopes)." [Source:http://www.geology.wisc.edu/courses/g112/mass_wasting.html] Hmm, "landscape alterations"? I'm thinking that putting hundreds of tons of whirling propellers on top of impermeable surfaces in a steep-sloped area subject to wind and water erosion is probably not a well-thought out proposal.

3.1.1.3 Local Geology and Soils
Geology

The proposed project site is located within the northern boundary of the Hood River Valley, which extends a few miles into southern Washington. In general, the geology of the area consists of basalt flows extruded from local vents, layered with conglomerate, tuff, tuff breccias, and other volcanoclastic deposits (Figure 3.1-2).

The bedrock underlying the proposed project site consists of Grande Ronde Basalt of the

Columbia River Basalt Group and Quaternary basalt of Underwood Mountain—a shield volcano that lies approximately midway between the lower reaches of the Little White Salmon and White Salmon Rivers. Its southern slopes drain to the Columbia River.

In the project area, these basalt formations are typically overlain by silt and clay soil of varying thickness. Unconsolidated deposits are thin to absent with surface materials consisting primarily of a veneer of brown, silty topsoil that is likely derived from forest duff and wind-blown deposits. The thickness of this material varies across the site from a few inches to three feet. In several areas, bedrock and talus can be observed at the ground surface.

3-3

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Site Geology Source: Korosec, 1987.
Figure 3.1-2

Soils

Soil Types. Figure 3.1-3 shows soils in the project area. The Natural Resources Conservation Service (NRCS) describes the soils in the project vicinity as follows (USDA NRCS 2003):

• McElroy Series. The McElroy series consists of very deep soils (up to 5 feet) formed in colluvium and residuum from basalt with a mantle of volcanic ash that influences soils in the top 9 to 13 inches. The soils exist on the footslopes and backslopes of mountains on slopes from 5 to 90 percent at elevations from 400 to 2,600 feet in eastern Skamania County and western Klickitat County. McElroy Soils are well drained with medium to rapid runoff and moderate permeability. The series was established in 1981 following the introduction of volcanic ash from the eruption of Mt. St. Helens.

• Timberhead Series. The Timberhead series consists of very deep soils (up to 5 feet) formed in residuum and colluvium from basalt mixed with volcanic ash. The soils exist on mountain ridges between 5 and 30 percent at elevations from 2,000 to 3,600 feet in Skamania County and western Klickitat County. Timberhead Series soils are well drained with medium to rapid runoff and moderately high to high permeability.

• Underwood Series. The Underwood series consists of very deep soils (5 feet or more) formed in residuum and colluvium from basalt and andesite with a thin mantle of volcanic ash. The soils exist on benches, backslopes, and footslopes of mountains with slopes between 2 and 50 percent at elevations between 500 and 2,700 feet in southeast Skamania County and west Klickitat County. Underwood Series soils are well drained with slow to medium runoff and moderately high permeability.

• Undusk Series. The Undusk series consists of very deep soils (5 feet or more) formed in residuum and colluvium from basalt and andesite with a thin mantle of volcanic ash. The soils exist on benches, backslopes, and footslopes of mountains with slopes between 5 and 65 percent

at elevations between 2,000 and 2,800 feet in southeast Skamania County and west Klickitat County. Undusk Series soils are well drained with slow to medium runoff and moderately high permeability. Based on the current test pits and field observations, the site soil is best represented as Soil Site Class D (stiff soils). Rock with varying strength and weathering characteristics was encountered at depths ranging from 3 to 12 feet bgs.

Soil Erosion Potential. Erosion is the breakdown and transport of soils and bedrock by natural processes, including water, wind, and glaciation. The susceptibility of any material to erosion depends on chemical and physical characteristics; topography; the amount and intensity of precipitation and surface water; the intensity of wind; and the type and density of vegetative ground cover, if present.

Erosion potential was assessed for the Application for Site Certification, principally based on the erosion potential specified for surficial soils by the NRCS. These erosion factors indicate that the Underwood loam has a high potential for erosion by water and the McElroy, Timberhead, and Undusk units have a medium potential, with the remaining soil types having a low potential. Most soils found in the site vicinity are classified as having a low susceptibility to wind erosion.

3-5

33758687_108.cdr 33758687_108.cdr
Figure 3.1-3

Data Source: USDA NRCS, Skamania County Area, Washington, Soil Survey - Wa659. Soil Classifications

3.1.1.4 Geologic Hazards
Earthquakes

Earthquakes are the result of sudden releases of built-up stress within the tectonic plates that make up the earth's surface. Stress accumulates where movement between plates or on faults produces friction. No faults are mapped within the footprint of the proposed project area. However, faults are mapped approximately 1.5 miles to the southwest and northeast. (Pezzopane 1993 and Geomatrix 1995) Many of these faults are inferred, and shown as dotted lines buried by younger surficial deposits. While the activity of the area faults is unknown, a review of aerial photography showed no indication of recent movement along the trace of the inferred faults.

Comment: "A review of aerial photography is NOT doing geology!! This is a totally inadequate geologic analysis. "Inferred" faults shown as dotted lines (!!) does not mean that there are NOT buried, sub-surface, wide-ranging faults. Ridges have fault lines. I will comment further on the soils issue in a separate memo.

There have been no surface-rupture earthquakes on any fault within northwestern Oregon or southwestern Washington in historic times, and investigations of the regional faults have been limited.

According to the updated National Seismic Hazard Maps published by the US Geological Survey (USGS) in 2008 (Petersen et al. 2008 and USGS 2009), the peak ground acceleration estimated for the area of the Whistling Ridge site is 0.18g for a 475-year return period earthquake (i.e., ground motion with a 10 percent chance of being exceeded in 50 years) and 0.40g for a 2,475year return period earthquake (i.e., ground motion with a 2 percent chance of being exceeded in 50 years).

Large earthquakes at more distant faults could cause prolonged ground movement at the project site. Information on historic large earthquakes can be found in the Application for Site Certification Section 3.1 (Appendix A).

Comment: What does "large earthquakes at more distant faults could cause prolonged ground movement at the project site" actually mean? Does that mean that there will be earth movement downhill? Mass wasting? Does this mean that people and wildlife will be affected? How will they be affected? Does this mean that people would have to leave their homes? Are there evacuation routes? Would there be loss of life and property involved in "prolonged ground movement"? These questions are not answered in the DEIS.

Landslides

As part of the Application for Site Certification, a preliminary landslide hazard evaluation of the project site was conducted by a licensed geologist pursuant to Skamania County Code (SCC) Title 21A, Chapter 21A.06 - Landslide Hazard Areas (LHAs), which are shown on Figure 3.1-4. Skamania County recognizes three classes of LHAs.

• Class I (Severe) LHAs are considered to present a severe landslide hazard and are distinguished as areas of known mappable landslide deposits that have been designated by the local legislative body.

• Class II (High) LHAs are areas with slopes between 20 and 30 percent that are underlain by soils that consist largely of silt, clay or bedrock, and all areas with slopes greater than 30 percent.

• Class III (Moderate) LHAs are areas with slopes between 20 percent and 30 percent not included in Class II.
3-7

33758687_110.cdr

Approximate Turbine
Locations
Figure 3.1-4
Job No. 33758687 Landslide Hazard Areas

The preliminary landslide hazard evaluation concluded that there do not appear to be any areas in the site that meet Skamania County's criteria for a Class I LHA. Figure 3.1-4 shows Class II LHAs in green. The Class II LHAs at the site are predominantly associated with the steep slopes

west of proposed Tower Lines A and B. There are also steep slopes to the east of the seven southernmost Tower Lines A towers, and on both sides of Tower Line C. The Class II areas are generally bordered by smaller areas of Class III.

Volcanic Eruption

The Cascade Mountains of the Pacific Northwest region contain sixteen major volcanoes, which extend from Mount Garibaldi in British Columbia to Lassen Peak in California (Harris 1988). Four of the volcanoes within Washington and Oregon have experienced activity within historic time: Mount Baker, Mount Rainier, Mount Hood, and Mount St. Helens. Mount Adams is the closest volcano to the project site, situated approximately 30 miles due north, but is not historically active. Mount St. Helens is the closest historically active volcano to the project site, situated approximately 42 miles to the northwest.

3.1.2 IMPACTS

3.1.2.1 Proposed Action
Construction

Construction would involve approximately 108 acres of earth-disturbing activities (56 acres of permanent disturbance and 52 acres of temporary disturbance). Activities that would involve earth disturbance include tree harvesting in areas not already cleared; constructing roads and turbine crane pads; constructing foundations for turbine and meteorological towers; trenching for underground utilities; clearing and grading for the substation placement; and clearing and excavating for the foundation for the Operations and Maintenance facility at either of the two alternative locations. Approximately 50 percent of excavated soils are anticipated to be too large for re-use as backfill at foundations. Based on preliminary calculations and depending on the type of foundation design used, approximately 20 cubic yards of excavated soil would remain from each turbine foundation excavation.

Comment: How many truckloads of haul material does all this excavation involve? What will be the impacts on our roads and byways? Will public money have to be used to re-pave or re-construct these roads after all this heavy traffic? Where will all the haul material go?

Roadway improvements would be necessary to accommodate the heavy and long loads associated with the turbine towers. Improvements would be made to approximately 7.9 miles of existing roads, and 2.4 miles of new road would be built. Most of these improvements would be made on the project site, with the exception of off-site improvements to West Pit Road. For areas with steep slopes, it may be necessary to flatten and rebuild the slopes to allow access for the long loads required. Some steep sections of existing or new roads may be graded to create shallower grades, and some tight-radius turns may require localized rerouting of existing roads. West Pit Road would require permanent widening to accommodate long loads. Widening could include removal of trees and other vegetation, along with engineered cut and fill sections (cut and fill volumes will be calculated during final design). The road would not require paving, but would require an all-weather driving surface.

The primary impacts during construction would be potential for erosion, landslides, soil compaction and changes to topography.

Comment: "The primary impacts during construction would be potential for erosion, landslides, soil compaction and changes to topography." IS THAT ALL?!? As the WA State Department of Transportation learned during its rock removal along Highway 14 during the summer of 2010, in Skamania County, when they started an unintended landslide, there is always the very high potential that once you start moving earth, earth does what it wants to and moves where it wills!

3-9

Soils

Because some surface soils on the project site are moderately susceptible to erosion, there is some potential for adverse impacts on the site soil in areas of steep topography during grading and foundation construction, as shown on Figure 2.15-1, Landslide Hazard Classifications, in Section 2.15 of the Application for Site Certification (Appendix A).

Topography

Changes to the topography would include grading turbine foundations and access roads. The changes to topography would be minor to moderate depending on location.

Erosion

The potential for erosion or aggradation would be greatest during the construction process. The NRCS classifies surficial soils at the site as generally having medium erosion potential. During the dry season, soils that are disturbed and stripped of vegetative cover may be susceptible to wind erosion. The potential for erosion by wind and water would be minimized through the use of best management practices (BMPs).

Comment: As far as I could find, the DEIS does not list what these Best Management Practices (BMPS) are. They should be listed, so we could evaluate if they are adequate for this project which proposes to move a lot of earth and has a high potential for erosion and land movement.

Operation

Once the project is constructed, the primary risks would be associated with earthquakes, volcanic activity, and landslides.

Earthquakes

Liquefaction. Liquefaction is a phenomenon whereby soils undergo significant loss of strength and stiffness when they are subjected to vibration or large cyclic ground motions produced by

earthquakes. Saturated soils without cohesive fines (i.e., gravels, sands, and silts) are most susceptible to liquefaction. Other factors affecting the potential for liquefaction in soils are density, amplitude of loading, confining pressure, past stress history, age of soil deposit, the size, shape and gradation of particles, and the soil fabric structure. In earthquakes, liquefaction-induced ground settlement and lateral spreading have been the primary cause for extensive damage to aboveground structures, foundations, and pipelines.

Field investigation concluded that the potential for liquefaction is very low at this site. Test pits excavated at the project site encountered shallow bedrock covered with a combination of cohesive and cohesionless soil. No groundwater was observed in any of the test pits.

Structure failure could occur with enough ground shaking even without liquefaction. However, this hazard would be mitigated by adhering to seismic building codes.

Settlement. Field investigation concluded that settlement and lateral spread induced by a seismic event would be minimal, due to the low liquefaction potential.

Surface Rupture. Surface rupture occurs when a fault breaks to the land surface during an earthquake. Surface rupture is usually associated with moderate to large earthquakes (Mw 6.5 or greater) or rarely during smaller, very shallow events. There are no mapped faults crossing the site. Therefore, the potential for primary surface rupture at the proposed project site is small.

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Volcanic Activity

Effects of volcanic activity may include lava flows, mudflows, pyroclastic flows, and ash-fall. Volcanic flows are typically limited to the flanks of the volcano and major drainage channels extending from the volcano, which for all known volcanoes in the area are located outside the project area. The largest potential impact to the site from volcanic activity would be ash carried aloft that subsequently falls to the land surface. Based on prevailing wind patterns, the USGS (Wolfe and Pierson 1995) estimates that there is between a 0.02 and 0.1 percent annual probability that there would be 4 inches (10 cm) or more of ash deposited at the site from eruptions throughout the Cascade Range (Figure 2.15-2 in the Application for Site Certification).

Landslides

The landslide evaluation conducted for the Application for Site Certification concluded that the project could be constructed and operated without danger to human life or the surrounding environment due to landslide hazards.

Although none of the proposed turbines are located within Class II LHAs, several of the towers along the western side of the project site (Tower Lines A and B) are located along ridgelines with descending slopes that are locally greater than 35 degrees (70 percent). Based on studies conducted for the Application for Site Certification, it appears that the primary concern for towers located adjacent to the Class II LHAs is the potential for headward erosion of the steep

drainages by debris or earth flow processes. Erosion rates of these drainages are unknown, but no obvious recent mass wasting features were observed in the aerial photos or during the site reconnaissance. Further subsurface investigation in support of final tower foundation design would help determine if there are weak rock or soil layers that could contribute to more deep-seated failure of the ridges and provide information on the quality of the rock underlying the ridgelines.

Comment: So, we are to gather from the above statement that "further subsurface investigation" has NOT been done, there is NOT a "final tower foundation design that would help determine if there are weak rock or soil layers that could contribute to deep-seated failure of the ridges"?!? And, that this LACK of a final tower foundation design could "provide information on the quality of rock underlying the ridgelines"? Well, I'm confused. Isn't this DEIS supposed to provide all this information so that a thoughtful, science-based decision can be made by EFSEC and the involved public as to whether this project should even go on? This LACK of information is critical and should be provided in the DEIS.

Class III LHAs were delineated adjacent to proposed wind turbines along the southern Tower Line A and along Tower Line C. Class III LHAs are not anticipated to have any impact on the proposed facilities due to the robust nature of the proposed foundation designs.

Project Decommissioning

In compliance with WAC 463-72, Site Restoration and Preservation, the Applicant will provide EFSEC with an initial site restoration plan at least ninety days prior to the beginning of site preparation. The plan will address site restoration that would occur at the conclusion of the project's operating life (estimated to be 30 years), and restoration in the event the project is suspended or terminated during construction or before it has completed its useful operating life. The plan will include or parallel a decommissioning plan for the project.

Comment: The initial site restoration plan and the decommissioning plan SHOULD be part of the DEIS and SHOULD also be included in the FEIS. We should all be able to evaluate all of SDS's and the BPA's plans for this proposal, NOW not later, especially if "the initial site restoration plan will...identify, evaluate, and resolve all major environmental and public health and safety issues...including potential changes to soils, topography, or erosion...impacts to earth...mitigation measure...". All of these issues should be addressed in the DEIS and these plans should be available for public comment and input NOW.

The initial site restoration plan will be prepared in sufficient detail to identify, evaluate, and resolve all major environmental and public health and safety issues presently anticipated, including potential changes to soils, topography, or erosion. If impacts to earth are anticipated to occur as a result of site restoration and project decommissioning, mitigation measures will be proposed as part of the plan.

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3.1.2.2 No Action Alternative

Under the No Action Alternative, no structures would be built and there would be no road construction or improvement. Potential impacts to the site from geologic hazards would continue as under present conditions. Some potential for erosion could continue from ongoing logging activity, as mitigated by Washington State requirements and BMPs.

3.1.3 MITIGATION MEASURES

The following mitigation measures are identified to avoid, minimize, and compensate for potential impacts of the proposed project related to geology, soils, topography, and geologic hazards.

• Prior to project construction, confirm subsurface soil and rock types and strength properties through a detailed geotechnical investigation of the specific locations of all wind project elements, including wind turbines, access roads, underground trenching corridors, electrical grounding systems, and the substation and Operations and Maintenance facility locations.

• If detailed geotechnical investigations indicate potential for slope instability at project facilities, ensure that design of these facilities included proper engineering to account for this risk or relocate the facilities on-site to avoid this risk.

• Prepare and implement a Stormwater Pollution Prevention Plan (SWPPP), Erosion and Sedimentation Control Plan, and Environmental Protection Control Plan to lessen soil erosion and improve water quality of stormwater run-off through stabilization practices, structural practices, and stormwater management. These Plans would be developed and approved by EFSEC prior to construction or modification of any roads or facilities.

• Build all structures on the site in accordance with the seismic design provisions of the 2006 version of the International Building Code, and the American Society of Civil Engineers 07-05 standard. Foundations and buildings would be designed for Seismic Zone 2, and the values listed in Table 3.1-1 would be used for seismic design of the project in accordance with Section 1613.5.3 of the 2006 International Building Code. The occupancy category of the proposed structure is assumed III as per Section 1613.5.6 of the 2006 International Building Code.

Comment: All of the above should be part of the DEIS now, not later. These are all valid questions that should be answered PRIOR to the start of any construction or earth movement. Once a proposal is approved, then the proponent can almost do anything to make sure that it gets done. We should use the PRECAUTIONARY PRINCIPLE and know all the details and facts that it is possible to know PRIOR to any construction and excavation. The detailed geotechnical investigation; ensuring that design of these facilities includes proper engineering; [possible] relocation of the facilities; the Stormwater Pollution Prevention Plan (SWPPP), Erosion and Sedimentation Control Plan, and Environmental Protection Control Plan; and, the seismic design provisions should all be part and parcel of the DEIS, not done after the fact when the public has no recourse for further input and comment.

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Table 3.1-1
2006 International Building Code Seismic Design Values

Parameter Value 2006 IBC/ASCE 7-05 Reference
Soil Profile Site Class C Table 1613.5.2
0.2 Second Spectral Acceleration Ss 0.60 g Figure 1613.5 (1)
1.0 Second Spectral Acceleration Sl 0.20 g Figure 1613.5 (2)
Peak Ground Acceleration (0.4SDs) 0.186 g ASCE 7-05 equation 11.4-5
Site Coefficient Fa 1.16 Table 1613.5.3 (1)
Site Coefficient Fv 1.6 Table 1613.5.3 (2)
Seismic Design Category a D Tables 1613.5.6 (1) & (2)

ASCE – American Society of Civil Engineers
IBC – International Building Code

a. Assumes Seismic Use Group III

• Conduct a visual inspection of project facilities following any abnormal seismic activity. These inspections would look for signs of incipient mass movement in areas identified as potentially susceptible to such failures.

• Implement all stormwater pollution prevention activities prior to any clearing and site preparation. Measures would include installation of a stabilized construction entrance, wheel wash, silt fences, hay bales, temporary and/or permanent water conveyance systems, and installation of temporary and/or permanent retention ponds. Dust would be controlled as needed by spraying water on dry, exposed soil.

• Limit clearing, excavation and grading to those areas of the project site absolutely necessary for construction of the project. Areas outside the construction limits would be marked in the field and equipment would not be allowed to enter these areas or to disturb existing vegetation.

• Inspect any installed run-off and erosion control structures at a frequency sufficient to provide adequate environmental protection. Such inspections would increase in frequency during rainfall periods.

• Store additional erosion control supplies, including sandbags and channel-lining materials, on site for emergency use.

• Divert surface runoff around and away from cut and fill slopes using pipes and/or protected channels. If the runoff is from disturbed areas, it would be directed to a sediment trap prior to discharge.

• Construct all project roads to be gravel surfaced with a low profile. Road construction would be performed in multiple passes starting with the rough grading and leveling of the roadway areas,

if necessary. Once rough grade is achieved, a fabric layer would be installed, base rock would be trucked in, spread and compacted to create a road base. A capping rock would then be spread over the road base and roll-compacted to finished grade.

3-13

• Spread soil and rock that is excavated through grading across the site to the natural grade and reseed with native grasses or seeds to control erosion by water and wind.

• Crush larger cobbles into smaller rock for use as backfill or road material or dispose of off site. Those materials that cannot be reused on site would be disposed of in accordance with Skamania County and Ecology regulations for clean fill materials.

3.1.4 UNAVOIDABLE ADVERSE IMPACTS

The primary unavoidable impacts are the potential for landslide and erosion. Both can be mitigated through appropriate design and the application of mitigation measures, but some erosion would nonetheless occur.

3.1.5 REFERENCES

Geomatrix Consultants (Geomatrix). 1995. Seismic design mapping for the State of Oregon. Unpublished final report prepared for the Oregon Department of Transportation.

Harris, S.L. 1988 Fire and Ice: The Cascade Volcanoes. The Mountaineers and Pacific Search Press. Seattle, Washington.

Petersen, M.D., A.D. Frankel, S.C. Harmsen, C.S. Mueller, K.M. Haller, R.L. Wheeler, R.L.

Wesson, Y. Zeng, O.S. Boyd, D.M. Perkins, N. Luco, E.H. Field, C.J. Wills, and K.S.

Rukstales. 2008. Documentation for the 2008 Update of the United States National

Seismic Hazard Maps. USGS Open-File Report 2008-1128.

Pezzopane, S.K. 1993. Active faults and earthquake ground motions in Oregon. Ph.D. Thesis,University of Oregon, 208 p.

United States Department of Agriculture Natural Resources Conservation Service (USDA NRCS). 2003. Skamania County Area, Washington, Soil Survey - WA659.

US Geological Survey (USGS). 2009. Siesmic Hazard Maps and Data. Accessed at: http://earthquake.usgs.gov/research/hazmaps/.

Wolfe, E.W. and T.C. Pierson. 1995. Volcanic-Hazard Zonation for Mount St. Helens, Washington. USGS I 95-497.

3.2 AIR QUALITY

This section describes the existing air quality conditions in the project area, the potential for impacts to air quality from the proposed project, and mitigation measures designed to avoid or minimize those impacts.

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3.2.1 AFFECTED ENVIRONMENT
Regulatory Overview

The Clean Air Act (CAA) is the primary federal statue governing air quality. The CAA establishes National Ambient Air Quality Standards for six "criteria pollutants," and local agencies may establish Ambient Air Quality Standards themselves, provided that these are at least as strict as federal standards. Local air quality is measured against these national and state standards, and areas that do not meet the standards are designated as "non-attainment" areas. Skamania County does not have any non-attainment areas for air quality1.

Comment: Just because the DEIS states that "Skamania County does not have any non-attainment areas for air quality" does not mean that the air quality in the Columbia River Gorge is good. The OR Department of Environmental Quality and the SW Clean Air Agency have been working for many years on the issue of increasing haze and air quality in the Gorge; they have written very large documents about this issue. Neither agency has had the political will or incentive to actually do anything about the issue. There are air pollution issues in the Gorge and the surrounding environments. Most people who reside in the area or swim in the Columbia River will tell you that they have noticed a degradation of the air and water quality. These issues have not been adequately addressed by any government agency, to date. Which does not mean that air [or water] quality of the Gorge is good or bad, from a science viewpoint. It means that it needs to be thoroughly investigated and analyzed. The DEIS fails to do any adequate air [or water] cumulative impacts analyses.

New stationary sources of air emissions in nonattainment areas must undergo more rigorous permitting than equivalently sized sources in attainment areas, in an effort to bring the nonattainment area back into compliance with the air quality standards. The state of Washington has established rules through Ecology for permitting new sources in both attainment and nonattainment areas of the state, and additional requirements may be imposed by local air authorities. EFSEC issues authorizations for air emissions for sources under its jurisdiction. In general, if potential emissions from stationary sources exceed certain thresholds, approval from the appropriate permitting authority is required before beginning construction.

Under the CAA, new industrial sources of air pollution must receive an air quality permit prior to operation. The two most common permits associated with industrial activity emitting regulated air pollutants are Notice of Construction (NOC)/New Source Review approvals and Prevention of Significant Deterioration (PSD) permits. WAC Chapters 463-39 and 173-400 establish the requirements for review and issuance of NOC approvals for new sources of air emissions under

EFSEC jurisdiction. PSD regulations apply to proposed new or modified "major" sources located in an attainment area that have the potential to emit criteria pollutants in excess of predetermined de minimus values (40 Code of Federal Regulations [CFR] Part 51). For new generation facilities, these values are 100 tons per year of criteria pollutants for 28 specific source categories, or 250 tons per year for sources not included in the 28 categories.

The Project is not required to go through these permitting processes. A NOC is not required for the proposed project because there would be no permanent sources of regulated air emissions, and no backup generation or spinning reserves would be required as part of the proposed project. A PSD permit would not be required; the generation of electricity with wind turbines does not produce air emissions because no fuel is being burned to produce energy.

Comment: Although this proposed wind farm project itself does not, allegedly, have any "permanent sources of regulated air emission, and no backup generation," it does not mean that there are no cumulative impacts on air emissions, because this project is included in BPA's energy production grid and BPA's energy production DOES have CUMULATIVE IMPACTS on REGIONAL AIR QUALITY. It is widely known that X amount of wind energy production requires Y amount of gas plant back-up capability because wind energy is notoriously unreliable and BPA cannot have unreliable sources of energy in the grid. It creates havoc among users and I'm pretty sure it negatively affects BPA's machinery. The effects of wind power on the grid and on the actual BPA hard infrastructure is not addressed in the DEIS and it should be. The public should be aware if there are any dangers associated with the influx of large amounts of energy from wind farms into the energy grid and if the grid can reliably balance this energy influx without hardware meltdowns. BPA should have addressed these issues in the DEIS and their failure to do so is just another fatal flaw in this fatally flawed DEIS.

Although construction emissions are not included in permitting of stationary sources, mobile sources (such as construction equipment and maintenance pickups) are regulated separately under the federal CAA. In addition, Washington State also regulates emissions generated by various construction activities. According to WAC 173-400-300, fugitive air emissions are emissions that "do not and which could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening." These emissions include fugitive dust from unpaved roads, construction sites, and tilled land. Fugitive emissions are considered in determining the level of air permitting required only for a certain subset of sources, not including wind power

1 See: http://www.ecy.wa.gov/programs/air/other/namaps/web_map_intro.htm.

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projects. However, pursuant to WAC 173-400-040(8)(a), "The owner or operator of a source of fugitive dust shall take reasonable precautions to prevent fugitive dust from becoming airborne and shall maintain and operate the source to minimize emissions."

Other Washington state regulations that apply to nuisance emissions, including fugitive dust, and various equipment used during construction include the following:

• WAC 173-400-040(2) Fallout states that no person shall cause or allow the emission of particulate matter from any source to be deposited beyond the property under direct control of the owner or operator of the source in sufficient quantity to interfere unreasonably with the use and enjoyment of the property upon which the material is deposited.

• WAC 173-400-040(3–3a) Fugitive emissions states that the owner or operator of any emissions unit engaging in materials handling, construction, demolition, or other operation which is a source of fugitive emissions, if located in an attainment area and not impacting any non-attainment area, shall take reasonable precautions to prevent the release of air contaminants from the operation.

• WAC 173-400-040(4) Odors states that any person who shall cause or allow the generation of any odor from any source that may unreasonably interfere with any other property owner's use and enjoyment of his property must use recognized good practice and procedures to reduce these odors to a reasonable minimum.

• WAC 173-400-040(8a) Fugitive dust states that the owner or operator of a source of fugitive dust shall take reasonable precautions to prevent fugitive dust from becoming airborne and shall maintain and operate the source to minimize emissions.

• WAC 173-400-035 Portable and Temporary Sources states that for portable sources that locate temporarily at particular sites, such as rock crushers and batch plants, the owner(s) or operator(s) shall be allowed to operate at the temporary location providing that the owner(s) or operator(s) notifies Ecology or the local air quality authority of the intent to operate at the new location at least 30 days prior to starting the operation, and supplies sufficient information to enable Ecology or the local air quality authority to determine that the operation will comply with the emissions standards for a new source, and will not cause a violation of applicable Ambient Air Quality Standards and, if in a non-attainment area, will not interfere with scheduled attainment of ambient standards. The permission to operate shall be for a limited period of time (one year or less) and Ecology or the local air quality authority may set specific conditions for operation during that period. A temporary source shall be required to comply with all applicable emission standards.

Greenhouse Gases

Greenhouse gases are gases that trap heat in the atmosphere, and are implicated in potential global climate change. Some greenhouse gases such as carbon dioxide occur through both natural processes and human activities. Other greenhouse gases (e.g., fluorinated gases) are created and emitted solely through human activities. The most abundant greenhouse gasses are

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water vapor, carbon dioxide, methane, nitrous oxide, ozone and chlorofluorocarbons2. However, because different gasses have different heat-trapping effects, the most abundant greenhouse gasses are not necessarily the largest contributors to potential climate change.

Greenhouse gases are discussed in this section because in the United States, energy-related activities account for 75 percent of human-generated greenhouse gas emissions, mostly in the form of carbon dioxide emissions from burning fossil fuels. Half of all emissions from energy-related activities come from large stationary sources such as power plants (USEPA 2009).

Largely because of the contribution of hydropower, energy generation in the Pacific Northwest, including the Federal Columbia River Power System, produces less carbon dioxide per MW-hour than any other region in the United States. The Federal Columbia River Power System alone produces about 7,000 average MW of hydro-electricity even in a dry water year, enabling the region to sustain its relatively small carbon footprint.

Comment: "Half of all emissions from energy-related activities come from large stationary sources such as power plants" is not a reassuring statement. Half means 50 per cent, that is 50%. This is not a small amount. The DEIS does not state, as far as I was able to ascertain, how much BPA contributes to greenhouse gases through its entire energy production process. How many power plants back up BPA's hydro-energy production when there is not enough water, or fish protections prohibit BPA from dumping water over the dam? What is BPA's calculated carbon footprint? Why didn't BPA calculate its total carbon footprint for the DEIS? This is another fatal flaw in this document. The statement that hydropower "produces less carbon dioxide per MW-hour than any other region in the United States" is NOT a conclusive statement about BPA's or the wind farms' total cumulative contribution to greenhouse gases! LESS does not mean that BPA and Whistling Ridge and all the other energy production facilities in the region do not contribute CO2 to the total footprint. BPA needs to calculate its cumulative carbon footprint from ALL its energy production facilities and processes. Then we can start to talk about carbon footprints.

Like hydropower, production of electricity from wind produces no direct emissions of greenhouse gasses or other air pollutants. The generation of wind energy also displaces generation from individual fossil-fuel-fired power plants or units, thereby reducing fuel consumption and the resulting air emissions that would have otherwise occurred.

Comment: The statement "production of electricity from wind produces no direct emissions of greenhouse gasses or other air pollutant" is specious. The DEIS does not provide any details on what huge propeller-like blades do to the air and what, if any, gasses are produced by the machinery that is used to run the wind towers. The DEIS does not provide any details on how many gas plants are used by BPA to manage the flexibility and balance of the influx of unreliable wind power generated by all the wind farms producing energy and trying to get it onto our energy grid. If the capability of the hydro system to incorporate wind power will be fully utilized in a couple of years, as the NW Energy Council has stated, then the option to use existing gas-fired power plants, unidentified in the DEIS, would be used to integrate wind more fully into the energy grid. Where are these plants located? How much CO2 do they produce? What is their carbon footprint? What if global climate change negatively affects the winds that are now powering some of these wind farms, will more and more gas-fired plants have to be brought online, thus eliminating any benefits that may accrue to wind power? Where is BPA's Wind Integration documentation? If, as the NW Energy Council states, we

can achieve 85% of load growth can be met, through the use of technologically proven efficiencies in our homes, commercial spaces, lighting, etc., then why do we need so many wind farms and gas plants that degrade our environment and our quality of life? These questions need to be answered in the DEIS. The NW Energy Council sees conservation and "improved efficiency of electric use" as the best choice for the region. See the Sixth NW Electric Power and Conservation Plan Overview, below, put out by the NW Energy Council:

Sixth Northwest Conservation and Electric Power Plan

Sixth Power Plan Overview

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SUMMARY

The Pacific Northwest power system is faced with significant uncertainties about the direction and form of climate change policy, future fuel prices, salmon recovery actions, economic growth, and integrating rapidly growing amounts of variable wind generation. And yet the focus of the Council's power plan is clear, especially with regard to the important near-term actions.

The Council's power plan addresses the risks these uncertainties pose for the region's electricity future and seeks an electrical resource strategy that minimizes the expected cost of, and risks to, the regional power system over the next 20 years. Across multiple scenarios considered in the development of the plan, one conclusion was constant: the most cost-effective and least risky resource for the region is improved efficiency of electricity use.

In each of its power plans, the Council has found substantial amounts of conservation to be cheaper and more sustainable than most other types of generation. In this Sixth Power Plan, because of the higher costs of alternative generation sources, rapidly developing technology, and heightened concerns about global climate change, conservation holds an even larger potential for the region.

The plan finds enough conservation to be available and cost-effective to meet 85 percent of the region's load growth for the next 20 years. If developed aggressively, this conservation, combined with the region's past successful development of energy efficiency could constitute a resource comparable in size to the Northwest federal hydroelectric system. This efficiency resource will complement and protect the Northwest's heritage of clean and affordable power.

Aggressive pursuit of this conservation is the primary focus of the power plan's actions for the next five years. Combined with investments in renewable generation as required by state renewable portfolio standards, improved efficiency will help delay investments in more expensive and less clean forms of electricity until the direction and form of future climate change legislation becomes clearer, and alternative low-carbon energy technologies become cost-effective.

At the same time, the region cannot stand still in maintaining and improving the reliability of its power system. Investments to add transmission capability and improve operational agreements are important for the region, both to access growing site-based renewable energy and to better integrate it into the power system. The Council also expects that there are small-scale resources available at the local level in the form of cogeneration or renewable energy opportunities. The plan encourages investment in these resources when cost-effective.

The power plan recognizes that meeting capacity needs and providing the flexibility reserves necessary to successfully integrate growing variable generation sources may require near-term investments in generation resources to provide reliable electricity supplies in specific utility balancing areas. In addition, individual utilities have varying degrees of access to electricity markets and varying resource needs. The Council's regional power plan is not necessarily a plan for every individual utility in the region, but is intended to provide guidance to the region on the types of resources that should be considered and their priority of development.

The near-term actions recommended in the Council's Sixth Power Plan are important, but the region cannot neglect longer-term needs. The plan encourages research in advanced technologies for the long-term development of the power system. For example, emerging smart-grid technologies could make it possible for consumers to help balance supply and demand. By providing information and tools to consumers to adjust electricity use in response to available supplies and costs, the capacity and flexibility of the power system would be enhanced. Smart-grid development also may facilitate the deployment of plug-in hybrid electric vehicles that work in concert with the power system to improve the use of available generating capacity and help reduce carbon emissions in the transportation sector. In general, these technologies offer the potential to fundamentally change the power system while improving its efficiency and reliability. Developing these technologies is a long-term process that will require many years to reach full potential, but the region can facilitate progress through research, development, and demonstration of the technologies.

Along with the smart grid, other technologies may be able to provide power when it is needed with low cost, low risk, and low emissions. In the future, the region may find greater value in power generated by geothermal resources, ocean waves, tides, gasified coal with carbon sequestration, advanced nuclear, or currently unknown technologies. New methods to store electric power, such as pumped storage or advanced battery technologies may enhance the value of existing variable generation like wind. Given the uncertainties of the future, the region should not concentrate on any one potential future solution to its power supply, but should explore a diversity of potential sources of future energy generation and conservation.

FUTURE REGIONAL ELECTRICITY NEEDS

The Pacific Northwest is expected to develop and expand over the next 20 years. Regional population is likely to increase from 12.7 million in 2007 to 16.7 million by 2030. This four million increase compares to a 3.8 million increase between 1985 and 2007. The population growth will be focused on older age categories as the baby boom generation reaches retirement age. While the total regional population is projected to increase by over 28 percent, the population over age 65 is expected to nearly double. Such a large shift in the age distribution of the population will change consumption patterns and electricity uses. Some possible effects could include increased health care, more retirement and elder care facilities, more leisure activities and travel, and smaller-sized homes.

The cost of energy (natural gas, oil, electricity) is expected to be significantly higher than during the 1980s and 1990s. Although these prices have decreased significantly since the summer of

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2008, a significant portion of the reductions are likely due to the effects of the current economic recession. Natural gas prices have also been affected by the recent growth of production from nonconventional natural gas supplies. The technology to retrieve these supplies cost-effectively has only developed recently and has improved expectations of adequate future supplies. Nevertheless, the cost of finding and producing these supplies is higher than for conventional supplies, which increases the estimated future price trend for natural gas.

If carbon emissions taxes or cap-and-trade policies are implemented, energy costs are likely to increase. Some of the planning scenarios used to develop this plan include a wide range of possible carbon mitigation costs from zero to $100 per ton. The expected average prices in this range start at zero and increase over time to $47 per ton of CO2 emissions by 2030. Carbon costs can have a significant impact on electricity costs and prices to consumers. While higher prices reduce demand, they also stimulate new sources of supply and efficiency and make more efficiency measures cost-effective.

Electricity load (before accounting for new conservation) is expected to grow by about 7,000 average megawatts between 2009 and 2030, growing at about 335 average megawatts, or 1.4 percent, per year. Residential and commercial sector electricity use account for much of the growth in demand. Contributing to the growth in the residential sector is an anticipated increase in air conditioning and consumer electronics. Also, summer peak electricity use is expected to grow more rapidly than annual energy. All of this growth in energy demand must be met by a combination of existing resources, more efficient use of electricity, and new generation. An important change for the Sixth Power Plan is that electricity needs in the future can no longer be adequately addressed by evaluating only average annual energy requirements. In the future, resource needs must also consider capacity to meet peak load and the flexibility to provide within-hour, load-following, and regulation services. The requirements for within-hour flexibility reserves have increased because of the growing amount of variable wind generation located in the region.

RESOURCE STRATEGY

The Council's resource strategy for the Sixth Power Plan provides guidance for the Bonneville Power Administration and the region's utilities on choices that will help meet the region's growing electricity needs while also reducing the risk associated with uncertain future conditions. The strategy minimizes the cost of, and risks to, the future power system. The timing of specific resource acquisitions is not the essence of the strategy because the timing of resource needs will vary for every utility. Rather, the important message of the resource strategy lies in the nature of the resources and their priorities.

The resource strategy can be summarized in five specific recommendations:

1. Improved efficiency of electricity use is by far the lowest-cost and lowest-risk resource available to the region. Cost-effective efficiency should be developed aggressively and on a consistent basis for the foreseeable future. The Council's plan demonstrates that cost-effective efficiency improvements could on average meet 85 percent of the region's growth in energy needs over the next 20 years.

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2. Renewable resource development is required by resource portfolio standards in three of the four Northwest states. The most readily available and cost-effective renewable resource is wind power and it is being developed rapidly. Wind requires additional strategies to integrate its variable output into the power system and, in addition, it provides little capacity value for the region. The region needs to devote significant effort to expanding the supply of cost-effective renewable resources, many of which may be small scale and local in nature.

3. Remaining needs for new energy and capacity should be based on natural gas-fired generation until more attractive technologies become available. The resource strategy does not include any additional coal-fired generation to serve the region's needs. Further, the Council's plan demonstrates that meeting the Northwest power system's share of carbon reductions called for in some state, regional, and federal carbon-reduction goals will require reduced reliance on the region's existing coal plants.

4. The challenges of wind integration and the need for additional within-hour reserves initially should be addressed through improvements in system operating procedures and business practices. Changes in wind forecasting, reserve sharing among control areas, scheduling the system on a shorter time scale, and advancing dynamic scheduling can all help address wind integration and contribute to a more efficient use of existing system flexibility. The region is already making significant progress in these areas.

5. Finally, the Council's resource strategy calls for efforts to expand long-term resource alternatives. The region should demonstrate the potential of smart-grid applications to improve the operation and reliability of the regional power system and to access the

potential of consumers to provide demand response for the capacity and flexibility of the power system. The region should continue to assess new efficiency opportunities, expand the availability of cost-effective renewable energy technologies, and monitor development of carbon capture and sequestration, advanced nuclear technologies, and other low-carbon or no-carbon resources.

Efficiency

The Council's power plan includes a detailed analysis of efficiency potential in hundreds of applications. The achievable technical potential of efficiency improvements increased from the Fifth Power Plan levels due to advancing technology, reduced cost, and estimates in new areas such as efficiency in electricity distribution systems, consumer electronics, and street, parking, and exterior building lighting. In addition, the cost-effectiveness of these technologies has increased significantly because avoided costs have doubled and carbon-cost risk is several times higher than in the Fifth Power Plan. The estimated achievable potential conservation is nearly 6,000 average megawatts for measures costing under $100 per megawatt-hour. Over 4,000 average megawatts are available at a cost of less than $40 per megawatt-hour. These increased opportunities exclude future savings from efficiencies that have already been secured through building codes and appliance efficiency standards.

The plan shows that a substantial amount of the growth in electricity demand could be met by conservation. Portfolio model analysis shows that over 5,900 average megawatts of conservation are cost-effective, double the amount in the Council's Fifth Power Plan. The amount that can be

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achieved is constrained by the commercial availability of technologies, limits on the annual development rate, and an ultimate penetration rate limit of 85 percent. The amount of conservation found to be cost-effective changed very little in response to changing assumptions about carbon costs and policies. Conservation in the plan is projected to be responsible for reducing carbon emissions by 17 million tons per year by 2030, a 30 percent reduction in 2030 emissions. Failure to achieve the conservation included in the plan will increase both the cost of, and risks to, the power system and likely prevent Washington and Oregon from meeting legislated carbon-reduction goals.

Generation Alternatives

The Council analyzed a large number of alternative generating technologies. Each of these technologies is compared in terms of risk characteristics and cost with other generating technologies, efficiency improvements, and demand response. In addition, resource contributions need to be considered in terms of their energy, capacity, and flexibility characteristics.

Generating technologies that are technologically mature, meet restrictions on new plant

emissions, and are cost-effective are limited in the short to intermediate term. Wind remains the primary large-scale, cost-effective renewable generation source in the near term. However, the Council believes there likely are small-scale dispersed renewable generation alternatives that are local and site-specific. Cost-effective development of these is encouraged, even though the Council currently lacks enough information to include them explicitly in the plan. Natural gas-fired generation is also feasible and cost-effective. New coal-fired generation is difficult to site and permit, and prohibited in many states by new plant emissions standards. During the next 20 years, alternatives may develop such as carbon separation and sequestration, maturing renewable technologies, advanced nuclear generation, demand response, smart-grid technologies, and storage strategies to help provide flexibility reserves. When CO2 costs are added to the direct cost of generating alternatives, the cost of most generating resource alternatives range between $70 and $105 per megawatt-hour or higher (levelized 2006$).

New renewable generation (primarily wind) is required to meet renewable portfolio standards in Washington, Oregon, and Montana. Analysis shows that meeting RPS requirements uses most of the 5,300 megawatts of readily accessible wind potential in the region. In addition to the wind, some geothermal resources were found to be attractive. However, the amount of geothermal potential is considered quite limited. Given the risk that a carbon-pricing policy might be enacted in the future, some renewable generation is cost-effective even without renewable portfolio standards.

Natural gas-fired generation is anticipated toward the middle of the planning period. Natural gas is attractive for energy and capacity needs and provides an ability to displace coal plants in the event of high carbon costs or coal plant closures. Both combined-cycle turbines and simple-cycle turbines are included in most scenarios. Although these natural gas plants are sited and licensed in the plan, this does not occur until after the five-year action plan period. Preparing to add natural gas-fired generation helps protect against the risk of uncertain future conditions, but the generating plants are not actually completed in many of the simulated futures during the 20year planning period. The Council recognizes that individual utilities' needs and access to market resources vary. Some utilities will need additional resources in the near-term even if they

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meet their renewable portfolio standards and acquire all conservation available to their service territories.

During the last 10 years of the power plan the generating resource priorities become less clear. Given current climate change policies and concerns, new coal without carbon sequestration is unlikely. Further, any significant reduction in carbon will require reduced operations of existing coal plants. Alternatives beyond greater reliance on natural gas are typically unproven commercial technologies or alternatives that require significant new transmission investments. Long-term generating resources considered include wind developed outside the region and imported on new transmission lines, advanced nuclear, gasified coal with carbon

sequestration, and development of relatively unproven renewable resources, or ones that are currently too expensive. Natural gas is used in the plan to meet long-term needs, but the Council recognizes that other alternatives are likely to become available over time. In particular, the evolution of smart-grid technologies could significantly change the nature of future power system needs and the kinds of resource alternatives required and available.

CLIMATE CHANGE POLICY

Addressing the topic of uncertain climate policies was identified as one of the most important issues for the Sixth Power Plan. The focus of climate policy, especially for the power generation sector, will be on carbon dioxide emissions. Nationwide, carbon dioxide accounts for 85 percent of greenhouse gas emissions. Nationally, about 38 percent of carbon dioxide emissions are emitted from electricity generation, but for the Pacific Northwest the power generation share is only 23 percent because of the hydroelectric system. Analysis by others has shown that substantial and inexpensive reductions in carbon emissions can come from more efficient buildings and vehicles. More expensive reductions can come from substituting non- or reduced-carbon electricity generation such as renewable resources, natural gas, and nuclear generation, or from sequestering carbon.

Reductions in carbon emissions can be encouraged through various policy approaches, including regulatory mandates (RPS or emission standards), emissions cap-and-trade systems, emissions taxation, and efficiency improvement programs. State policy responses within the region to climate change concerns have focused on renewable energy standards and new generation emission limits. In addition, Oregon and Washington have carbon reduction targets adopted by statute. National and regional proposals have focused on cap-and-trade systems intended to reduce carbon and other greenhouse gases, although none have been implemented successfully in the region. Although carbon taxes are easier to implement than cap-and-trade systems, policy discussions have focused mainly on cap-and-trade systems.

The question for the power plan is what strategies are prudent given a future where carbon pricing policies are unclear. The Council does not take a position on any particular regional carbon reduction goal or carbon price in this power plan. The plan does recognize the uncertainty about future carbon prices and that possible carbon emission reductions are important risk issues for the regional power system. Multiple carbon reduction scenarios, including a carbon risk scenario that considers a range of future carbon prices between zero and $100 per ton provide relevant information for policy makers in the region. In general, the resource strategy in the plan will allow Washington and Oregon to meet their carbon reduction targets and constructively address the risk of uncertain future carbon policy. According to Council analysis,

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states and/or the federal government will need to take additional actions in order to achieve these targets. Potential carbon pricing plays an important role in the Council's resource strategy, with the exception of the conservation resource, which remains a key component regardless of climate change policy assumptions.

The key findings from the Council's analysis of climate change policies include the following:

• Without any carbon control policies, including existing ones, carbon emissions from the Northwest power system would continue to grow to 6 percent over 2005 levels by 2030. However, without the significant amount of conservation (which is cost-effective even without carbon policies) the growth in emissions would be far greater.
• Without additional carbon pricing policies, current policies would stabilize carbon emissions from the Northwest power system at 2005 levels, but not meet current carbon reduction goals.
• Assuming a risk of higher carbon prices, the Sixth Power Plan resource strategy has the potential to reduce average regional power system carbon emissions to 9 percent below 1990 levels, or 30 percent below 2005 levels, adjusted for normal hydro conditions.
• Significant reductions of carbon emissions from the Northwest's power system require reduced reliance on coal, which currently emits more than 85 percent of the carbon dioxide from the regional power system. A carefully coordinated retirement and replacement of half the existing coal-fired generation serving the region with conservation, renewable generation, and lower carbon-emission resources could reduce average carbon emissions to 18 percent below 1990 levels.
• To the extent that public policy raises the cost of carbon, we can expect an increase in a typical consumer's electric bill and a decrease in carbon emissions, especially when the carbon price begins to exceed $40 per ton. A fixed carbon price of $45 dollars per ton has a similar effect on carbon emissions as retiring half of the existing coal-fired generation. Both would meet current carbon reduction targets for 2020 on average, but coal retirement would provide more certainty in meeting the targets.
• Preserving the capability of existing regional hydroelectric generation will help keep power system costs and carbon emissions down. In scenarios where the capability of existing resources are reduced, whether hydroelectric or coal, the energy and capacity are largely replaced with gas-fired generation to maintain the adequacy and reliability of the power system.

CAPACITY, FLEXIBILITY, AND WIND INTEGRATION

Reliable operation of a power system requires minute-to-minute matching of electricity generation to varying electricity demand. In the Pacific Northwest, resource planners have been able to focus mostly on annual average energy requirements, leaving the minute-to-minute balancing problem to system operators. This was because, historically, the hydroelectric system had sufficient peaking capacity and flexibility to provide the needed operations as long as there was sufficient energy capability. This is changing for several reasons: growing regional

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electricity needs are reducing the share of hydroelectricity in total demand, peak load has grown faster than annual energy, the capacity and flexibility of the hydro system has been

reduced over time for fish operations, and growing amounts of variable wind generation have added to the balancing requirements of the system.

As a result, planners must now consider potential resources in terms of their energy, capacity, and flexibility contributions. The rapid growth of wind generation (which has little capacity value and increases the need for flexibility reserves) means that meeting growing peak load and flexibility reserves will require adding these capabilities to the power system. Changes can be made to the operation of the power and transmission system that will reduce flexibility reserve needs. These operational changes are expected to cost less than adding peaking generation, demand response, or flexibility storage, and they can be implemented more quickly.

FISH AND WILDLIFE PROGRAM AND THE POWER PLAN

The Columbia River Basin Fish and Wildlife Program is by statute incorporated into the Council's power plan. The fish and wildlife program guides Bonneville's efforts to mitigate the adverse effects of the Columbia River hydroelectric system on fish and wildlife. One of the roles of the power plan is to help assure reliable implementation of fish and wildlife hydrosystem operations. The Columbia River power system operators have reliably provided hydrosystem actions specified to benefit fish and wildlife (and Bonneville ratepayers have absorbed the cost of those actions) while maintaining an adequate, efficient, economic, and reliable energy supply. This is so even though the hydroelectric operations for fish and wildlife have a sizeable impact on power generation. On average, hydroelectric generation is reduced by about 1,200 average megawatts, relative to operation without any constraints for fish and wildlife. Since 1980, the power plan and the Bonneville Power Administration have addressed this impact through changes in secondary power sales and purchases, by acquiring conservation and some generating resources, by developing resource adequacy standards, and by implementing other strategies to minimize power system emergencies and events that might compromise fish operations.

In addition to operational changes, most of the direct cost and capital costs of fish and wildlife programs have been recovered through Bonneville revenues and Bonneville has absorbed the financial effects of lost generation, resulting in higher electricity prices. Bonneville estimates that the total financial effect of replacing lost hydropower capability and funding direct fish and wildlife program expenditures totals from $750 million to $900 million per year (a range affected by, among other things, water conditions and electric prices). The power system is less economical as a result of fish and wildlife program costs, but still economical in a broad affordability sense when compared to the costs of other reliable and available power supplies.

The future presents a host of uncertain changes that are sure to pose challenges for the successful integration of power system and fish and wildlife needs. These include possible new fish and wildlife requirements, increasing wind generation and other variable renewable integration needs that could require more flexibility in power system operations, conflicts between climate change policies and fish and wildlife operations, possible changes to the water supply from climate change that might make it more difficult to deliver flows for fish and meet

power needs, and possible revisions to Columbia River Treaty operations to match 21st century power, flood control, and fish needs.

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To address current operations and prepare for these additional challenges, the Council has adopted a regional adequacy standard to help ensure that events like the 2000-01 energy crisis, in which fish operations and power costs were affected, do not happen again. In addition, the Wind Integration Forum is addressing issues with integration of wind into the power system. Large swings in wind output have sometimes adversely affected hydropower and fish operations. Addressing adequacy and flexibility issues in the Sixth Power Plan will improve electricity reliability and help ensure reliable fish operations.

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Comment continued: The DEIS should have addressed the issue of Wind Integration into the power system and the aforementioned Wind Integration Forum. The statement "Large swings in wind output have sometimes adversely affected hydropower and fish operations" should be further explained in the DEIS. How large are these swings in output? Just how big is the issue of wind integration into the power grid? How much wind is too much wind? Does wind inconsistency mean more gas plant back-ups (or other types of back-ups) being used by BPA? Frankly, just because there are now some state and federal requirements to meet some made up greenhouse gas emissions number does not mean that new technologies or other methods (energy efficiencies and conservation, for example) might not change these requirements. In the rush to go "green" perhaps common sense has fallen by the wayside. Wind energy production is subsidized by taxpayer monies. It is not cheap green energy. The full cost of wind energy production should be added up and should be included in the DEIS.

State Regulation of Greenhouse Gasses

In Washington State, greenhouse gasses are regulated by RCW Chapter 80.80, which establishes goals for statewide reduction of greenhouse gas emissions. The statute aims to reduce overall greenhouse gas emissions to 1990 levels by 2020, and to 25 percent below 1990 levels by 2035. By 2050, the state intends to reduce overall emissions to fifty percent below 1990 levels. Goals also include fostering a clean energy economy by increasing the number of jobs in the clean energy sector to 25,000 by 2020, from just over 8,000 jobs in 2004. Ecology has proposed regulation (Chapter 173-441 WAC)3, which would establish an inventory of greenhouse gas emission through a mandatory greenhouse reporting rule for owners or operators of:

• A fleet of on-road motor vehicles that as a fleet emit at least 2,500 metric tons of greenhouse gases annually in the state

• A source or combination of sources that emit at least 10,000 metric tons of greenhouse gases annually in the state

Comment: The state initiative to lower greenhouse gases by 2020 through the use of renewable energy sources, while admirable, is perhaps not the only and best way to achieve reduction of greenhouse gases. Going green is not a concept carved in cement. Our ideas can evolve and we can change our minds if a better and safer ideas and technology comes along. See previous comment.

Since wind power projects would not emit greenhouse gasses during operations, these regulations are unlikely to apply to the Project.

Bonneville Power Administration Greenhouse Gas Initiatives

In 2008, BPA adopted new initiatives related to climate change, and included the issue in their strategic objectives and key agency performance targets. One of BPA's first steps was to prepare an initial climate change roadmap (BPA 2008) intended as a step toward subsequent, more

2 See: http://en.wikipedia.org/wiki/Greenhouse_gas#cite_note-kiehl197-6; accessed December 2009.

3 See: http://www.ecy.wa.gov/laws-rules/activity/wac173441.html; accessed December 2009.

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robust plans for managing greenhouse gas emissions. This document identifies near-term and long-term potential actions to meet agency targets and contribute to national and regional greenhouse gas reduction goals. As a first step in managing greenhouse gas emissions, BPA will collect data in 2009 to inventory BPA's greenhouse gas footprint, which will be reported in 2010.

Comment: Where is this document in the DEIS? I was not able to find it. This should be part of the DEIS and if it isn't then the DEIS is not adequate and should not have been rushed out for public comment. This is a crucial report on BPA's carbon footprint. One rationale for all of these regional wind farms is that they produce less CO2 than other types of energy production facilities and therefore have less of a carbon footprint. Well, we don't really know that, do we? There is nothing in the DEIS that would lead to this conclusion, at least nothing based on facts and figures. All of BPA's greenhouse gas-causing activities SHOULD be in the DEIS, so that a comparison can be made based on facts and figures.

Background Air Quality

The Dalles, Oregon is the closest city with an air monitoring station. The Oregon Department of Environmental Quality (ODEQ) reports air quality data using an air quality index based on particulate matter 2.5 micrometers diameter and smaller (PM2.5). ODEQ's 2008 report for The Dalles shows 339 days with good air quality, 25 days with moderate air quality, and no days with unhealthy air quality (ODEQ 2009).

While air quality in the project area is generally good, haze is a well-documented problem in the

Columbia Gorge and the causes are being studied by the Southwest Clean Air Agency. In a 2008 Report, the agency found that haze was largely caused by winter stagnations that trap pollutants and fog (SWCAA 2008). In the summer, winds flow predominantly from the west, transporting emissions from the Portland metropolitan area into the Gorge. Wildfires also contribute to the haze when smoke is blown into the Gorge. There is no single source that is primarily responsible for haze; however, man-made sources are important contributors (ODEQ 2008). The most significant man-made sources contributing to haze in the Gorge include:

- Power plant emissions
- Woodstoves
- Motor vehicles
- Non-road emissions (e.g. ships, trains, trucks)
- Agricultural sources of ammonia

The Skamania Fish Hatchery, located west of the project site, collected climatological data in the project site area for 1965–2005. Average temperatures ranged from a minimum of 38.2 degrees Fahrenheit to a maximum of 61.8 degrees Fahrenheit. Average precipitation was 84.06 inches, and there was an average of 9 inches of snow per year.4

3.2.2 IMPACTS

3.2.2.1 Proposed Action
The potential environmental consequences of the proposed project include those from construction and operation. Impacts to air quality would not differ between the two alternative

4 Columbia Gorge Economic Development Association, http://www.cgeda.com/environment/quclimat.shtml.

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locations for the Operations and Maintenance Facility. Potential impacts include emissions, odors and dust.

Construction

Emissions

Construction of the project would result in temporary air emissions from the following sources:

- Exhaust from the diesel construction equipment used for project site preparation (including logging), grading, excavation, and construction of on-site structures
- Exhaust from water trucks used to control construction dust emissions
- Exhaust from diesel trucks used to deliver equipment, concrete, fuel, and construction supplies to the construction site
- Exhaust from pickup trucks and diesel trucks used to transport workers and materials around the construction site and from vehicles used by workers to commute to the construction site

• Exhaust from diesel-powered welding machines, electric generators, air compressors, etc.
• Emissions from one or more portable rock crushers and one or more portable concrete batch plants, which will be used as necessary to supply the large amounts of gravel and concrete needed for the project

The primary air pollutants from diesel-powered equipment would be nitrogen oxides, hydrocarbons, carbon dioxide, particulate matter (PM) and sulfur dioxide. In addition to these, the rock crusher and batch plant(s) would produce additional PM. These emissions would be similar in nature to those produced by any construction project that involves heavy equipment and transportation of materials to the project site. These construction emissions would be temporary and would be limited to the areas adjacent to the construction site. They would not affect a substantial number of persons or persist for an extended period of time and would not result in exceedance of any air quality standards.

Comment: So, nitrogen oxides, hydrocarbons, carbon dioxide, particulate matter, and sulfur dioxide would be the primary air pollutants, plus more particulate matter produced by the rock crusher and batch plants! What quantity of each of these would be produced? How much particulate matter would go into our air and affect air quality? Where is the data and some hard numbers so that we can see what quantity of these "primary air pollutants" will be produced! Where are the cumulative impacts analyses on our regional air and water quality to see how much air and water pollution this project would contribute to our region? There is nothing here to compare, assess, and analyze. This is a DEIS deficiency.

Odors

Project construction would produce limited odors associated with exhaust from diesel equipment and vehicles, and painting the Operations and Maintenance facility, turbine towers, and other structures. The effect of odors would be temporary, and would be limited to the areas adjacent to the construction site and along haul routes to the batch plant(s) and rock crusher. Odors would not affect a substantial number of persons or persist for an extended period of time. An occasional small amount of diesel exhaust may be noted from trucks entering or leaving the site from public roadways.

Dust

Project construction would create fugitive dust from construction and re-construction of gravel roads, including from rock crushing and/or a concrete batch plant. Small amounts of dust would

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be created by construction-related traffic and additional wind-blown dust as a result of ground disturbance. The presence and impact of dust would be temporary, and would be limited to areas adjacent to the construction site and along haul routes. Dust would not affect a substantial number of persons or persist for an extended period of time. A small amount of dust may be noted from trucks entering or leaving the site from public roadways.

Operation

Emissions

Since the fuel source for the proposed project would be wind, there would no emissions from the operation of the turbines. Project operation would not produce visible plumes, fogging, misting, icing, or impairment of visibility, or changes in ambient levels of pollutants. Emissions would occur from Operations and Maintenance vehicles. Travel on the project access roads would produce minor exhaust emissions.

Avoided Emissions

Project operation would avoid the use of fossil fuel to meet the energy needs of the region. The project's annual electricity production is estimated at 197,000 megawatt hours (MWh). This energy is equivalent to 114,000 barrels of crude oil or 654 million cubic feet of natural gas. Total electricity production can be used to estimate the emission displaced by a fossil-fuel alternative. Table 3.2-1 shows emission rates for carbon dioxide and sulfur dioxide for fossilfuel-based power plants in the Northwest Power Pool, along with estimated emissions avoided from the operation of the wind power plant. This table also shows the displaced emissions from the project as a percentage of Washington State emissions for 2004.

Table 3.2-1
Air Pollutant Emissions Displaced by the Project

Air Pollutant	Emission Rates a (lb/MWh)	Tons Displaced by Projectb	Washington State Emissions 2005	Project as % of Washington Emissions
Carbon dioxide	1334c	131,466	16,882,540c	0.7
Sulfur dioxide	1.573	155	4,525	3.4

a. Non-baseload output emission rates for Northwest Power Pool Western Electric Coordinating Council Northwest Region. A non-baseload emission factor was used to calculate the avoided emissions from the project, based on guidance from the US Environmental Protection Agency that "Annual non-baseload output emission rates ... can be used to estimate GHG emissions reductions from reductions in electricity use. These output emission rates, called annual nonbaseload emission rates, are the annual output emission rates for plants that combust fuel and have capacity factors less than 0.8. These new data values are derived from plant level data and supplement, rather than replace, the fossil fuel output emissions rates, which are sometimes used

as a rough estimate to determine how much emissions could be avoided if energy efficiency and/or renewable energy displaces fossil fuel generation. These non-baseload output emission rates would somewhat improve this rough estimate by factoring out baseload generation, which is generally unaffected by measures that affect marginal generation" (USEPA 2007).

b. Estimated annual electricity production multiplied by emission rate, for example, for carbon dioxide (1,334) x [(75 MW) x (0.30 capacity factor) x 24 x 365]/2000 = 131,465.7 tons

c. 2005 value; values for 2005 were not available for the other pollutants listed. By avoiding the need for fossil-fuel-powered plants, the project would contribute to air quality by avoiding emissions associated with burning fossil fuels, including greenhouse gasses. Using wind power also likely would have a beneficial effect on visibility, since the same pollutants that affect visibility also affect air quality (ODEQ 2008).

Comment: Cumulative Impact Analyses are NOT done on a project by project basis. They are done on a regional, inclusive basis. Therefore, any and all fossil fuel-powered plants and other types of backup energy production that is used to back up BPA's hydro power generation have to be accounted for in the DEIS. They are not. Just because Whistling Ridge doesn't have a gas power plant onsite does not mean that a gas power plant will not be used to balance its wind energy production on the grid. The statement "Using wind power also likely would have a beneficial effect on visibility" is patently inaccurate. If visibility in the Gorge and along the Columbia River has been deteriorating for 20 or more years when there wasn't any wind power to speak of, then it is pretty specious to make the correlation that using wind power today would have "beneficial" effects on visibility! The two things are not mutually inclusive.

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Greenhouse Gas Emissions from the Project

Greenhouse gasses would be emitted during construction of the project, as a result of burning fossil fuels in the construction equipment and vehicles. The amount of these emissions has not been quantified, but would be directly proportional to the number of workers and vehicles on the site. Some emissions of greenhouse gases will take place during the design, manufacture, transport of the wind turbines. During operation, greenhouse gas emissions would be the result of vehicles used for regular maintenance activities and would be much lower than during construction. Production of electricity itself would not release greenhouse gasses or other pollutants. The American Wind Energy Association estimates that including generation from all sources, wind energy's carbon dioxide emissions are on the order of 1 percent of coal or 2 percent of natural gas per unit of electricity generated (AWEA 2009).

Comment: So what does "wind energy's carbon dioxide emissions are on the order of 1 percent of coal or 2 percent of natural gas per unit of electricity generated" actually mean? This statement doesn't mean anything without data to compare. Where are the comparison charts for wind, gas, and coal CO2 emissions? I could not find them in the DEIS.

While greenhouse gas emissions from the project will be low, several of the mitigation measures mentioned in Section 3.2.3 will reduce such emissions. These include limiting idling times of equipment and encouraging carpooling among construction workers.

Odor

Operation of the turbines would create no odors, as no combustion is involved and no odor-producing materials would be used in project operations. Travel on the project access roads would produce insignificant amounts of odor from exhaust. Maintenance of the substation and Operations and Maintenance building would produce occasional minor odors from painting.

Dust

Operation of the project would result in minor increases in dust during regular maintenance of gravel access roads. Project-related increases to traffic on these gravel roads would generate small amounts of additional fugitive dust. This increased traffic would consist largely of weekly or less frequent trips to turbines in service vehicles for maintenance and repair activities.

Project Decommissioning

In compliance with WAC 463-72, Site Restoration and Preservation, the Applicant will provide EFSEC with an initial site restoration plan at least ninety days prior to the beginning of site preparation. The plan would address site restoration that would occur at the conclusion of the project's operating life (estimated to be 30 years), and restoration in the event the project is suspended or terminated during construction or before it has completed its useful operating life. The plan would include or parallel a decommissioning plan for the project.

The initial site restoration plan would be prepared in sufficient detail to identify, evaluate, and resolve all major environmental and public health and safety issues presently anticipated, including potential emissions or impacts to air quality. If impacts to air quality are anticipated to occur as a result of site restoration and project decommissioning, mitigation measures would be proposed as part of the plan.

3.2.2.2 No Action Alternative
Under the No Action Alternative, the project would not be built. The project site would continue to be used primarily for timber harvests. If the No Action Alternative is selected, the growing

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electricity needs of the region would continue to be met through a combination of other renewable development and combustion of additional fossil fuels. In recent years, several of the new power plants proposed and constructed in the Pacific Northwest have been fossil fuel powered plants, primarily using natural gas as fuel.

Comments: If Whistling Ridge is NOT built, this does not necessarily mean that gas plants will take its place. Conservation and energy efficiencies in our homes, businesses, and

infrastructure could fill the energy gap. Whistling Ridge and other wind farms are not necessarily the best way to meet our energy needs. What must be addressed, and it is NOT addressed in the DEIS, is that most of the energy produced in the NW is sucked down to California and parts South and they will continue to demand more and more energy and we will never be able to satisfy their energy thirst because they will want more and more. With global climate change upon us and temperatures rising, people will want more energy for air conditioning. Why should our environment and ecosystems be degraded just to satisfy this insatiable energy thirst? If California wants more energy let them put wind turbines on their beaches. Like that's going to happen any time soon!!

Fossil fuel power plants, in contrast to wind power projects, emit significant quantities of carbon dioxide, an important greenhouse gas linked to potential climate change. Natural-gas-powered plants also emit sulfur oxides and nitrogen oxides, which contribute to both ground-level air quality problems and acid rain. According to the Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2006 (USEPA 2008), air emissions from fossil fuel combustion for electricity production are a leading source of air pollution nationally, accounting for:

- 67 percent of sulfur dioxide emissions
- 28 percent of nitrogen oxide emissions
- 36 percent of carbon dioxide
- 3 percent of mercury

3.2.3 MITIGATION MEASURES

The following mitigation measures are identified to avoid, minimize, and compensate for potential construction-related air emissions and dust impacts:

- Ensure that all vehicles used during construction comply with applicable Federal and state air quality regulations.

- Implement operational measures, such as limiting engine idling time and shutting down equipment when not in use, to reduce air emissions.

- Implement active dust suppression on unpaved construction access roads, parking areas and staging areas, using water-based dust suppression materials in compliance with state and local regulations.

- Implement a dust control program to minimize any potential disturbance from construction-related dust. Dust suppression would be accomplished through application of either water or a water-based, environmentally safe dust palliative such as lignin. The use of a dust palliative such as lignin (a non-toxic, non-hazardous compound derived from trees) would result in the use of substantially less water for dust suppression and therefore less traffic from water trucks to the construction site. The final decision regarding dust suppression techniques would be made by the Construction Contractor in consultation with local authorities.

- Limit traffic speeds on unpaved project roads to 25 mph to minimize dust.

• Encourage carpooling among construction workers to minimize construction-related traffic and associated emissions.

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• Replant or gravel disturbed areas to reduce wind-blown dust.

• Implement erosion control measures to limit deposition of silt to roadways.

3.2.4 UNAVOIDABLE ADVERSE IMPACTS
The proposed project would produce minor and temporary impacts to air quality during construction activities, similar to existing logging operations.

3.2.5 REFERENCES
American Wind Energy Association (AWEA). 2009. Wind Energy and the Environment. Accessed December 2009 at: http://www.awea.org/faq/wwt_environment.html.

Bonneville Power Administration (BPA). 2008. Climate Change, BPA's Initial Roadmap. December. Accessed December 2009 at: http://www.bpa.gov/corporate/pubs/Climate_Change_2008_Initial_Roadmap_final.pdf.

Oregon Department of Environmental Quality (ODEQ). 2008. Columbia River Gorge Air Study and Strategy, Oregon DEQ and Southwest Clean Air Agency, Draft, February 29. Accessed October 2009 at: http://www.deq.state.or.us/aq/gorgeair/docs/GorgeStrategyDRAFT.pdf.

———. 2009. 2008 Oregon Air Quality Data Summaries. June. http://www.deq.state.or.us/aq/forms/2008AQreport.pdf.

Southwest Clean Air Agency (SWCAA). 2008. Columbia River Gorge Air Quality Study, Science Summary Report, Columbia River Gorge National Scenic Area. Final Report. February 8. Accessed October 2009 at http://www.swcleanair.org/gorgedata/FinalScienceSummaryReportFeb8-08.pdf.

United States Environmental Protection Agency (USEPA). 2009. Climate Change. Accessed December 2009 at http://www.epa.gov/climatechange/basicinfo.html.

———. 2007. The Emissions & Generation Resource Integrated Database for 2006 (eGRID2006) Technical Support Document. April.

———. 2008. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2006. April.

3.3 WATER RESOURCES

This section describes the existing water resources in the project area, the potential for impacts to water resources from the proposed project, and mitigation measures designed to minimize or avoid those impacts. Information in this section is taken primarily from the Application for Site Certification and the visual assessment completed for that document.

Comment: In 2007, Underwood had a really dangerous water situation, as reported in The Columbian newspaper: "Underwood water deemed safe to drink"

The Columbian

State health officials Wednesday lifted a boil-water advisory issued Friday for the Underwood area after tests showed the water is now safe to drink.

Major firefighting efforts in the Columbia River Gorge last week drained local water supplies, causing Underwood's water system to lose pressure in some areas. The pressure loss could have allowed contaminants to enter the water, so the state Department of Health and the Skamania County Public Utility District issued the boil- water advisory as a precaution. The Underwood system serves 876 residents.

Water supplies have returned to normal, officials said, and excess air has been flushed from the system. Water samples sent for bacterial analysis came back indicating the water is safe.

Originally published by KATHIE DURBIN Columbian staff writer, 9/27/2007.

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Source: Columbian

The DEIS has no data on the watershed in this area and from which or what type of source, in actuality, the residents get their water. This is a fatal flaw in data gathering and analysis. What would be the cumulative effects, on the water resources that these 876 Underwood residents use, of all the impermeable surfaces—wind turbine pads, substation, maintenance roads, etc.-- that would result from the construction of this proposed wind farm? This is a critical question for fire fighters and the residents. We all know that there will be future fires. What if one of the turbines causes a fire in the woods? Where is the water going to come from to combat this type of fire? Would the Underwood reservoir be depleted thus affecting the residents and their health and safety?

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3.3.1 AFFECTED ENVIRONMENT

3.3.1.1 Surface Water

The Columbia River flows south of the project site and receives runoff via the White Salmon

Basin from the east portion of the project site and via the Little White Salmon Basin from the west portion of the project site. Surface water resources in and near the project site are shown on Figure 3.3-1 and include the following:

One wetland labeled "Cedar Swamp" on Figure 3.3-1 and described in Section 3.4.

• Several drainages located within the project site boundaries, which are typed as seasonal, non-fish habitat streams or perennial, non-fish habitat streams (Figure 3.3-1). Some drainages extend upstream from these typed reaches, but lack defined channel features. Most of the drainages within the project site boundary would be classified as Class V streams under Skamania County's critical areas ordinance. Class V streams are small perennials streams or seasonal streams with short periods of spring or storm runoff (SCC 21A Appendix C). The tributary to Little Buck Creek may be classified as a Class IV stream as it nears the eastern project site boundary. The stream information has been updated from the information contained in the Application for Site Certification with additional data from field visits.

Comment: LIDAR reconnaissance would be useful to determine drainages and streambeds. It could also be used for the geologic survey. Why isn't LIDAR a requirement for this DEIS?

• One unnamed perennial stream crossed by West Pit Road, the proposed access road. This stream occurs in the Little White Salmon watershed. Flow was observed through the existing culvert under West Pit Road at the time of the July 2009 field visit. However, the surface flow and the channel disappear downstream of the culvert. There is no surface water connection to any other stream or waterbody.

3.3.1.2 Stormwater Runoff Water runoff from the northeast portion of the project site drains southeast via Cedar Swamp and its tributaries to Little Buck Creek before flowing south to the White Salmon River, and ultimately to the Columbia River. Water runoff from the southwest area of the project drains west and southwest to a flat area east of the project, ultimately draining to the Little White Salmon River and then the Columbia River.

Project site soils are classified as well-drained, with slow to moderate runoff, and slight to moderate hazard of water erosion. The presence of scour, sedimentation, steep slopes, ephemeral and perennial streams, and the soil classifications suggest that surface water runoff and infiltration within the project are moderate (Haagen 1990).

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Figure 3.3-1
Job No. 33758687 Waterways in the Project Vicinity

3.3.1.3 Groundwater

A subsurface investigation was conducted in September 2007 to assess near-surface soil and rock characteristics (Appendix B). The investigation included twelve test pits excavated from seven to 16 feet in depth. Groundwater was not encountered in any of the test pits. However, these observations reflect groundwater levels at the time of the field investigation and actual groundwater levels may fluctuate significantly in response to seasonal effects, regional rainfall, and other factors not observed during this investigation. Regional or perched water tables may be present at a greater depth.

Comment: Why weren't the field investigations done during the rainy season? How does one find perched water tables and if they "may be present at greater depth" shouldn't they be found since SDS and BPA are proposing to put structures that weigh quite a few tons unto unstable ground that is subject to mass wasting? The groundwater issue needs to be addressed with further field studies and deeper coring. Where is the watershed map for this area? What is the extent of the watershed for this area? The 50+ turbine pads are 50 X 50 feet and this would introduce a large quantity of impermeable surface area to unstable ridges. How would these impermeable surfaces affect water saturation and water flow in the watershed? Is this area included in the Water Resource Inventory Area (WRIA) 29?

3.3.1.4 Floodplains

The project site is located on a series of north-trending ridges that range in elevation from approximately 2,100 to 2,300 feet, outside the 100-year floodplain for the White Salmon, Little White Salmon, and Columbia Rivers (FEMA 1986).

3.3.1.5 Public and Private Water Supplies

There are no public water supplies within the project site. Private water supplies are limited to water supply wells serving adjacent residences and agricultural operations.

Comment: Well, where do these "private water supplies" come from? From perched water tables? Other types of groundwater? Are these wells interconnected? Could the construction and excavation from Whistling Ridge affect these wells?

3.3.2 IMPACTS
3.3.2.1 Proposed Action
Construction

Surface Water

On site, project construction would involve roadway improvements on approximately 7.9 miles of existing private, gravel logging roads, construction of approximately 2.4 miles of new gravel access roads, the project substation, an Operations and Maintenance building at one of two alternative sites, the collector system pad, a pad for each turbine tower, and underground electric cables buried in trenches along the access roads. Temporary roadways would be built to provide additional access for heavy machinery during construction. Of these improvements, only the planned improvement to West Pit Road may directly affect water resources.

The planned improvements to West Pit Road would cross one unnamed drainage that currently flows under West Pit Road through a culvert. This drainage would be classified by Skamania County as a Class V stream. The Skamania County Code establishes buffers for Class V streams; however, expansion of existing uses is allowed within these buffers. The culvert under West Pit Road was upsized during road improvements in summer 2009. Depending on the amount of additional roadway widening that may be required, this new culvert may need to be lengthened to extend beyond the width of the improved access road. This would be determined in during final design.

Comment: "Additional roadway widening"? What does this mean? Doesn't SDS know now how much roads would have to be widened? And which roads would actually have to be widened? Determining this during "final design" does not work for me. I want to know now, before this project is approved or not whether and which roads would have to be widened or reinforced since hauling those heavy turbines up narrow roads would require widening and perhaps repaving. SDS should provide information on roads now, not later.

Small portions of stream and stream buffer are located with the 650-foot turbine corridors used for permitting this project. However, all streams and stream buffers would be avoided during the micrositing process.

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No wetlands or other surface water bodies would be filled or otherwise affected as a result of the project. Wetlands are discussed in further detail in Section 3.4.

Stormwater Runoff

Construction would result in approximately 108 acres of disturbed surface, of which approximately 52 acres will be restored. Use of standard construction BMPs would mitigate surface runoff and erosion from these surfaces to a minor level.

Comment: What are these "standard construction BMPs" and where are they located in the DEIS?

Groundwater

No impacts to groundwater are anticipated from construction. Construction water would be obtained from a supplier with valid water rights and no construction water would be withdrawn on site. Potential spills to groundwater during construction would be controlled through standard construction BMPs. A Spill Prevention, Control and Countermeasure (SPCC) Plan will be prepared.

Floodplains

The project site is located outside of floodplain areas. No construction impacts to floodplains would occur.

Public and Private Water Supplies

During construction, approximately 1.7 million gallons of water would be used for road construction, wetting of concrete, dust control, and other activities. Water consumed during construction would be purchased by the contractor from an off-site vendor with a valid water right and transported to the project site in tanker trucks. No water would be withdrawn from the project site during construction. There would be no water treatment requirements or methods on site. Environmentally benign dust palliatives such as lignin may be added to water used for dust suppression to improve efficiency and reduce water use.

Operation

Surface Water

No impacts to surface water are anticipated from project operation.

Stormwater Runoff

The total project site area is approximately 1,152 acres; however, permanently improved areas would cover approximately 56 acres, less than 5 percent of the total project site. Stormwater impacts from disturbed areas would be generated from this permanently improved area. .

The increase in surface water runoff from this additional impervious surface is expected to be minimal. Stormwater would continue to be routed off-site via culverts and some stormwater would continue to infiltrate in the way it does currently. Based on site conditions and assuming implementation of appropriate BMPs, the net impact to absorption on the project site is considered negligible and there would be negligible impacts to surface water.

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Approximately 22 acres would be converted from forested to non-forested habitat in the areas surrounding the turbines where re-growth of trees would be prevented. This conversion would result in minimal impacts to precipitation interception and runoff.

Groundwater

Operation of the project would have minimal or no impacts to groundwater. The well serving the Operations and Maintenance building would use less than 5,000 gallons of water per day, and would thus be exempt from permit requirements of RCW 90.44.040. The size of the aquifer is not known; however, this would be the only well on the project site, which is approximately 1,152 acres in size. The well would be installed by a well contractor licensed pursuant to Chapter 173-162 WAC, and in compliance with the requirements and standards of Chapter 173160 WAC. The well would be installed consistent with Skamania County Community Development Department and Ecology requirements for new wells.

Although the amount of impervious surface would increase by approximately 52 acres with the construction of the project, impacts to groundwater recharge during operation would be negligible.

Floodplains

The project site is located outside of floodplain areas. No impacts to floodplains would occur from operation of the project.

Public and Private Water Supplies

Project operation would require water use primarily for the bathrooms, showers, and kitchen in the Operations and Maintenance building. When the project is operational, there would be eight to nine permanent full-time and/or part-time employees on the Operations and Maintenance staff. The average total water supply needs would be less than 5,000 gallons per day.

Water supply for the Operations and Maintenance staff would be provided through a well drilled on the project site. All water would be discharged to a septic tank installed on site, and thus most of the water used would be returned to the aquifer. There would be no process water generated on site, and no water associated with plant operations would be discharged to surface waters.

Comment: So there is an aquifer. If there is an aquifer then there is groundwater. What is this aquifer, what is its extent? Do the other wells in the area use this aquifer for their water?

The project would not require the use of any water for cooling or any other industrial use, and there would be no industrial wastewater stream from the project. The project would require and obtain approval for the new well from EFSEC, in consultation with Skamania County Environmental Health Department and Ecology.

The project would not require any new water rights or authorizations beyond the well for the Operations and Maintenance building.

Due to the low volume of water that would be required for operational use, no alternatives to reclaim water or other water reuse projects would be required.

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Project water use is not expected to affect water levels in private wells in the vicinity of the project. There are no public water supplies within the project site; therefore, no impacts are anticipated to public water supplies.

Project Decommissioning

In compliance with WAC 463-72, Site Restoration and Preservation, the Applicant will provide EFSEC with an initial site restoration plan at least 90 days prior to the beginning of site preparation. The plan will address site restoration that would occur at the conclusion of the

project's operating life (estimated to be 30 years), and restoration in the event the project is suspended or terminated during construction or before it has completed its useful operating life. The plan will include or parallel a decommissioning plan for the project.

Comment: These plans should not be left for later. They should be in the DEIS now so that we can all comment on them. I think it is very important to know HOW a project will be decommissioned and who will be responsible for removal and costs. Is there some type of bond that the project proponents have to put up so that we the taxpayers don't get stuck with having to decommission wind farms??

The initial site restoration plan will be prepared in sufficient detail to identify, evaluate, and resolve all major environmental and public health and safety issues presently anticipated, including potential changes to surface water flow, water quality, stormwater runoff, groundwater quality, or water supply. If impacts to water resources are anticipated to occur as a result of site restoration and project decommissioning, mitigation measures will be proposed as part of the plan.

Comment: What are these "mitigation measures" that will be proposed if there are water impacts? What kind of impacts to water resources is SDS anticipating? Why not list these mitigation measures now so that we can all see if they would be adequate? The DEIS should include information on impacts to water resources.

3.3.2.2 No Action Alternative

Under the No Action Alternative the project would not be built, and there would be no well drilled to support the Operations and Maintenance building. No impacts to surface or ground water would occur.

3.3.3 MITIGATION MEASURES

The following mitigation measures are identified to avoid, minimize, and compensate for potential impacts of the proposed project related to water resources during pre-construction, construction, and operation.

• Prepare and implement a Stormwater Pollution Prevention Plan (SWPP) prior to construction of the proposed project to lessen soil erosion and improve water quality of stormwater run-off. The SWPP will be developed to prevent movement of sediment off-site to adjacent water bodies during short term or temporary soil disturbance at construction sites. The plan addresses stabilization practices, structural practices and stormwater management (as outlined by Section 402(p) of the Federal Clean Water Act and Chapter 90.48 RCW of the State of Washington's Water Pollution Control Act).

• Identify all areas of potential chemical storage during construction, including any herbicides, and provide appropriate control measures within the SWPP.

Comment: Is Whistling Ridge proposing to use herbicides over the life of the proposed wind farm to control vegetation? What kind of herbicides and/or pesticides is SDS proposing to use? What is the chemical makeup of any proposed chemicals that might be used on this project? Are there any potential health hazards to human beings and wildlife?

• Control the sequence and methods of construction activities to limit erosion. Clearing, excavation, and grading would be limited to the minimum areas necessary for construction of the project, and would not be performed far in advance of facility construction.
3-29

• Design slopes to be graded no steeper than 3 feet horizontal (H) to 1 foot vertical (V).

• Protect slopes less than 3H:1V with silt fencing as appropriate. Silt fences would be installed in locations where they would trap silt eroded from slopes during construction and prior to reestablishing vegetation. The maximum flow path to each silt fence would be approximately 100 feet. No concentrated flows greater than 1 cubic foot per second would be directed toward any fence for the 25-year storm. Silt fences would be maintained throughout the construction period and beyond, until disturbed surfaces had been stabilized with vegetation. Silt fence construction would be determined by local construction conditions during final design of the facilities.

• Design sediment control measures used during construction based on 10-year design storm specifications. Water quality measures (other than sediment removal) would be based on the 6-month, 24-hour design storm.

• Utilize sediment traps to intercept stormwater runoff and allow sediment to settle, thereby minimizing the amount of sediment flowing off site. Sediment traps would be sized for the specific disturbed area, for bare soil conditions, and typically for 75 percent sediment removal efficiency.

• Implement and emphasize erosion controls over sediment controls through non-quantitative construction activities such as:
- Straw mulching and vegetating disturbed surfaces

- Retaining original vegetation wherever possible

- Timing grading operations to dry seasons

- Directing surface runoff away from denuded areas

- Keeping runoff velocities low through minimization of slope steepness and length

- Providing and maintaining stabilized construction entrances

• Grade control structures such as rock check dams, hay bale check dams, dikes, and swales would be used where appropriate to reduce runoff velocity, as well as to direct surface runoff around and away from cut-and-fill slopes. Swales and dikes also would be used to direct surface water on top of the filled pad toward sediment traps and away from flowing over the bank.

• Utilize the appropriate erosion control blankets designed for various weather conditions during the construction period, such as straw or jute matting or other suitable erosion control blankets, on any disturbed slopes to prevent erosion and control sediment migration.

• Use quarry spall construction entrances to reduce migration of construction dirt to public roads. Placing the construction entrances is one of the first activities required at the site, but the rock bed also must be periodically replenished as it becomes dirty or migrates into the subgrade. All construction traffic would be directed to use the construction entrances.

3-30

• Restore ground surfaces within fourteen days of the area's final disturbance. Interim surface protection measures, such as erosion control blankets or straw matting, also may be required prior to final disturbance and restoration if warranted by the potential for erosion.

• Reduce potential for chemical pollution of surface waters during construction. Since source control is the most effective method of preventing chemical water pollution, careful control must be exercised over potentially polluting chemicals used on site during construction. Under the SPCC Plan, the general contractor would be responsible for planning, implementing, and maintaining BMPs for:
-Neat and orderly storage of construction chemicals and spent containers in lined, bermed areas

- Prompt cleanup of construction phase spills

- Regular disposal of construction garbage and debris

• Train employees to utilize methods outlined by the SWPP.

• Dispose and contain garbage generated during construction properly.

• Design and incorporate BMPs into final construction plans and specifications so that operational impacts to water resources will be minor.

• Construct appropriate stormwater hydraulic and treatment facilities making sure that routine maintenance and chemical pollution prevention through source control are utilized for permanent stormwater management.

• Utilize the following constructed permanent stormwater BMPs:
- Vegetated drainage ditches

- Culverts with stabilized inlets and outlets

-Permanent erosion and sedimentation control through site landscaping, grass, and other vegetative cover

-Runoff treatment BMPs facilities would be designed to conform to the applicable Stormwater Management Manual

• Adopt operational BMPs to implement good housekeeping, preventive and corrective maintenance procedures, steps for spill prevention and emergency cleanup, employee training programs, and inspection and record keeping practices as necessary to prevent stormwater pollution. Examples include:
-Neat and orderly storage of chemicals under cover in the Operations and Maintenance facilities

Comment: What are these chemicals that are in storage? What is their chemical makeup? Are they hazardous? Are they dangerous to humans and wildlife?

3-31

- Prompt cleanup and removal of spillage

- Regular pickup and disposal of garbage and rubbish

- Prevention of accumulations of liquid or solid chemicals on the ground or the floor

• Train facility operators annually to in spill response and in the applicable pollution control laws and regulations.

• Train additional staff to recognize areas that may be affected by a spill and potential drainage routes.

• Train additional staff to report spills to appropriate individuals.

• Train additional staff on the appropriate material handling and storage procedures.

• Train additional staff to implement spill response procedures.

• Summarize in-house compliance inspections to be kept with the SWPP, along with any notifications of non-compliance and reports on incidents such as spills. If the SWPP has been followed but still proves inadequate to prevent stormwater pollution, project staff would amend the SWPP and seek EFSEC concurrence with the improvements.

• Utilize BMPs to include vegetated ditches or swales which will increase infiltration to protect groundwater.

• Utilize a site development plan to protect groundwater from the on-site storage of chemicals (if any).

3.3.4 UNAVOIDABLE ADVERSE IMPACTS

Construction and operation of the project would only result in negligible to minor impacts to water resources because the impacts are localized and the disturbance is short-term.

Comment: Now see, this is why this DEIS is so frustrating. Since there is no watershed map and the proponents don't know whether there is an aquifer or perched water tables or other sources of groundwater, they cannot make such a blatantly inaccurate statement. There is no data in this DEIS that could be used to conclude "negligible to minor impacts to water resources." The proponents don't have any way of knowing whether "impacts are localized and the disturbance short term" because they have NOT done a CUMULATIVE IMPACTS ANALYSIS for impacts and effects of this project and all other such projects in the region.

3.3.5 REFERENCES

Federal Emergency Management Agency (FEMA). 1986. Flood Insurance Rate Map, Skamania County, Washington; Community Panel Number 530160 075 B.

Haagen, Edward. 1990. Soil Survey of Skamania County Area, Washington. US Department of Agriculture, Natural Resources Conservation Service, Washington Soil Survey Program.

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3.4 BIOLOGICAL RESOURCES

This section describes the existing biological resources on the project site, including vegetation, habitat, wetlands, special status species, fish and other wildlife. It also considers the potential for impacts to biological resources as a result of construction and operation of the project, and mitigation measures designed to minimize those impacts. Information in this section is taken from the following background studies and reports:

- Vegetation Technical Report: Saddleback Wind Project (CH2MHill, no date) (Appendix C-1)
- Wetland Delineation Report, Saddleback Wind Energy Project (CH2MHill 2007) (Appendix C-2)
- Rare Plant Survey Report: Saddleback Wind Project (CH2MHill 2003) (Appendix C-3)
- Baseline Avian Use Surveys of the Project in Fall 2004, Summer 2006, and winter-spring 2008-2009 (West Inc. 2009a) (Appendix C-4)
- Final Report, Northern spotted owl, western gray squirrel and northern goshawk surveys conducted for the Whistling Ridge Wind Energy Project (Turnstone 2004) (Appendix C5)
- 2008 Final Report, Results of northern spotted owl, western gray squirrel and northern goshawk surveys conducted for the Whistling Ridge Wind Energy Project. (Turnstone 2008) (Appendix C-6)
- 2009 Report, Results of northern spotted owl, western gray squirrel and northern goshawk surveys conducted for the Whistling Ridge Wind Energy Project. (Turnstone 2009) (Appendix C-7)

• Bat Acoustic Studies for the Whistling Ridge Wind Resource Area in 2007 (West Inc. 2008; Appendix C-8), 2008 (West Inc. 2009b; Appendix C-9), and 2009 (West Inc. 2009c; Appendix C-10)
• Washington Natural Heritage Program (WNHP 2003a, 2003b, 2009)
• Discussions with representatives of Washington Department of Fish and Wildlife and USFWS
• Supplemental wetland reconnaissance and special status plant surveys in May and July 2009

Comment: I am not an expert on the spotted owl issue, but wasn't there a lawsuit filed in Washington, D.C., by the American Forest Resource Council, in 2009, challenging the Department of Interior's (DoI) U.S. Fish and Wildlife Service (USFS) 2008 Northern Spotted Owl critical habitat designation? The U.S. DoI had made a court motion asking the court judge to remand and vacate the owl's critical habitat designation and to remand the recovery plan on which the designation was made. The government's action was basically seeking to set aside the 2008 critical habitat designation. It was DoI Secretary of Interior Ken Salazar who announced the withdrawal of the Western Oregon Plan Revisions (WOPR) Records of Decision (RODs) on July 16 2009; at this same time he also announced the government would also seek to have the critical habitat designation vacated. What is the status of this lawsuit as it regards to the spotted own critical habitat in this region? BPA must do cumulative impact analyses on the effects of its regional infrastructure and energy production facilities on the critical habitats of the spotted owl (and other species). The DEIS, as far as I was able to see, does not address BPA's impacts on critical spotted habitat. This needs to be remedied.

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3.4.1 AFFECTED ENVIRONMENT

3.4.1.1 Regional Environment

The project site is located in the Southern Washington Cascades Province, within the grand fir (Abies grandis) and Douglas-fir (Pseudotsuga menziesii) major vegetation zones (Franklin and Dyrness 1988). Topography in the area is characterized by generally accordant ridge crests, separated by steep, deeply dissected valleys. The prevailing climate is cool and wet. The majority of precipitation falls as snow, which may accumulate one to three meters during the winter season. The site is located on Underwood Mountain. Major drainages in the vicinity of the project site include the White Salmon Basin to the east and the Little White Salmon River Basins to the west, both of which drain to the Columbia River, which is located south of the project site.

Comment: In section 3.17, there is this statement about snow: average of 9 inches of snow per year. Footnote 4. Which is the true statement "...snow, which may accumulate one to three meters during the winter season" or "average of 9 inches of snow per year"?? This does not compute. Three to nine feet of snow is a lot different than 9 inches of snow. Meters of snow mean more water erosion. Meters of snow mean more snow removal traffic. Meters of snow could also mean lack of access to the wind turbines when they have to be tied down due

to high winds. What happens if the technicians can't get to the wind turbines and the blades are subjected to high winds? Will they rip off? Will they go flying into neighboring properties? What happens during high winds and snow season? What's the standard operating procedure to be followed? The DEIS should answer these questions and address the issue of snow.

Historically, the project site was dominated by grand fir and Douglas-fir. The relative abundance of each of these coniferous species was driven by elevation, aspect, underlying soil, and previous disturbance history (Franklin and Dyrness 1988). Mixed conifer and deciduous forest stands were present, typically following natural disturbance events. Deciduous forests also were present, composed mainly of alder (Alnus rubra, A. viridis ssp. sinuata), Pacific dogwood (Cornus nuttallii), and big-leaf maple (Acer macrophyllum).

For the last century, the predominant land use in the area located between Underwood Mountain and the Little White Salmon River has been commercial forest production. Lands within the project site are privately owned, and have been actively-managed for timber for the last century. As a result of ongoing timber harvest, forests within the project site are now characterized by a mosaic of stand ages; however, average stand age has declined as a result of relatively short stand rotations.

Changes in stand structure and complexity, patch size, and species distribution also have occurred. Forest management practices have resulted in a shift in species dominance to the commercially valuable Douglas-fir. Changes in stand structure and complexity, patch size, and species distribution also have occurred. Few large, old-growth conifers exist in the project vicinity, and there are no late-successional stands or old forest habitats (using Washington Forest Practices habitat definition) within or adjacent to the site.5 Canopy species within the corridor areas have been removed, and areas are managed to be devoid of shrub and tree species.

Comment: If SDS is such a poor steward of their lands so that there is a mosaic of stand ages, few large, old growth conifers, and no late successional stands or old forest habitats, then I'm not quite sure why we would trust SDS to take care of and protect the 1000+ acres on the proposed wind farm site from further fragmentation and degradation! SDS's purported reason for proposing this wind farm is to help reduce the CO2 footprint of the Pacific NW. Then wouldn't it be better if they were growing more older and bigger trees which have been scientifically proven to store more CO2 then younger trees? Instead they have an area which has been under commercial forest production for the last century and "average stand age has declined as a result of relatively short stand rotations" and probably the practice of clear-cutting, a practice that should be prohibited in active forest management, has not helped the stands, either.

The proposed turbine corridors have been forested recently in general conformance with established timber harvest schedules, and are connected by a network of existing forest roads. Four major BPA high voltage transmission lines, located in two corridors, cross the site. Canopy species within these two corridors have been removed, and areas are managed to be devoid of shrub and tree species. The project site contains a network of roads ranging in width from

approximately 8 to 20 feet. These roads are currently used to support logging activity and to access BPA transmission lines.

5 "Adjacent" refers to defined as non-SDS lands that were within 1.8 mile of the proposed turbine strings and/or the two known northern spotted owl management areas (Mill and Moss Creek) north of the project site.

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A Williams Northwest natural gas pipeline is located on the northern edge, their natural compressor station is located to the west, and cellular towers and communications facilities are located nearby. Resource mining in the area has left rock pits in places. As a result, the project area includes no native habitat and is permanently committed to use by commercial forestry operations and utility infrastructure.

Comment: SO, where are the cumulative impact analyses for this apparently industrialized area? If all of this man-made infrastructure exists in this area, surely there are cumulative impacts and they must be considered in the broader context of cumulative regional impacts and effects of further industrialization—and a wind farm is an industry.

Initial habitat, vegetation, and special status plant surveys were conducted within the Project site in 2003. Environmental assessments included a pre-field information review and field surveys designed to classify habitats and identify special status plants that may occur within the project site. Supplemental habitat, vegetation, and special status plant surveys were conducted in 2009.

3.4.1.2 Habitats

Habitat maps were created using DNR orthophotos from January 2002 and classified using the USFS Classification System (USFS 1985). Habitat maps were field-verified during the 2003 survey season. These data were entered into a GIS database and used to calculate the total acres of each habitat type that would be crossed by the proposed project elements. The results of the habitat survey are provided in the Vegetation Technical Report (Appendix C-1).

Five vegetation communities and wildlife habitats were identified within the project site:

- Grass-forb stand (recent clearcuts)
- Brushfield/shrub stand
- Conifer-hardwood forest
- Conifer forest
- Riparian-deciduous forest

All five of the vegetation communities are part of a mosaic of habitat that comprises a commercial forest operation, as discussed in Section 3.4.1.1. Because of these man-made conditions, which result in frequent and repeated disturbance, the quality and value of the forest is generally considered low. Native tree species are used in timber production; however, they are not allowed to become mature forests prior to harvesting. Stand structure also is considered to be

low quality with limited undergrowth of a few species. Weeds are present, especially in clear cuts, which are eventually cleared for regeneration. Patch size of forests are generally small, and bisected by numerous roads, transmission lines and other facilities for logging. Timber harvest rotations are ongoing; therefore, future quality of the habitat on the project site is also considered low.

Grass-Forb Stand

Grass-forb stands are defined as habitats where shrubs comprise less than 40 percent crown cover and are less than 5 feet tall (USFS 1985). This stand type typically occurs when a natural or anthropogenic disturbance such as a wildfire, wind, or timber harvest results in the removal or death of the majority of large trees, or when brushfields are cleared for planting. These habitats

may be devoid of vegetation, or covered by herbaceous grasses and forbs. Tree regeneration in grass-forb stands is typically less than 5 feet tall and 40 percent crown cover. Grass-forb stands within the project site are located primarily in recently clearcut harvest areas. Vegetation in these areas is minimal and consists predominantly of weedy herbaceous species, including bull thistle (Cirsium vulgare), Canada thistle (Cirsium arvense), and dandelion (Taraxacum officinale). Coarse woody material, occasional slash piles, and large areas of bare ground are common in these areas.

Brushfield/Shrub Stand

Brushfields are defined as the shrub-dominated habitats (USFS 1985). These habitats typically develop following clearcut harvest, or natural disturbance that may result in removal of vegetation.

The majority of brushfields are young plantations that have been planted with Douglas-fir. The plantations typically have not reached the closed-canopy stage. Vegetation consists of remnant forest understory species, such as vine maple (Acer circinatum), Sitka alder, beaked hazelnut (Corylus cornuta var. californica), serviceberry (Amelanchier alnifolia), oceanspray (Holodiscus discolor), bracken fern (Pteridium aquilinum), sword fern (Polystichum munitum), and early successional species such as Himalayan blackberry (Rubus armeniacus), fireweed (Epilobium angustifolium), common yarrow (Achillea millefolium), pearly everlasting (Anaphalis margaritacea), and grasses. Large amounts of bare soil, slash and other logging debris are common.

Vegetation control has occurred in some areas as part of existing forest management practices. Control methods include herbicide application and/or mechanical control. Areas where vegetation management has occurred are visually and functionally different from areas where control has not been implemented. In areas where vegetation control has not occurred, dense vine maple thickets with occasional alder or Douglas-fir frequently occur. Patches of alder saplings, salmonberry (Rubus spectabilis), vine maple, red elderberry (Sambucus racemosa),

oceanspray, lupine (Lupinus spp.), Oregon oxalis (Oxalis oregana), and grass also may be present in these areas. Small diameter coarse woody material is common.

Conifer-Hardwood Forest

Conifer-hardwood forests within the project site are predominantly characterized by the presence of bigleaf maple and Douglas-fir, with some red alder. The forest stand condition is characterized as a multi-layer, closed sapling-pole forest (USFS 1985). Canopy height ranges from 40 to 60 feet, and canopy closure is between 60 and 80 percent. The majority (~70 percent) of canopy cover results from the presence of Douglas-fir. The shrub layer is characterized by vine maple, salmonberry, thimbleberry (Rubus parviflorus), red elderberry, beaked hazelnut, and Pacific dogwood. Density of the shrub layer is variable. The herbaceous layer is characterized by sword fern, trailing blackberry (Rubus ursinus), oxalis, grasses, and moss. Coarse woody material is generally low to moderate. Deciduous snags are more common than conifer snags; however, short well-decayed conifer snags may be present.

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Conifer Forest

Coniferous forests located within the project site are dominated by grand fir and Douglas-fir. Forest stand condition is primarily closed sapling-pole-sawtimber and large sawtimber. The diameter at breast height of pole-size conifers measures 8–12 inches. The diameter at breast height of sawtimber measures 12 to 23 inches. Closed sapling-pole-sawtimber stands are characterized by closed canopy, relative short live crowns, and exclusion of shrub species and many forb species. Coarse woody material in these stands is typically low, consisting mainly of remnants from historic forests. Snags are rare; however, small diameter snags become more common in the pole and sawtimber stages, as smaller individuals are out-competed.

Large sawtimber is considered to be at least 21 inches diameter at breast height. Large sawtimber stands are characterized by within-stand differentiation of canopy species, the emergence of dominant trees, and a more diverse and multilayer understory composed of shrubs and forbs. Snags and coarse woody material are generally rare; however, this may vary depending on past harvest practices, stand management, and actual stand age. The majority of coniferous forests within the project site is managed for commercial timber production, and is replanted following harvest. Commercial timber lands are widespread throughout the vicinity of the project site.

Riparian Deciduous Forest

Riparian deciduous forests may develop in near-stream areas as a result of natural or anthropogenic disturbance. Riparian deciduous forest habitats are present within the project site in an area known as "Cedar Swamp." Historically this area was dominated by large, old-growth western redcedar (Thuja plicata); however, these trees have since been harvested. Cedar Swamp is now dominated by willow (Salix sp.) and cottonwood (Populus balsamifera), with scattered occurrences of young western redcedar. Cedar Swamp is discussed further in Section 3.4.1.3.

The vegetation communities described above are common throughout the Southern Washington Cascades Province. In the proposed project site, these communities are maintained primarily through forest management. Because the project is located within private commercial timber lands, existing forest management practices are expected to continue for the foreseeable future. The total acreage of each habitat type was calculated during the 2003 surveys; however, because of active forest rotation schedules, some of these areas have been harvested. Aerials photos from 2009 were used to update the habitat maps from 2003 with recent timber harvests (Figure 3.4-1). The updated acreages of each habitat type can be found in Table 3.4-1.

Grass-forb, brushfield/shrub, and conifer forest habitat types are present along West Pit Road. However, the band along the road that is within the project bounds is too narrow to map on Figure 3.4-1.

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Figure 3.4-1

Source: GeoDataScape. Habitat Types

Table 3.4-1
Habitat Types within the Project Site

Habitat Type	Area (acres)
Grass-Forb Stand	522
Brushfield/Shrub Stand	103
Conifer-Hardwood Forest	310
Conifer Forest	209
Riparian Deciduous Forest	8
Total	1,152

In addition, the Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species database was searched for the area in and around the project site. No sensitive habitat features such as snags, talus, or Oregon white oak were identified in or within one mile of the project site. The project site is not located within any known wildlife corridor, flyway, foraging area, or migratory route.

Comment: Just because "the project site is not located within any known wildlife corridor, flyway, foraging area, or migratory route" does not mean that these do not exist on site. The whole Columbia Gorge region is a well known bird migration route so why would this area be exempt. Flying predators love ridges and ridges are where SDS proposes to put whirling death

blades which probably won't do the predators much good. I'm sure the Audobon Society will be glad to provide SDS and BPA with facts and figures on migrating birds.

3.4.1.3 Wetlands

No wetlands or wetland indicators were identified within the project site study area (the turbine corridors and proposed access roadways). One wetland was identified outside the study area perimeter west of turbines C1-C4 (Figure 3.4-2). This wetland is labeled as "Cedar Swamp" on the USGS map and is listed as palustrine unconsolidated bottom, semi-permanently flooded, impounded (PUBFh) on the National Wetland Inventory (NWI) (Appendix C-2).

Cedar Swamp is classified as a Category II wetland according to the Washington State Wetland Rating System for Eastern Washington (Ecology 2004). The standard wetland buffer for Category II wetlands enforced by Skamania County is 100 feet. The Cedar Swamp wetland is over 150 feet from the nearest proposed turbine string or proposed road.

A preliminary review of the NWI was conducted for the area encompassing the construction access. Results indicate that wetlands occur along SR 14 near White Salmon, Washington (Figures 3.4-3a and 3.4-3b). The NWI does not show the presence of wetlands along any of the local secondary and forest roads proposed to be used by the project. As the NWI is based on historic aerial photography interpretations, field investigations were conducted in May and July 2009. These investigations confirmed that wetlands do not occur along the local secondary and forest roads. See Section 3.3 for a discussion of surface water features such as streams.

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Figure 3.4-2

Source: GeoDataScape. Project Site Wetland
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Figure 3.4-3a
Job No. 33758687 East Access Route NWI Wetlands

Whistling Ridge Energy Project
Conditional Use Permit Application 33758687_156.cdr

Figure 3.4-3b
Job No. 33758687 West Access Route NWI Wetlands

3.4.1.4 Special Status Plant Species

Several sources were used to identify special-status plants that have been documented or have the potential to occur within the vicinity of the proposed project, including:

• Listed and Proposed Endangered and Threatened Species and Critical Habitat; Candidate Species; and Species of Concern in Skamania County (USFWS 2009a)
• A Washington Natural Heritage Program (WNHP) record search of known special status plant locations in the vicinity of the project site (WNHP 2003a and 2009)
• Rare Plant List for Skamania County (WNHP 2003b and 2009)

These data indicated that no federal-listed plant species are known to occur in the vicinity of the project site. However, four WNHP sensitive plants occur within 2 miles of the project site, including branching montia (Montia diffusa), Suksdorf's desert parsley (Lomatium suksdorfii), Siskiyou false hellebore (Veratrum insolitum), and golden chinquapin (Chrysolepis chrysophylla). Two additional special status plant species are reported as historically occurring in the vicinity of the project site, including bolandra (Bolandra oregana) and white-top aster (Sericocarpus rigidus). Three occurrences of the Oregon white oak/Idaho fescue (Quercus garryana/Festuca idahoensis) vegetation community, a WNHP high-quality plant community, are documented within 2 miles of the project site (WNHP 2003a and 2009). These are located along the Columbia and White Salmon Rivers.

Initial surveys were conducted in May and June 2003, and followed methods described in the US Bureau of Land Management Survey Protocols for Survey and Manage Strategy 2 Vascular Plants (Whiteaker et al. 1998). Survey dates were selected to encompass all or a portion of the blooming times of all special status plants potentially occurring in the project site. Surveys were conducted within a 300-foot corridor centered on proposed turbine strings and associated access roads, and a 100-foot corridor centered on existing roadways that were identified as needing improvement (Figure 3-4-4). Special status plant surveys also were conducted in proposed locations for the Operations and Maintenance facility, substation, and staging areas. During the 2003 surveys, no special status plant species or plant communities were detected on the project site. A detailed account of survey methods and results, as well as a list of plant species observed during vegetation surveys, can be found in Appendix C-3.

Because turbine locations were changed from the initial alignment, field surveys conducted prior to the March 2009 Application submittal did not cover 100 percent of the proposed project area. Additional surveys were conducted in May and July 2009 to supplement the previous studies and included West Pit Road and underground cable routes where potential special status plant habitat could exist (Figure 3.4-4). During this survey, two WNHP Watch List species were observed within the project area: phantom orchid (Cephalanthera austiniae) and gnome plant (Hemitomes congestum). Watch List species are afforded no protection by any agency. Most species on the Watch List are no longer actively tracked because they were found to be more abundant than previously thought.

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Figure 3.4-4
Job No. 33758687 2003-2006, 2009 Rare Plant Survey Areas

3.4.1.5 Special Status Wildlife Species

Seven special-status wildlife species are known to occur within the vicinity of the proposed project: bald eagle (Haliaeetus leucocephalus) golden eagle (Aquila chrysaetos), northern goshawk (Accipiter gentilis), pileated woodpecker (Dryocopus pileatus), Vaux's swift (Chaetura vauxi), olive-sided flycatcher (Contopus cooperi) and western gray squirrel (Sciurus griseus). One species, the northern spotted owl (Strix occidentalis caurina), has been surveyed extensively within the project area and never detected and is therefore considered not to occur. Two additional special status species, Keen's myotis (Myotis keenii) and Townsend's big-eared bat (Corynorhinus townsendii), may occur but have not been identified in prior surveys. These species are summarized in Table 3.4-2. This section provides a detailed account of each species, their status within the project area, and a summary of surveys conducted within the project area.

Table 3.4-2
Federal and State Special Status Species
with the Potential to Occur in the Vicinity of the
Whistling Ridge Energy Project Site

Common Name Scientific Name Washington StateStatus
Federal Status Potential to Occur

BIRDS
Bald eagle Haliaeetus leucocephalus Sensitive Species of Concern,
Bald Eagle Protection Act
Known to Occur
Golden eagle Aquila chrysaetos Candidate Bald Eagle Protection Act
Known to Occur
Northern goshawk Accipiter gentilis Candidate Species of Concern Known to Occur
Northern spotted owl Strix occidentalis caurina Endangered Threatened Does not Occur
Olive-sided flycatcher Contopus cooperi -Species of Concern Known to Occur
Pileated woodpecker Dryocopus pileatus Candidate -Known to Occur
Vaux's swift Chaetura vauxi Candidate -Known to Occur

MAMMALS
Western gray squirrel Sciurus griseus Threatened Species of Concern Known to Occur
Keen's myotis Myotis keenii Candidate -May Occur
Townsend's big-eared bat Corynorhinus townsendii Candidate Species of Concern May Occur

Bald Eagle

The bald eagle is a state and federal species of concern, and also protected under the Bald Eagle Protection Act of 1940 (16 United States Code [USC] 668-668d, 54 Stat. 250) which prohibits the taking, possession and commerce of such eagles. In Washington, bald eagles are year-round residents. In addition, many bald eagles from northern areas migrate south to Washington during the winter. In Washington they occur generally in coastal waters or near large inland lakes or

rivers. They are considered "fairly common" during the winter near the project site, but likely occur nearby year round (BirdWeb 2009). The Columbia River is approximately two miles south of the project site, and the White Salmon River is approximately three miles east of the project site. These are the two nearest likely foraging locations for bald eagles. One bald eagle was recorded on the project site in 2009 during surveys for northern goshawk. In addition, three

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bald eagles were observed during the winter of 2008–2009 during baseline avian surveys. Two were observed flying within the rotor-swept area, and one below.

Golden Eagle

The golden eagle is a Candidate under the Endangered Species Act and also protected under the Bald Eagle Protection Act of 1940 (16 USC 668-668d, 54 Stat. 250) which prohibits the taking, possession and commerce of such eagles. In Washington, golden eagles are year-round residents, primarily in the eastern part of the state. The project area is at the westernmost edge of their year-round distribution, where they are considered "uncommon" (BirdWeb 2009). Golden eagles require open areas with large, rocky cliffs or large trees. They are often found in alpine parkland and mid-elevation clear-cuts, as well as shrub-steppe area and open forests. Although they soar at high altitudes, they drop down to the ground to capture prey. They prey on mid-sized mammals such as marmots, rabbits, ground squirrels, and birds.

Two golden eagles were recorded during the fall of 2004. The timing of this observation was consistent with localized or longer distance migration of this species in the fall. One was observed flying at a height within the rotor-swept area, and one was observed flying above the rotor-swept area. None were recorded during the summer of 2006 during baseline avian studies in the project area, which is consistent with the project site being outside of the species breeding distribution.

Comment: So, bald eagles and golden eagles, both under protection from the Federal government, were observed in the project area. They could be subject to lethal harm from the whirling blades of the turbines. Where is the de minimis analysis of any "taking" that would result from this project?
There is a troubling attitude among some of the public and among some officials that it's okay if birds get killed because energy is being produced and we humans need energy. Well, it's not okay if birds get killed. There are cumulative impacts to the entire food chain when predators are killed off. Trophic cascade effect anyone? We humans do not exist on this planet in a vacuum. Everything and all life and life's processes are interconnected.

Northern Goshawk

The northern goshawk is categorized as a "species of concern" by the USFWS, and as a "listing candidate" for sensitive, threatened or endangered species by the State of Washington. Goshawks inhabit a wide variety of forest habitats, including true fir (red fir, white fir, and subalpine fir), mixed conifer, lodgepole pine, ponderosa pine, Jeffrey pine, montane riparian

deciduous forest and Douglas-fir. Goshawk nest sites tend to be associated with patches of relatively large, dense forest; however, home ranges often consist of a wide range of forest age classes and conditions. Nest sites tend to be positively correlated with proximity to water or meadow habitat, forest openings, level terrain or "benches," northerly aspects and patches of larger, denser trees, although variation in habitat associations does occur (USFS 2002). Although they inhabit and hunt dense forest sites, they also hunt in open areas. They hunt on the wing, and by swooping down on ground-dwelling prey.

In Washington State, goshawks occur year-round and in some areas only during the non-breeding seasons. The project site is located in an area where either may occur, and the eastern slope of the Cascades is considered the most common place to find this "uncommon" species (BirdWeb 2009). This species is generally non-migratory. Some birds move to lower elevations in the winter.

Northern goshawks were recorded during avian surveys during the fall of 2004 and the summer of 2006. A total of five individuals were sighted; two during the fall and three during the summer (Figure 3.4-5). They were observed flying both within and above the rotor-swept height during surveys. Results of these surveys are detailed in Appendix C-4.

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In response to the baseline data, and in order to better understand these sightings, the Applicant commenced multi-year, species- and season-specific biological surveys for Northern Goshawk. These surveys were developed based on best available survey protocols described below, and in consultation with WDFW. Northern goshawk surveys were conducted during the spring and summer seasons in 2004, 2008, and 2009, which are the time of year when goshawks would be most expected to occur. Surveys occurred on properties managed by SDS, Broughton Lumber and adjacent private land.

In 2004, protocol-level surveys were conducted in suitable habitat located in four core project sections, including the provincial home range radius of 0.5 mile around the core area (see Map 7, Appendix C-5). Suitable habitat was identified using topographic maps and aerial photography. Survey stations were establish at 0.2-mile intervals on roads and trails located in suitable habitat within 0.5 mile of a proposed wind turbine location. Potential goshawk habitat was surveyed in accordance with "Survey Methodology for Northern Goshawks in the Pacific Southwest Region" (USFS 2002). Two rounds of surveys were completed, including 185 calling stations each time. All raptor species responses detected during surveys also were recorded. No Northern Goshawks were recorded during the 2004 surveys. Detailed methodology and results for northern goshawk surveys can be found in Appendix C-5.

In 2008, the potential survey area for the northern goshawk was determined by protocol parameters outlined in the Northern Goshawk Inventory and Monitoring Technical Guide (USFS 2006), consultation with WDFW biologists, and GIS analysis. The survey area was established by placing a 150-foot buffer around the turbine string layout, and then adding an additional 2,624 foot buffer per protocol (see map in Appendix C-6). Forest stands with greatest potential to contain suitable habitat structure and composition to support northern goshawk were identified

using GIS data and aerial photographs. Criteria for selecting stands included stand age greater than 25 years, and an average tree diameter at breast height of at least 12 inches. Based on these criteria, 1,100 acres was identified for surveys (Figure 3.4-5).

It was determined that the "Broadcast Acoustical Survey" methodology would be used for a two-year survey effort (2008 and 2009). Biologists completed two protocol surveys at 136 calling stations during the 2008 goshawk survey season. The first survey was conducted during the nesting period, and the second during the fledgling period. No northern goshawk responses were documented during either of the two site visits in 2008. In 2009, in addition to the two rounds of Broadcast Acoustical Surveys, two rounds of "Intensive Search" surveys were completed. These surveys were conducted where the turbine alignment extended north from prior project design. No goshawks were recorded during either type of surveys in 2009. Detailed methodology and results for 2008 can be found in Appendix C-6. The full methods and results for the 2009 surveys can be found in Appendix C-7.

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Figure 3.4-5
Job No. 33758687 2008-2009 Northern Goshawk Survey Locations

Northern Spotted Owl

The Applicant conducted surveys and analysis to confirm the absence of northern spotted owls or spotted owl activity centers in the vicinity of the proposed project. Additionally, the Applicant coordinated and met with USFWS regarding its surveys and analysis for the northern spotted owl.

On April 9, 2009, the Applicant met with the USFWS to discuss the proposed project. On May 14, 2009, the USFWS met the Applicant at the site for a site visit. On July 13, 2009 and September 14, 2009, the Applicant met with USFWS to further discuss the studies that have been performed for northern spotted owl. This section documents all the information that Whistling Ridge Energy LLC obtained from its discussions with USFWS and the surveys and analysis conducted by SDS.

As detailed below, extensive surveys indicate that neither northern spotted owls nor northern spotted owl activity centers are present in or around the proposed project area. In addition, the project would not be located within a habitat area designated as critical or identified as essential to owl recovery. Given the extensive survey record confirming the absence of northern spotted owls, the proposed the Project will not pose a risk of taking northern spotted owls under the Endangered Species Act Section 9 and its regulations (50 CFR § 17.3).

Northern Spotted Owl Distribution and Status

The northern spotted owl is one of three spotted owl subspecies, and the only one found in

Washington State. They are distributed from extreme southwestern British Columbia to northern California. In Washington State, they inhabit the Eastern and Western Cascades, Western Lowlands and Olympic Peninsula Provinces. Within these regions, northern spotted owls are associated with a variety of areas containing suitable habitat for nesting, roosting, foraging and dispersal. They prefer forest habitats characterized by multi-layered canopy and a high incidence of large trees that provide suitable structure for nesting and roosting. They have large home ranges and use large tracts of land containing late successional forests. Fragmented forest habitats may be used for dispersal and foraging. They will nest in stick nests of northern goshawks, on clumps of mistletoe, in large tree cavities, on broken tops of large trees, or on large branches or cavities in bands and rock faces.

Northern spotted owls are designated as threatened under the Endangered Species Act (16 USC §§ 1531-1544), as well as under Washington State law (WAC 232-12-297). Because they are listed under the Endangered Species Act, USFWS has designated northern spotted owl critical habitat and issued a northern spotted owl recovery plan (USFWS 2008). In addition, the Endangered Species Act prohibits the "take" of northern spotted owls, which includes modifying habitat in a manner that impairs significant behavioral patterns and results in actually killing or injuring an animal (50 CFR § 17.3).

As described in detail below, the project is not located within habitat designated as critical or identified as essential to northern spotted owl recovery. In addition, the owls prefer forest habitats characterized by multi-layered canopy, and a high incidence of large trees that provide suitable structure for nesting and roosting. No such forests are present within the project site. Most importantly, however, extensive surveys following USFWS protocol indicate that the

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project is not sited in or near northern spotted owls or spotted owl activity centers. Two historical nesting sites on public lands near the property have not been used in over six and eight years, respectively, and are therefore no longer considered occupied site centers pursuant to USFWS protocol and state law. Based on these facts, this analysis concludes that northern spotted owls will not be "taken" by the proposed project.

Survey History and Description

The Applicant contracted with Turnstone Environmental Consultants (Turnstone) to conduct wildlife investigations on the proposed project site. Surveys were conducted in 2003, 2004, 2008 and 2009, and all surveys followed the Protocol for Surveying Proposed Management Activities that May Impact Northern Spotted Owls (USFWS 1992). In addition, the National Council for Air and Stream Improvement (NCASI) surveyed historical activity centers near the project site each year since 1994, the last six years of which were under contract with the DNR. These surveys were conducted in support of an ongoing owl demography monitoring study and, while focused on the same activity centers, placed more emphasis on the nest cores. Table 3.4-3 summarizes the survey results.

Table 3.4-3

Whistling Ridge Energy Project Site Survey Results for
Northern Spotted Owl at the Mill Creek Core Areas

Year Mill Creek Core Survey Results Moss Creek Core Survey Results
Spotted Owl Barred Owl Spotted Owl Barred Owl
2009 no response male observed no response pair observed
2008 no response male & female
observed
no response pair observed
2004 no response present* no response present*
2003 no response present* no response no response

* = Surveyor unable to determine sex of barred owl detected.
Project Area Surveys. Surveys were conducted in suitable habitat located in and adjacent to the proposed project site, and included two historical spotted owl activity centers, discussed in further detail below. Suitable habitat was conservatively defined as stands with 12-inch diameter at breast height and greater with a canopy cover of 60 percent or greater6. Suitable habitat was identified using topographic maps, aerial photography, and stand classification data from Whistling Ridge Energy LLC. Figure 3.4-6 indicates the location of survey calling stations.

6 Features that support nesting and roosting typically include a moderate to high canopy closure (60 to 90
percent); a multilayered, multi-species canopy with large overstory trees (with diameter at breast height greater than 30 inches); a high incidence of large trees with various deformities (large cavities, broken tops, mistletoe infections, and other evidence of decadence); large snags; large accumulations of fallen trees and other woody debris on the ground; and sufficient open space below the canopy for spotted owls to fly (Thomas et al. 1990.)

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Figure 3.4-6
Job No. 33758687 2008-2009 Spotted Owl Calling Points

During the 2003–2004 survey periods, the project site was surveyed from March–July 2003 using the one-year survey methodology, and from March–August 2004 using the two-year survey methodology. USFWS protocol allows a six-visit survey followed by three-visit survey over two years to rule out northern spotted owls for the following two years (USFWS 1992). No northern spotted owls were detected during the 2003–2004 surveys. See Maps 1 through 5 in Appendix C-5 for 2004 survey locations.

More recent northern spotted owl surveys were conducted from May–July 2008 and May–August 2009 (Appendices C-6 and C-7). Surveys were conducted using the USFWS protocol two-year survey methodology, which requires a minimum of three visits for two consecutive

years in order to determine presence or absence (USFWS 1992). Surveys were implemented in all potentially suitable habitat located within a 1.8-mile radius of the corridor. This area totaled 14,901 acres. The survey area also included the historical activity centers discussed below, which expanded the survey area by 7,222 acres. No northern spotted owls were detected in either the survey area or historical activity centers in the 2008–2009 surveys.

The project's proposed layout was finalized in October 2008 and included additions to proposed turbine strings, removal of previously proposed turbines, and identification of areas requiring improved roadways. Changes to the project layout resulted in lands added to the project area that, in some cases, were not included in wildlife surveys conducted prior to October 2008. The final turbine alignment did expand the area requiring owl surveys; however, because the survey area had included spotted owl activity centers located at the northern reach of the proposed project site, the area was accounted for in the 2008 and 2009 surveys.

Historical Activity Centers. Two historical northern spotted owl activity centers, Mill Creek (master site no. 0991) and Moss Creek (master site no. 1003), are located near the project site (Figure 3.4-6). The nest cores of both activity centers are located on public lands managed by DNR and USFS. The Mill Creek activity center is composed of contiguous but scattered northern spotted owl habitat located on private and DNR lands. This site was designated in 1992, and the last known spotted owls were a non-nesting pair seen in 2000 (Table 3.4-4 and T. Flemming, personal communication.). Since 2000, neither the surveys conducted by Whistling Ridge Energy LLC nor DNR/NCASI have found northern spotted owls.

The Moss Creek activity center is composed of patchily distributed northern spotted owl habitat and a mix of rural residential lands, industrial timberland, and lands administered by DNR and USFS. This activity center was established in 1994 and the last known spotted owl was a male detected in 2002 (Table 3.4-4). Since that time, the Turnstone and DNR surveys have not resulted in any detections.

The longstanding absence of any northern spotted owls at these locations suggests that these historic site centers likely no longer qualify for special protection. As of January 1, 2009, an site center is defined under WAC as the location of status 1, 2 or 3 northern spotted owls, where status 1 means a male and female owl pair (i.e., observed in proximity to each other, a female detected on a nest, or one or both adults observed with young); status 2 means a male and female owl where pair status cannot be determined; and status 3 means either (a) "the presence or response of a single owl within the same general area on three or more occasions within a breeding season" where there is no response by an owl of the opposite sex after a complete

survey, or (b) three or more responses over several years (WAC 222-16-010). Only sites documented in substantial compliance with WDFW protocols and quality control methods will be considered site centers (WAC 222-16-010).

Table 3.4-4
DNR/NCASI Mill Creek and Moss Creek Owl Data

Year Mill Creek (T4N R10E) Moss Creek Campground (T4N R9E)
Spotted Owl Barred Owl Spotted Owl Barred Owl
2008 no response pair no response male
2007 no response no response no response male
2006 no response pair no response male
2005 no response male no response pair
2004 no response pair no response pair + 1 juvenile
2003 no response no response no response no response
2002 no response male male pair + 1 juvenile
2001 no response -no response -
2000 pair -nest -

Source: Washington Department of Natural Resources (T. Flemming, personal communication). 2003-2008 surveys conducted by
NCASI pursuant to DNR contract; 2000-2002 survey data provided to DNR by NCASI.

No surveys—whether in substantial compliance with WDFW protocols or otherwise—have documented status 1, 2 or 3 owls on the Mill Creek or Moss Creek sites since January 1, 2009, when the new rule became effective. Furthermore, the Turnstone and DNR/NCASI surveys affirmatively documented the absence of northern spotted owl site centers at these locations. Therefore, the Mill Creek and Moss Creek locations do not meet the definition of a site center under Washington regulations. Even if they did, they should qualify for decertification under the interim decertification rules passed by the Washington Forest Practices Board7.

Similarly, the USFWS protocol allows a historical activity center to be considered unoccupied if no owl responses are obtained after three years of surveys using protocol guidelines (USFWS 1992). These surveys do not need to be consecutive; the protocol anticipates that surveys will be conducted in one- or two-year increments (not three). In any case, however, the DNR/NCASI surveys of the Moss Creek and Mill Creek centers were conducted annually and obtained no responses over six and eight years, respectively. Based on the collective Turnstone and DNR/NCASI surveys, these centers should therefore be considered unoccupied pursuant to the USFWS protocol.

Barred Owl Concerns. During the 2003–2004 and 2008–2009 project area surveys described above, only barred owls were detected. In addition, Whistling Ridge Energy LLC learned that the USFWS is in the process of revising its protocol for 2010 to include special guidance for conducting surveys where barred owls are detected. After the 2008 surveys, the Applicant consulted with USFWS, and was instructed to follow existing survey protocol (K. Berg, personal communication). The Applicant did so, but also incorporated USFWS's suggestion that

7 See Washington State Register 09-02-202 (amending WAC 222-16-080(6)(b) (re-promulgated in Washington State Register 09-10-012 [April 24, 2009]) (emergency rule effective for 2009 calendar year establishing "spotted owl conservation advisory group" to determine whether

northern spotted owl site center need be maintained based on surveys demonstrating absence of the owls).

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biologists visit core areas during the day to look for northern spotted owls, which might not respond in the presence of barred owls. Biologists conducted three day-time site visits over the seasonal breeding window in 2009 but did not detect any northern spotted owls.

NSO Habitat Designations

Federal and state habitat designations can be useful in characterizing the importance of certain areas to spotted owl life cycles and recovery. In this case, as described in the subsections below, the project would not be located in the areas designated as most critical to northern spotted owls or identified as essential to their recovery. The project would be located within a state-delineated management area, but the absence of a site center means that management restrictions would not be applicable to the project site.

Managed Owl Conservation Area and Designated Critical Habitat Area. The USFWS released its Final Recovery Plan for the Northern Spotted Owl in 2008 (USFWS 2008), which recommends a network of habitat blocks, or managed owl conservation areas (MOCAs), on federal lands in the west-side provinces in the northern spotted owl range. MOCAs were designated to correspond to the owl's full geographic distribution. The recovery plan's strategy focuses on managing MOCAs to support self-sustaining populations of 15 to 20 spotted owl pairs, as well as spacing and managing areas between MOCAs to permit owl movement between and among MOCAs (USFWS 2008). The revised critical habitat designation, also issued in 2008, concluded that the MOCA network is "sufficient to achieve the recovery" of northern spotted owls and designated only those lands as critical (73 Federal Register page 47,328). The project site is not located within, adjacent to, or between federally designated MOCAs or, therefore, corresponding designated northern spotted owl critical habitat (Figure 3.4-7).

Conservation Support Area. In the final recovery plan, USFWS delineated Conservation Support Areas (CSAs) to support designated MOCAs. CSAs are areas between or adjacent to MOCAs where habitat contributions made by private, state or federal land managers "are expected to increase the likelihood that [spotted owl] recovery is achieved, shorten the time needed to achieve recovery, and/or reduce management risks..." (USFWS 2008). In Washington State alone, the USFWS delineated 2,163,453 acres as CSA habitat.

The proposed project site is located within the Klickitat CSA, a 425,114-acre mix of private, state and federal lands (Figure 3.4-7). The project site's location within a CSA does not mean that spotted owls are present in the project area, or that modification of the area will compromise owl recovery. As the USFWS explained in excluding CSAs from designated critical habitat, "although recognized as potentially helpful in achieving recovery plan goals, these areas were not considered essential to the conservation of the species" (73 Federal Register page 47,331). Although CSAs are not unimportant, the recovery criteria for northern spotted owl populations "do not require the contributions of [CSAs] as an essential component of recovery" (USFWS

2008). Moreover, to the extent CSA lands provide an important function in supporting the MOCA network, it is worth noting that the project site constitutes just 0.27 percent of Klickitat CSA lands and 0.053 percent of Washington CSA lands.

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Project Area

Figure 3.4-7

Source: 2008 Final Spotted Owl Recovery Plan (USFWS 2008). Map of Spotted Owl MOCAs and CSAs

Spotted Owl Special Emphasis Area. In 1996, Washington State finalized a rule identifying ten spotted owl special emphasis areas (SOSEAs) to complement protections provided by the Northwest Forest Plan. The proposed project is located in the southernmost portion of the White Salmon SOSEA which, like the Klickitat CSA, was delineated with the goal of providing demographic support (WAC 222-16-086[10]). In such areas, any suitable spotted owl habitat should be maintained (WAC 222-10-041[1]). More specifically, all suitable habitat within 0.7 mile of a site center plus 2,605 acres (approximately 40 percent) of suitable habitat within the median home range circle (a 1.8 mile radius) is assumed necessary to maintain the site center's viability (WAC 222.10.041[4]). This 40 percent suitable habitat level corresponds with USFWS research on the level of habitat necessary to avoid take and support recovery8. According to DNR, both the Mill Creek and Moss Creek site centers exceed 40 percent of the suitable habitat9.

The proposed project will not alter that fact. Therefore, the SOSEA limitations on habitat use or modifications do not restrict use of the project site as a wind turbine energy facility (WAC 222.10.041[4]). Forest practices within a SOSEA are therefore allowed to proceed so long as they do not affect the 40 percent suitable habitat threshold.

Habitat Conservation Plans. A review of USFWS habitat conservation plans issued in the Pacific region indicates that there are no spotted owl-related habitat conservation plans applicable in or near the project area (USFWS 2009b).

The Applicant has sited the proposed project to avoid habitat areas deemed critical to northern spotted owls or essential to their recovery. Surveys conducted pursuant to USFWS protocol indicate that spotted owls are not present in or near the project, and that nearby historical sites are no longer occupied pursuant to USFWS protocol or state law. Because there are no spotted owls or activity centers present in the project area, no project impacts to northern spotted owls are expected. Finally, the project would not affect the White Salmon SOSEA's 40 percent suitable habitat level and therefore is not restricted by Washington's forest practice regulations. Given the extensive record and review, this project does not pose a risk of taking northern spotted owls under The Endangered Species Act Section 9.

Olive-Sided Flycatcher

The olive-sided flycatcher is considered a federal species of concern. This species occurs in forest habitat and adjacent cleared areas such as burned areas or clear cuts. They perch high in treetops and catches insect prey on the wing in cleared areas. They breed in Washington State and also migrate through during August to areas in South America. The olive-sided flycatcher is considered a fairly common breeder in the area encompassed by the project site (BirdWeb 2009). There were 21 birds observed during summer 2006 avian surveys, and six recorded during the spring of 2009. All 21 observed in 2006 were within the rotor-swept area; it is not reported in 2009 how many were in the rotor-swept area. None were recorded during the fall of 2004 or the winter of 2008–2009 (Appendix C-4).

8 See 61 Federal Register 21,426, 21,428 (May 10, 1996) (proposed 4(d) rule for northern spotted owls
setting 40 percent target); USFWS (2008) Appendix C at 77 (targeting 35–40 percent).

9 Data provided by DNR which shows Mill Creek at 48 percent and Moss Creek at 55 percent (J. Herman, personal communication)

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Pileated Woodpecker

The pileated woodpecker is considered a Washington State Candidate for listing. This species occurs in all forest types as long as large trees exist for nesting and foraging. Old-growth and mature forest therefore are a common association. In Washington, pileated woodpeckers occur year round but are uncommon in the vicinity of the project site. They are more common west of the Cascades. During avian surveys in the project area, six pileated woodpeckers were recorded in the fall, two during the winter, seven during the spring, and none in the summer. None occurred within the rotor-swept area (Appendix C-4).

Vaux's Swift

Vaux's swift is considered a Washington State Candidate for listing. It typically occurs in coniferous or mixed forest of mature age where snags are available for roosting and nesting. They forage for insects in flight in open sky, typically above woodlands or bodies of water. In Washington, Vaux's swift breeds widely, and the project site is considered within the range of common occurrence for the species. They migrate south during the fall. During fall 2004 avian surveys, 15 Vaux's swifts were recorded in three groups, 87 percent of which occurred within the rotor-swept area. Four were recorded in two groups during the summer of 2006, all of which occurred within the rotor-swept area. Eleven were recorded during the summer of 2009; the number within the rotor-swept area was not reported in this study (Appendix C-4).

Western Gray Squirrel

The western gray squirrel is listed as a "threatened" species by WDFW. In Washington, western gray squirrel distribution has been reduced to three geographically isolated populations: the "Puget Trough" population, centered in Thurston and Pierce counties, the "South Cascades" population, located in eastern Skamania County, Klickitat and Yakima Counties, and the "North Cascades" population, located in Chelan and Okanogan Counties. Western gray squirrels are arboreal species. Although they forage on the ground, this species rarely strays far from trees. They use tree canopies for cover and nesting. Western gray squirrels prefer areas where contiguous tree canopy allows arboreal travel in a minimum of a 198 feet (60 meters) radius around the nest (Ryan and Carey 1995). Western gray squirrels are diurnal species, with most activity occurring during morning hours. This species is most active during August and September, when this species is collecting and storing food for winter (Ryan and Carey 1995). The principal food source for the gray squirrel is acorns; however, conifer seeds are also eaten (Dalquest 1948). While pine nuts and acorns are considered essential foods for accumulating body fat in preparation for winter, green vegetation, seeds, nuts, fleshy fruits, and mushrooms also are consumed (WDW 1993, Carraway and Verts 1994, Ryan and Carey 1995).

Western gray squirrel surveys were implemented by Whistling Ridge Energy LLC on lands located in and adjacent to the project site in 2004, 2008, and 2009 (Figure 3.4-8). Surveys conducted in 2004 included a general search for western gray squirrels and nests while conducting northern goshawk station placement and surveys. Two adult western gray squirrels were identified during that effort.

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Figure 3.4-8
Job No. 33758687 Western Gray Squirrel Survey Areas

An additional protocol survey was completed following methods described in Surveys for western gray squirrel nests on sites harvested under approved forest practice guidelines: analysis of nest use and operator compliance (Van der Haegen et al. 2004). No western gray squirrels were detected during protocol surveys. Detailed methodology and results for western gray squirrel surveys in 2004 can be found in Appendix C-5.

Additional western gray squirrel surveys were completed by Whistling Ridge Energy LLC in 2008 and 2009. Prior to implementing field surveys, the Applicant consulted with a WDFW biologist to identify survey criteria and methodology. It was determined that gray squirrels surveys should be performed in areas where project activities would result in the removal of potential western gray squirrel habitat or structural modification (i.e., stand thinning), and these surveys should include unaltered habitat within 400 feet of potential disturbance.

An area consisting of a 1,050-foot buffer around the proposed turbine layout to account for lands that may be affected by the project, and also the 400-foot buffer of undisturbed lands, was identified for potential survey. This area included 1,420 acres; however, only 738 acres were identified as potentially suitable to support western gray squirrel (Figure 3.4-8). Surveys were

conducted following methods described by Van der Haegen, Van Leuven, and Anderson (2004). Surveyors searched for individuals and nests, focusing mainly on gray squirrels, but also noting other species. When possible, historical use by western gray squirrels was determined. No gray squirrels or nests were detected during these surveys in 2008 or 2009. Detailed methodology and results can be found in Appendices C-6 and C-7.

Keen's Myotis

Keen's bat is considered a Washington State Candidate for listing. In Washington, this species is recorded as occurring on the Olympic Peninsula and Cascade Mountains (BCI 2009). The project site is likely on the very edge of the distribution range for Keen's myotis. Although little is known about this species, it is believed to rely on old-growth forests. Keen's myotis likely roosts in tree cavities and forages in dense coniferous forests. Bat surveys conducted during 2007, 2008, and 2009 (Appendices C-8, C-9, and C-10) did not have the ability to detect individual species of bats. Instead, bats are grouped into species with either "high-frequency" calls or "low-frequency" calls. Keen's myotis is considered part of the "high-frequency" group. Based on the lack of detailed information of this species life history and habitat requirements and nature of the bat surveys conducted it is difficult to conclude with certainty what the likelihood of Keen's bats occurring on the project site. However, due to the lack of old-growth or mature forest types within the project area and the predominant commercial forestry use of the property, the likelihood of occurrence on the site is considered to be low.

Townsend's Big-Eared Bat

Townsend's big-eared bat is a federal species of concern and a Washington state candidate for listing. Its distribution spans the western US, and occurs primarily in desert scrub and pine forest regions (BCI 2009). In the spring and summer, females form maternity colonies in mines, caves or buildings. In winter they hibernate in caves and abandoned mines. These maternity and roosting locations are sensitive to disturbance. It forages after dark in upland areas. Bat surveys conducted on the project site during 2007, 2008, and 2009 (Appendices C-8, C-9, and C-10) did not have the ability to detect individual species of bats. Instead, bats are grouped into species

Comment: This is inadequate data and analysis and should be redone using the best available science techniques to gather enough data on this particular species so that a thorough analysis of its habitat and numbers can be made.

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with either "high-frequency" calls or "low-frequency" calls. Townsend's big-eared bat is considered part of the "low-frequency" group. Based on lack of detailed information on this species distribution and the nature of the bat surveys conducted on the site, it is difficult to conclude with certainty the likelihood of Townsend's big-eared bats occurring on the project site. There are no known roosting structures or maternity colonies occurring in the vicinity of the project area. Consequently, the likelihood of occurrence on the site is considered to be low.

3.4.1.6 Other Wildlife Species

In addition to studies of special status species, other studies of birds and bats at the Project site have been ongoing since 2004. Birds were surveyed during all seasons of the year in the fall of 2004, summer of 2006, winter 2008–2009 and spring of 2009. Results are summarized in Appendix C-4.

Bats were surveyed during the fall of 2007, summer–fall of 2008 and summer–fall of 2009. Results of those studies are presented in Appendices C-8, C-9 and C-10. The timing of these surveys is expected to capture the peak of bat use during the breeding season (summer) and migration (fall). Information on the potential for other taxonomic groups to occur on the project site is based on general distribution and habitat requirements for individual species.

Birds

Avian surveys were conducted on the project site across all seasons in multiple years. There were: 53 surveys during the fall migration period (September 11 to November 4, 2004), 45 surveys during the breeding/nesting season (May 15 to July 14, 2006), 47 surveys during winter and 116 surveys during spring (December 4, 2008 to May 29, 2009).10

Study protocol followed methods described by Reynolds et al. (1980). An 800-meter circular plot was centered on each observation point (Figure 3.4-9). All observations, behavior, and flight patterns of birds in and near plots were recorded. Flight patterns, such as direction of travel and flight altitude also were recorded.

Observations of birds beyond the 800-meter radius were recorded; however, these data were analyzed separately from data collected from survey plots. The location of raptors, other large birds, or species of concern observed during counts was recorded on field map. A list of all birds recorded on the project site (including those during special status species surveys) is provided in Table 3.4-5. Appendix C-4 contains full results of fall 2004, summer 2006, winter 2008-09 and summer 2009 surveys.

10 In its 2003 Energy Overlay Environmental Impact Statement, Klickitat County also included two survey locations at or in proximity to the Project site. These included surveys during the spring and summer 2003 seasons. See Appendix B to the Klickitat County Energy Overlay Draft Environmental Impact Statement (Kennedy/Jenks Consultants 2003).

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Figure 3.4-9
Job No. 33758687 2004, 2006, 2008 and 2009 Bird Survey Locations

Table 3.4-5
Birds Observed in the Project Area Across All Seasons

Species(Common Name)	Winter	Fall	Summer	Spring
American crow		X		
American goldfinch	X	X	X	X
American kestrel		X		
American robin	X	X	X	X
Bald eagle	X	X		
Band-tailed pigeon		X	X	X
Barred owl		X		
Barn swallow			X	
Bewick's wren		X		
Black-capped chickadee	X	X	X	X
Black-headed grosbeak		X	X	
Black-throated gray warbler			X	
Brown-headed cowbird		X	X	
Bullock's oriole			X	
Canada goose		X		
Cassin's finch		X		
Cassin's vireo			X	
Cedar waxwing		X		
Chestnut-backed chickadee	X	X	X	X
Chipping sparrow		X	X	
Clark's nutcracker		X		
Common raven	X	X	X	X
Cooper's hawk	X	X	X	X
Dark-eyed junco	X	X	X	
Downy woodpecker	X	X	X	
Evening grosbeak		X	X	
Golden-crowned kinglet	X	X	X	X
Golden-crowed sparrow		X		
Golden eagle		X		
Gray jay		X		
Hairy woodpecker	X	X	X	
Hammond's flycatcher			X	X
Hermit thrush			X	X
Hermit warbler			X	
House wren			X	X
Lazuli bunting			X	X
Lincoln's sparrow		X		
Macgillivray's warbler			X	X
Mountain chickadee	X	X		
Mourning dove		X		
Nashville warbler			X	X
Northern flicker	X	X	X	X
Northern harrier	X	X		
Northern goshawk	X	X		

Northern rough-winged swallow X
Northern saw-whet owl
Olive-sided flycatcher X X
Orange-crowned warbler X X
Osprey X

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Species(Common Name)
Winter Fall Summer Spring
Pileated woodpecker X X X
Pine siskin X X
Prairie falcon X
Purple finch X X X
Red crossbill X X X
Red-breasted nuthatch X X X X
Red-breasted sapsucker X
Red-tailed hawk X X X
Red-winged blackbird X
Ruby-crowned kinglet X X X
Rufous hummingbird X X
Ruffed grouse X X
Say's phoebe X
Sharp-shinned hawk X X X
Snowy owl X
Song sparrow X X X
Sooty grouse X
Spotted towhee X X X
Steller's jay X X X X
Swainson's thrush X
Townsend's solitaire X X
Townsend's warbler X
Tree swallow X X
Turkey vulture X X X
Varied thrush X X
Vaux's swift X X X
Violet-green swallow X X
Warbling vireo X X
Western bluebird X X X
Western tanager X X X
Western wood-peewee X X
White-breasted nuthatch X
White-crowned sparrow X X X
Wild turkey X
Willow flycatcher X
Wilson's warbler X X

Yellow-rumped warbler X X X
Yellow warbler X

A total of 87 species were recorded during avian surveys. Passerines (songbirds) were the most abundant avian group overall. American robin, dark-eyed junco and white-crowned sparrow were the three most frequently observed birds across all seasons. Mean overall bird use in the study area was low compared to these other wind resource areas studied; ranking 19th compared to 24 other wind resource areas (Figure 9 in Appendix C-4). Eleven species of raptors were observed: American kestrel, bald eagle, Cooper's hawk, golden eagle, northern harrier, northern goshawk, osprey, prairie falcon, red-tailed hawk, sharp-shinned hawk, and turkey vulture. Red-tailed hawk was by far the most observed raptor, followed by Cooper's hawk and sharp-shinned hawk. Mean annual raptor use was 0.28 raptors per plot per 20-minute survey, which is a standardized way to measure use in order to compare results to avian use at other sites. This

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annual rate is low relative to raptor use at 36 other wind-energy facilities that implemented similar protocols and had three or four season surveys. Mean raptor use in the study area was low compared to these other wind resource areas; ranking 29th compared to 36 other wind energy
facilities (Figure 7 in Appendix C-4).

Fall Migration Surveys (2004)

General avian surveys identified 39 species of bird in the survey area (Figure 3.4-9). Passerines (songbirds) were the most abundant avian group, constituting 87.4 percent of observations. This group was observed with the greatest frequency (94.4 percent of surveys). Raptors were the second most abundant group observed; however, this group represented only 4.9 percent of observations. Raptors were observed during 38.5 percent of the surveys, followed by woodpeckers (22.6 percent of surveys) and doves/pigeons (9.3 percent of surveys).

The most common species at the project site included dark-eyed junco, American goldfinch, Steller's jay, common raven, and white-crowned sparrow. The species of birds most frequently observed during fall surveys were common raven, Steller's jay, dark-eyed junco, red-breasted nuthatch, and golden-crowned kinglet. Eight species of raptor were observed during the survey. Those with the highest use of the site were sharp-shinned hawk, Cooper's hawk, and red-tailed hawk. The highest raptor use observed at the site during 2004 surveys occurred between September 11 and October 12, 2004. These data do not indicate that any areas within the proposed site have substantially higher raptor use than others.

No federal or state listed endangered or threatened avian species were observed during the survey period. Four state candidate species were observed: golden eagle, northern goshawk, pileated woodpecker, and Vaux's swift. Two State Monitor species were observed, including four single turkey vultures and four groups totaling 27 western bluebirds. Detailed results and summary tables can be found in Appendix C-4.

Summer Surveys (2006)

Fifty-five species of birds were observed during summer breeding and nesting surveys in 2006 (Figure 3.4-9). Passerines were the most abundant group (88.5 percent), followed by raptors and woodpeckers (3.3 percent each), and doves/pigeons (3.2 percent). The most frequently observed groups were passerines (100 percent of surveys), woodpeckers (35.6 percent of surveys), and raptors (31.1 percent of surveys). Species with the highest use of the project site included white-crowned sparrow, red crossbill, western tanager, spotted towhee, and MacGillivray's warbler. The most frequently observed species included white-crowned sparrow (77.8 percent of the surveys), western tanager (75.6 percent of surveys), spotted towhee (64.4 percent of surveys), MacGillivray's warbler (48.9 percent), and dark-eyed junco (48.9 percent). Three species of raptors were observed, including red-tailed hawk, northern goshawk, and sharp-shinned hawk. Raptor use in the fall was only slightly higher than during the summer breeding season. The data do not indicate that any portions of the project site have substantially higher raptor use than other areas. For all bird species combined, use of the project site by avian species was slightly higher during the summer breeding season than during the fall migration period. Detailed results and summary tables can be found in Appendix C-4.

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Winter/Spring Surveys (2008-2009)

Fifteen species of birds were observed during winter surveys in 2008–2009, and 65 species during the spring of 2009. In winter, observations were dominated by common raven, American robin, and unidentified finches. The number of species and number of individuals observed in the spring were the highest across all seasons. Similar to other seasons, passerines were the most abundant group, followed by woodpeckers and then raptors. Individual species with the highest use included American robin, dark-eyed junco and yellow-rumped warbler. The data do not indicate that any portions of the project site have substantially higher raptor use than other areas. Detailed results and summary tables can be found in Appendix C-4.

The WDFW Priority Habitats and Species database was searched for known occurrences of raptor nests. The only recorded nest was for an osprey, more than one mile east of the project site.

Bats

Bat acoustic studies were conducted for the Project in 2007, 2008 and 2009. Detailed information on these investigations can be found in Appendices C-8 (2007), C-9 (2008) and C10 (2009).

Bat acoustic studies conducted from 2007 through 2009 were implemented at various locations on the project site. The goal of the studies were to: (1) characterize the local bat populations in a variety of habitats, (2) identify areas of high usage by bats, and (3) characterize the frequency of bat usage of areas representative of where turbine strings would be located. Studies were done across several seasons to estimate annual variation during breeding and periods of migration.

For all studies, passive Anabat® II echolocation detectors coupled with Zero Crossing Analysis Interface Modules (ZCAIM; Titly Electronics Pty Ltd., NSW, Australia) were used in all survey years. Anabat detectors record bat echolocation calls using a broadband microphone. Bat species are generally grouped into those that emit low frequency (<35 kHz) or high frequency (= 35 kHz) calls. The units of activity equaled the number of bat passes, and were used to calculate the number of bat passes per detector night (Hayes 1997). The data thus indicate the level of bat activity rather than absolute abundance.

In 2007, detectors were placed at two locations from August 20 through October 21 (Figure 1 in Appendix C-8). The 2007 studies were intended to provide a general census of bat activity in recently reforested or young forest areas. This type of habitat is similar to what would be found in the areas within 150 feet of the proposed turbines, on the two sides of the turbines. The northernmost detector was located just outside the proposed turbine corridor. This detector was initially placed at ground level; however, it was raised to a height of 130 feet (40 meters) on September 7. The southernmost detector was located outside the project site; however, it was placed in habitat believed to be representative of that found on the project site. The southernmost detector was placed at ground level, and remained at that location for the duration of the study.

Due to equipment failures in 2007, both Anabat detectors were only operable for 24 percent of the sampling period, amounting to 45 detector-nights. Bat activity was similar between north and south ground level Anabat units (mean = 11.67 ± 2.0 and 9.6 ± 4.1, respectively). Bat

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activity recorded after the northern Anabat detector was elevated was much lower (mean = 2.47 ± 1.1) than that recorded at ground level. A list of bat species with potential to occur on the projects site based on range maps, divided between high-frequency and low-frequency species, can be found in Table 3.4-6.

Table 3.4-6
Bat Species Likely to Occur in the Project Area, Based on Range-Maps

Species Status
California bat
Big brown bat
Fringed myotis FCo, SM
Hoary bat
Keen's bat SC
Little brown bat
Long-legged bat FCo, SM
Pallid bat SM
Silver-haired bat
Townsend's big-eared bat FCo, SC
Western long-eared bat

Western pipistrelle SM
Western red bat
Western small-footed bat
Yuma myotis

Status Codes:
FCo – Federal Species of Concern
SC – State Candidate
SM – State Monitor

The bat acoustic survey effort was increased to four locations during the 2008 survey period, and the survey period covered July 3 to October 7, 2008. This period corresponded with summer breeding and fall bat migration. Four survey locations were used, all on the ground (Figure 1 in Appendix C-9). Two were located in clear cuts (SB1 and SB4), one immediately adjacent to a wetland (SB2) and one in a road corridor (SB3). Sampling at the wetland was intended to characterize bat occurrence a location known to have a high level of usage, because wetlands are frequently used as foraging and drinking habitat for bats. Similarly, sampling in the road corridor was intended to capture the highest levels of use within the project site, because road corridors are frequently used by bats to travel between roosting and foraging locations. The two clear cut sites were most representative of the types of habitat where turbines would be located for the proposed project. However, because all detectors were located on the ground, sampling did not entirely capture the potential bat use of the rotor-swept area.

Table 3.4-7 summarizes bat activity at all survey locations. During the 2007 and 2008 surveys, the two clear cut sites (SB1 and SB4) had an average of 14.30 and 73.76 bat passes per night, respectively. The wetland (SB2) and road corridor (SB3), recorded much higher levels of use, at

178.03 and 327.25 bat passes per night, respectively. Seasonal activity patterns were similar for the two clear cut survey locations, with the highest bat activity occurring during the months of July and August. Bat activity in the wetland area was highest during the month of July. In comparison to 2007, bat numbers were on average higher because in 2007 this peak use period was not captured during the sampling period (in 2007 sampling did not begin until August 20).
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Table 3.4-7
Average Bat Detections Per Night During Three Survey Years

Year Location Habitat Ground or Elevated
Average per Detector Night
2007 North Young forest G 11.67
North Young forest E 2.47
South Young forest G 9.60
2008 SB1 Clear cut G 14.30
SB2 Wetland G 178.03
SB3 Road corridor G 327.25
SB4 Clear cut G 73.76

2009 WR1 Clear cut G 17.28
WR2 Clear cut E 10.59
WR3 Young forest G 11.04
WR4 Young forest E 1.53
WR5 Clear cut G 6.43
WR6 Clear cut E 1.64

In 2009, the bat survey efforts were further refined to focus specifically on the types of locations where turbines would be sited. Three locations were selected (Figure 3.4-10), two in clear cuts and one in a recently reforested area (young forest). In addition, each sampling location had a pair of Anabat detectors; one on the ground and one elevated on a meteorological tower. The elevated detectors were intended capture bat use in what would likely be the rotor-swept area, which is where potential bat-turbine collisions would occur. The ground level detectors were intended to provide some comparison to prior year studies, most of which were done at ground level. The numbers of bat detections in 2009 are summarized in Table 3.4-7.

In general, elevated detectors recorded fewer bats than their ground level counterparts, indicating that bat occurrence within the rotor-swept area is lower than those at lower flight elevations. For all years (2007–2009), elevated bat detections were the lowest numbers recorded, between 1.53 and 10.50 bat passes per night. All bat detections in 2009 were collected by Anabat equipment installed in locations most representative of potential turbine locations. The detections were notably lower than some of the other records in 2008 taken from equipment placed in areas of known high bat use.

Amphibians and Reptiles

Amphibians and reptiles likely to occur on the project site are those species that can tolerate disturbance associated with managed timber activities and drier-than-average conditions for at least part of their life cycle. This includes such common species as Long-toed salamander (Ambystoma macrodactylum), Rough-skinned newt (Taricha granulose), Ensatina (Ensatina eschscholtzii), Pacific treefrog (Pseudacris (=Hyla) regilla), and northwestern garter snake (Thamnophis ordinoides). Breeding may occur within the intermittent drainages located in the northeast corner of the site, within cedar swamp, or substantial roadside drainage ditches. These species may stray further from water sources during heavy rains or during winter conditions.

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Figure 3.4-10
33758687_162.cdr
Figure 3.4-10
Job No. 33758687 2009 Bat Survey Locations

Mammals

Several large mammals have the potential to occur within the project site. Known priority

wildlife habitats, including mule deer and black-tailed deer (Odocoileus hemionus) winter range, are present east of Underwood Mountain, extending to lands to the north/northeast. Winter range for Columbia black-tailed deer is present in lands west of Underwood Mountain, and extends north and south from the project site. Elk (Cervus elaphus) winter range is present throughout the project site. Other species likely to occur throughout the region include cougar (Puma concolor), bobcat (Lynx rufus), coyote (Canis latrans), and black bear (Ursus americanus). Douglas squirrels (Tamiasciurus douglasii) were recorded during surveys for the western gray squirrel.

Fish

No fish have been documented within the project site. The project is on a ridgeline between Underwood Mountain and the White Salmon River, approximately 3 miles north of the Columbia River. The ridgeline is oriented in a north-south direction. The Columbia River receives runoff via the White Salmon drainage area east of the site and via the Little White Salmon River west of the site. The White Salmon River contains evolutionarily significant units and designated critical habitat for three species listed as threatened under the Endangered Species Act: (1) Lower Columbia River Chinook, (2) Middle Columbia River Steelhead, and (3) Columbia River Chum (Figure 3.4-11).

A tributary to Little Buck Creek is located in the northeast portion of the project site. This tributary is typed as a non-fish-bearing stream. No special status fish species are present in Little Buck Creek. However, Buck Creeks drains into Northwestern Lake, which in turn drains into the White Salmon River.

West Pit Road crosses an unnamed drainage. This stream had observed flow through the existing culvert under West Pit Road at the time of the July 2009 field visit. However, the surface flow and the channel disappear downstream of the culvert. There is no surface water connection to Lapham Creek or the Little White Salmon River. Fish are not present in this stream.

3.4.1.7 Noxious Weeds

The project site contains several noxious weed species, which are nonnative, invasive plants. The weed species observed during field visits to date are listed in Table 3.4-8.

The Washington Noxious Weed Control Board identifies lists of noxious weed species that require control, eradication, or monitoring. Class A noxious weeds are nonnative species with a limited distribution within a state and require eradication to reduce the potential of becoming more widespread.

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Figure 3.4-11

Job No. 33758687 Designated Critical Fish Habitat

Table 3.4-8
Noxious Weed Observations

Scientific Name Common Name Status
Centaurea stoebe Spotted knapweed Class B - Designate
Cirsium arvense Canada thistle Class C - Designate
Cirsium vulgare Bull thistle Class C
Cytisus scoparius Scot's broom Class B - Designate
Daucus carota Queen Anne's lace Class B
Hypericum perforatum Common St. John's-wort Class C
Leucanthemum vulgare Ox-eye daisy Class B
Linaria dalmatica Dalmatian toadflax Class B - Designate
Rubus armeniacus Himalayan blackberry Class C
Senecio vulgaris Common groundsel Class C

Class B noxious weeds are regionally abundant, but may have limited distribution in some counties. In Washington, in regions where a Class B noxious weed is unrecorded or of limited distribution, prevention of seed production is required. In these areas the weed is a "Class B designate." However, in regions where a Class B species is already abundant or widespread, control is a local option. In these areas the weed is a "Class B non-designate."

Class C noxious weeds are already widely established, but placement on the state list allows counties to enforce local control if desired. Skamania County has designated a few Class C weeds. Within the project boundary, only Canada thistle (Cirsium arvense) is a designated Class C weed.

3.4.2 IMPACTS

This section identifies the potential impacts to biological resources as the result of both construction and operation of the proposed project.

3.4.2.1 Proposed Action
Skamania County Critical Areas Ordinance Regulation

The Skamania County Critical Areas Ordinance recognizes the following as critical areas: watershed protection areas (including wetlands, streams, creeks, rivers, ponds and lakes); critical aquifer recharge areas; fish and wildlife habitat; frequently flooded areas; and geologically hazardous areas (including landslide hazards, erosion hazards and volcanic hazards). All critical areas have a required no-touch buffer setback based on the classification of the critical area, as set forth in Skamania County Critical Areas Ordinance Title 21A. All buffers are undisturbed buffers and must be free of any logging, road building, or other development activities including, but not limited to, vegetation removal, grading, filling, mowing, or placement of structures. The project would not affect any critical areas or buffers.

Comment: Skamania County has failed to update its Title 21A Critical Areas Ordinance, to date. They began the process in 2006 and have not managed to get an updated Critical Areas Ordinance done, and this is 2010. There are new, updated Best Available Science and Best Management Practices that are not in Skamania County's Title 21A. Skamania County has also not updated its Title 21 Zoning, having failed to ram through a version that would have industrialized Skamania County. The version supported by the Skamania County commission was soundly rejected after appeals to the Hearings Examiner, who issued a 37-page decision (see attachment) stating that the county could not implement the commissioners' zoning unless they did an Environmental Impact Statement. The county declined—that is the reason they punted (and circumvented the public) Whistling Ridge a.k.a. Saddleback to EFSEC.

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Construction

Habitat Types

Construction and operation of the project would require the removal of vegetation in some areas to accommodate roadway construction and improvement, turbine siting, staging, and construction. The impacts of project construction would not differ substantially from customary forestry activities on the site. Each turbine footing and foundation would measure approximately 3,100 square feet. Vegetation surrounding each turbine would be managed according to the following specifications:

- A circular area extending 50 feet from each turbine tower base would be harvested and graveled
- From 50 feet to 150 feet from the base of the turbine towers, tree heights would be limited to 15 feet above the elevation of the base of the turbine
- From 150 feet to 500 feet from the base of the turbine towers, tree height would be limited to 50 feet above the turbine base within an area formed by a 90 degree arc centered on the ordinary downwind direction (Figure 2-4 in Chapter 2)

The A and F turbine strings and parts of the B and C turbine strings would be accessed by existing roads. Modifications to these roads are anticipated in order to support the long and heavy loads required for delivery of the wind turbine systems. An estimated 5.1 miles of roads within the project site would require improvements as a result of the proposed project. The majority of new roads would be constructed to access parts of the B and C turbine strings, and all of the D and E turbine strings. Access to these turbines would require 2.4 miles of new roadway. All roads used to access turbines would be maintained throughout the life of the project.

All vegetation clearing would be completed using crawler tractors, rubber-tired skidders, mobile feller-bunchers, or cable yarding equipment. This equipment is typically used in timber harvest, and is currently used to harvest other stands located on SDS property. Logs would be transported by truck to SDS facilities in Bingen, Washington. Except for permanently cleared areas, cleared areas would be replanted with trees within one year following completion of construction (typically the following spring). Areas where trees are permanently removed would

be replanted with appropriate native grasses and low-growing shrubs. Because trees would be cleared for the purpose of the project, cleared areas would be considered "forest conversion" under the Washington Forest Practices Act. However, cleared areas would still be reforested in accordance with typical commercial forestry management practices when feasible. Permanent and temporary impacts to habitat types within the project site can be found in Tables 3.4-9 and 3.4-10.

West Pit Road was widened in the summer of 2009. Additional road improvements would be required during the construction phase of the project. However, the loss and modifications of habitat types from these modifications are anticipated to be minor. Tables 3.4-9 and 3.4-10 show that temporary and permanent impacts of the project to the habitat types found on the site and along the portion of West Pit Road that would be improved.

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Table 3.4-9
Temporary Impacts from Project Elements to Habitat Types (acres)

Habitat Type
Turbine
Corridora
Road
Corridorb
Transmission
Line Corridorc
Operations and
Maintenance
Area
Substation
Area
RoadwayCorridor
Outside
Project Aread Total
Grass-Forb Stand 15.12 6.57 0.68 0 0 0.23 22.60
Brushfield/Shrub
Stand 2.31 1.61 0.61 0 0 0.66 5.19
Conifer-
Hardwood Forest 11.56 2.05 1.08 0 0 0.40 15.09
Conifer Forest 7.40 3.07 0.02 0 0 0.23 10.72
Riparian
Deciduous Forest 0 0 0 0 0 0 0
TOTAL 36.39 13.30 2.39 0 0 1.52 53.60

a. Total temporary impact area of proposed development within the 650-foot corridor measured on either side of an imaginary line
connecting each turbine string.

b. The temporary impact area of proposed roadway modifications within the project site area encompassed by a 100-foot corridor
along all roads. Does not include overlap of transmission corridor or turbine corridor.
c. The temporary impact area of proposed development within the area encompassed by a 100-foot corridor along all project
transmission lines. Does not include overlap of road corridor or turbine corridor.
d. The area of temporary impact is based on the assumption that 5 feet on both sides of the roadway would be restored after
construction of permanent roadway modifications.

Table 3.4-10
Permanent Impacts from Project Elements to Habitat Types (acres)

Habitat Type
Turbine
Corridora
Road
Corridorb
Transmission
Line Corridorç
Operations and
Maintenance
Area
Substation
Area
RoadwayCorridor
Outside
Project Aread Total
Grass-Forb Stand 10.47 7.17 0.36 5.0 7.10 0.68 30.78
Brushfield/Shrub
Stand 1.31 1.98 1.14 0 0 1.97 6.40
Conifer-
Hardwood Forest 8.67 1.82 1.95 0 0 1.20 13.64
Conifer Forest 4.94 4.23 0 0 0 0.70 9.87
Riparian
Deciduous Forest 0 0 0 0 0 0 0
TOTAL 25.39 15.20 3.45 5.00 7.10 4.55 60.69

a. Total permanent impact area of proposed development within the 650-foot corridor measured on either side of an imaginary line connecting each turbine string.
b. The permanent impact area of proposed roadway modifications within the project site area encompassed by a 100-foot corridor along all roads. Does not include overlap of transmissioncorridor or turbine corridor. Also excludes existing roadway.
c. The permanent impact area of proposed development within the area encompassed by a 100-foot corridor along all project transmission lines. Does not include overlap of road corridor or turbine corridor.

d. The permanent impact area is based on the assumption that the existing roadway is 20 feet wide, the new roadway would be 25 feet wide, and that an additional 5 feet on each side of the roadway would be permanently cleared.

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Wetlands

No wetlands or wetland buffers are located within the project footprint. Therefore, no wetlands or buffers are expected to be affected by construction of the project.

A review of the National Wetland Inventory indicates that wetlands may occur along SR 14 but not along County or private roads proposed for the project's construction access and turbine delivery routes. No improvements to SR 14 are anticipated to be required, and therefore no wetland-related impacts would occur. Roadway improvements to the County or private logging roads are not expected to affect wetlands. This information was confirmed through field investigations performed in May and July 2009.

See Section 3.3 for a discussion of impacts to other surface water features such as streams.

Special Status Plant Species

No federal- or Washington State-listed plant species have been documented at the site during multiple field surveys. Therefore, no project-related impacts are anticipated from construction of the proposed project. Two plant species on the WNHP Watch List, gnome plant and phantom orchid, were observed within areas that may be cleared for construction of the project. Both species are growing in areas that have been previously clearcut and were able to re-establish. In addition, there are no regulatory requirements to protect these species.

Special Status Wildlife Species

Potential construction related impacts to bald eagle, golden eagle, northern goshawk, northern spotted owl, olive-sided flycatcher, pileated woodpecker, Vaux's swift, western gray squirrel, Keen's myotis, and Townsend's big-eared bat are discussed in this section.

Bald Eagle. Four bald eagles were recorded on the project site. The project site is over two miles away from the nearest known bald eagle foraging habitat, which is the Columbia or White Salmon Rivers. Therefore bald eagle use of the project site is considered infrequent and sporadic. The removal of coniferous forest as a result of project construction that far away from suitable foraging habitat would not impact bald eagles. No breeding habitat would be affected.

Golden Eagle. Golden eagles have been recorded on the project site; however they are considered an uncommon visitor to this region of Washington State. They are known to forage in mid-elevation clear cut habitat. The permanent removal of 21.31 acres of grass-forb stand or shrub habitat for construction of turbine strings and transmission line corridors would decrease the amount of foraging habitat available to golden eagles within the project site. Any golden

eagles potentially using the project site for foraging would likely be temporarily deterred from using the site by construction vehicle and personnel activity.

Northern Goshawk. Northern goshawks were recorded on the project site. Although they were recorded during the summer, no evidence of nest or breeding individuals was observed during multiple years of surveys. A breeding goshawk may have a wide area of home range spanning multiple age classes of forest. They also may forage in open areas. Construction of the proposed project would result in the permanent loss of 21.86 acres of managed coniferous or mixed deciduous-coniferous forest. This would represent a loss of habitat generally suitable for goshawks, though unlikely to support breeding pairs. Goshawks also forage in open area, where

they swoop to the ground to capture prey. Approximately 17.13 acres of grass-forb habitat would be permanently lost during construction of the project.

Northern Spotted Owl. Whistling Ridge Energy LLC has sited its proposed project to avoid habitat areas deemed critical to the northern spotted owl or essential to its recovery. Surveys conducted pursuant to the USFWS protocol indicate that spotted owls are not present in or near the project, and that nearby historical sites are no longer occupied pursuant to USFWS Protocol and state law. Because there are no northern spotted owls or activity centers present in the project area, no project construction impacts are expected. Finally, the project would not impact the White Salmon SOSEA's 40 percent suitable habitat level and therefore is not restricted by Washington's forest practice regulations. Given the extensive record and review, this project does not pose a risk of taking northern spotted owls under Endangered Species Act Section 9.

Olive-sided Flycatcher, Pileated Woodpecker, and Vaux's Swift. These three avian species are all passerines with known occurrence within the project area. All three use coniferous forest for nesting. Construction of the proposed project would result in loss of 21.86 acres of forest habitat. Construction during the breeding season would likely result in disturbance of any individuals occurring in the vicinity, thereby temporarily reducing the use of further areas of habitat. Vaux's swift and olive-sided flycatchers forage on the wing over cleared areas, so it is likely that no additional habitat loss would occur for these species as the result of conversion of forested area to clearing (grass-forb stand).

Western Gray Squirrel. The construction of the proposed project would result in the permanent removal of 21.86 acres of managed coniferous or mixed deciduous-coniferous forest. The gray squirrel prefers habitat where contiguous tree canopy allows arboreal travel in a minimum of a 198-foot (60-meter) radius around the nest (Ryan and Carey 1995). Current forest management practices on forest within the proposed project site has created habitat not generally suitable for this species, due to fragmentation of mature forest stands. Contiguous forest habitat located on the project site will not develop in the future. The project site also contains very few oak trees, and those that were observed were of small stature (less than 20 feet tall), stunted, and growing in openings on exposed rocky slopes in shallow soils. Acorn crops from oak trees are an important food source for western gray squirrels, and the lack of this primary food source may deter use of the project site by gray squirrels. Because habitat for this species is considered rare

or of moderate/poor quality on the project site, impacts to western gray squirrel due to loss of coniferous forest habitat are expected to be negligible.

Keen's Myotis and Townsend's Big-Eared Bat. The special status bat species may occur in the project site, based on their documented distribution. Surveys for bats were not able to identify all bats to species level. Both species may utilize mature or old-growth forested habitats within the project area, if suitable nest sites were available. Permanent loss of 21.86 acres of forest habitat and 21.31 acres of shrub/grass/forb habitat may result in a small reduction of suitable habitat for these species. No known roosting or breeding locations would be impacted.

Other Wildlife Species

In general, wildlife in the project area could be affected by the construction of the Project through the loss of suitable habitat, potential fatalities during clearing or grading of the construction area, and disturbance/displacement from construction activity and personnel

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occupying the site. Fragmentation of the remaining habitat also could occur, although current land management practices result in an existing source of ongoing fragmentation on the site. Therefore, permanent vegetation removal and temporary construction disturbance are the primary impacts as a result of the proposed project.

Birds. Direct mortality to birds and/or bird nests could occur during the initial clearing or grading of the construction areas. Additional disturbance could occur indirectly to birds or bird nests occurring adjacent to construction areas. This may occur if a nest or a primary foraging area is nearby. In areas where temporary disturbance would occur, it is anticipated that birds would generally reoccupy restored habitats with time. Some habitat would be permanently converted from one type (forest) to another (clear cut or grass forb). This would result in a temporary disturbance, likely followed by recolonization of the area by a different suite of birds.

Bats. Impact to bats as a result of construction would be minimal unless known nesting or roosting sites were removed. Disturbance or displacements to bats as a result of construction activities would be minimal because bats are primarily active during the night, when construction would not occur.

Amphibians/Reptiles. No wetlands or other surface water bodies are proposed to be filled as a result of the project. Therefore, no amphibian breeding habitat would be directly impacted. Amphibians and reptiles would potentially experience direct loss of non-breeding habitat and further fragmentation of the remaining habitats.

Mammals. No direct mortality of large mammals is anticipated as a result of construction because these species are able to relocate away from heavy equipment used in clearing and grading. Some avoidance of the area due to disturbance would likely occur on a temporary basis. Permanent removal of vegetation would result in the loss of some habitat for these species. The

conversion of one habitat type to another would likely not reduce the amount of area available to the more commonly-occurring species, which utilize multiple habitat types during their life cycle.

Fish. No impacts are anticipated from construction of the project. No perennial streams or fish are located within the construction areas within the project boundaries. In addition, the construction will occur when the ephemeral drainages that cross the access roads are dry. This will eliminate any potential impacts from sediment. The unnamed drainage on West Pit Road may be temporary impacted if this segment of the road needs to be widened. However, no fish are present in this stream.

Comment: See my separate memo on the inadequacy of BPA's input into this DEIS and the most definite impacts on fish and their habitats.

Noxious Weeds

While no Class A weeds have been observed in the project area, several Class B and C weeds are present. Noxious weeds can threaten the general ecological health and diversity of native ecosystems. Noxious weed infestations are the second leading cause of wildlife habitat degradation.

Because many weeds are adapted to disturbed conditions and can establish immediately after construction, constructing the project could foster the spread of noxious weeds throughout the project area. Noxious weeds would be managed within the project site. By implementing BMPs, weeds are not anticipated to spread further as a result of the development of the project.

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Operation

Habitats

Operation of the project would result in no further impacts to habitats on the project site.

Wetlands

No wetlands or wetland buffers are located within the project operation area. Therefore, no wetlands or buffers are expected to be impacted by operation of the project.

Special Status Plant Species

No impacts to special status plant species are anticipated from the operation of the project.

Special Status Wildlife Species

In order to determine which species (including special status species) are most at risk for turbine

fatalities, a relative index to collision risk (R) was calculated for bird species observed in the survey area using the following formula:

R = A*Pf*Pt

Where A = mean use for species i averaged across all surveys, Pf = proportion of all observations
of species i where activity was recorded as flying (an index to the approximate percentage of time species i spends flying during the daylight period), and Pt = proportion of all flight height observations of species i within the rotor-swept height. This is a relative index, which only illustrates which species may be the most susceptible to turbine fatalities. For the Project, the exposure index ranges from 0.29 on the high end (red crossbill) to 0 for many species (indicating that they were recorded on the site but not flying within the rotor swept area. If a species was recorded on the site, but never flying at all, then the exposure index would not be applicable. Exposure indices for all species across all years of survey can be found in Appendix C-4.

This index does not account for differences in behavior other than flight characteristics (i.e., flight height and proportion of time spent flying). In this impacts section, point count data were used to establish diurnal indices of avian use, and how these indices compare to other wind resource areas in the United States.

Bald Eagle. Bald eagles, although now fairly common in Washington State, are likely uncommon visitors to the project site. They are unlikely to nest or forage within the project site because there is no suitable habitat. An exposure index of 0.02 was calculated for the bald eagle (Appendix C-4). The potential for ongoing occurrence of bald eagle on the project site is very low. The potential for bald eagle fatalities as a result of turbine strike is also considered to be extremely low.

Golden Eagle. Two golden eagles were recorded on the project site during the fall of 2004. One occurred within the rotor-swept area and one was above. The golden eagle's exposure index at Whistling Ridge is reported to be less than 0.01 (Appendix C-4). Therefore, golden eagles are considered to be at relatively low risk for collision with turbines at this site.

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Golden eagles typically soar at a height within the rotor-swept area of most modern turbines, and swoop to the ground to capture prey. Golden eagles have recently experienced their first mortality at a wind turbine site in Washington State (Durbin 2009). Numerous golden eagles have been killed at the Altamont wind turbine project in California, indicating that this species is susceptible to turbine collision. Golden eagles have experienced mortality greater than would be anticipated based on their level of occurrence at Altamont Pass (Appendix C-4).

The creation of cleared areas re-vegetated with low growing herbaceous species around turbines may increase the risk of golden eagles entering the rotor-swept area if they forage for prey located beneath turbines. However, given their rare occurrence on the project site, the potential for golden eagles to experience a turbine collision is extremely low.

Northern Goshawk. Extensive surveys over four years recorded no goshawks on the project site, indicating that if they do occur, it would be extremely rare. Based on these years of species specific surveys using multiple methodologies, they were recorded more than would be expected during baseline surveys in 2004 and 2006. Based on those records, the exposure index for northern goshawk at the project site is reported to be 0.02. This includes the occurrence of five individuals, four of which were flying within the rotor swept area. Similar to the golden eagle, this species may be at risk of increased foraging activity in open areas around turbines because they hunt for prey that occurs on the ground in cleared areas. However, given their rare occurrence on the project site, the potential for turbine related fatalities for this species is extremely low.

Northern Spotted Owl. Whistling Ridge Energy LLC has sited its proposed project to avoid habitat areas deemed critical to the northern spotted owl or essential to its recovery. Surveys conducted pursuant to the USFWS protocol indicate that spotted owls are not present in or near the project, and that nearby historical sites are no longer occupied pursuant to USFWS Protocol and state law. Because there are no northern spotted owls or activity centers present in the project area, no project construction impacts are expected. Finally, the project would not impact the White Salmon SOSEA's 40 percent suitable habitat level and therefore is not restricted by Washington's forest practice regulations. Given the extensive record and review, this project does not pose a risk of taking northern spotted owls under Endangered Species Act Section 9.

Western Gray Squirrel. No impacts to western gray squirrels are anticipated from operation of the proposed project.

Olive-sided Flycatcher, Pileated Woodpecker, and Vaux's Swift. These three species are encompassed in the bird discussion under "Other Wildlife."

Keen's Myotis and Townsend's Big-Eared Myotis. These two bat species are encompassed in the bat discussion under "Other Wildlife."

Other Wildlife Species

Birds. Potential operation-related impacts to avian species include turbine collision and displacement. Based on the exposure index derived from abundance and flight behavior, the species most likely to collide with wind turbines located at the project are red crossbills (R = 0.29), American robin (R = 0.14), common raven (R = 0.23), and western bluebird (R = 0.11). The full list of species and their exposure index can be found in Appendix C-4.

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The highest index for any raptor was 0.05 for red-tailed hawk, indicating a risk approximately six times lower than for the red crossbill. A regression analysis using data collected from the Whistling Ridge site and 13 other new-generation wind turbine projects found a significant correlation between raptor use and raptor mortality. Based on this analysis and surveys on the project site, the estimated a raptor/vulture fatality rate is zero per MW/year, which is an

extremely low estimate compared to many wind projects (Appendix C-4). Further, data collected from the project site indicate that the area is not within a major migratory pathway, at least during fall migration.

Comment: "...the area is not within a major migratory pathway, at least during fall migration."?!? What is this supposed to mean? That it might be a migratory pathway during other seasons. The entire Columbia River Gorge and its environs is recognized by Audobon and other reasoning people as a migration corridor for a large number of species. Ridges attach raptors. Turbines are sited on ridges. Turbines kill raptors. Not good. This contradictory DEIS statement should be clarified.

Vaux's swifts, western bluebirds (a State Monitor species), and olive-sided flycatchers were commonly observed flying at rotor-swept heights, and some turbine-related mortality may occur for these species over the life of the project. One prairie falcon and multiple turkey vultures (both State Monitor species) were observed at rotor-swept heights. Turkey vultures are known to have very low susceptibility to turbine collisions (Orloff and Flannery 1992). Pileated woodpeckers were recorded on the site, but not flying. Osprey (a State Monitor species) was recorded during northern goshawk surveys, which was separate from the baseline avian studies and therefore not included in the exposure index calculations.

These collisions would likely be rare, and it is unlikely that the Project would have any negative impacts on population levels on and near the project site. Higher numbers of Vaux's swifts and western bluebirds were recorded during fall migration, whereas olive-sided flycatcher appears to primarily use the project site for breeding.

Waterfowl, waterbirds, and shorebirds were not observed using lands within the project site during this study, and mortality involving this group is expected to be rare. Based on abundance, passerines are expected to make up the largest proportion of fatalities at the project. Post-construction mortality data collected at other wind projects in Washington and Oregon indicate that less correlation between pre-construction surveys and turbine-related mortality is observed in non-raptor species. The lack of correlation may be because most fatalities are among nocturnal migrants that are not accounted for during surveys.

The avian use information for the project site is based on detections of birds seen and/or heard calling. Because songbirds are less vocal during fall, this information may be skewed toward summer use. Similarly, the level of night migration for species associated with the project site is also not known. Risk analyses presented above provide some insight into which species are most vulnerable to turbine collision; however, estimates are based on abundance, proportion of daily activity budget spent flying, and flight height of each species. Observations were made during daylight hours, and do not take into consideration flight behavior or abundance of nocturnal migrants. Further, the analysis does not account for varying ability among species to detect and avoid turbines, habitat selection, or other factors that may influence exposure to turbine collision. As a result, actual risk may be lower or higher than indicated by these estimates (Orloff and Flannery 1992).

Bats. It is likely that some bat mortality would occur during operation; however, mortality

estimates are difficult due to our lack of understanding of why bats collide with wind turbines (Kunz et al. 2007, Baerwald et al. 2008). Several factors may aid in the assessment of potential impacts to bats, including site-specific habitat and topography, species composition, and activity

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patterns. The following impact assessment was completed by examining site-specific habitat features and bat acoustic data collected to date. Additional insight from investigations conducted at other wind projects is presented where relevant.

The number of bat detections varied greatly between the three survey years. This is based on variation in habitat surveyed and the height of detector placement. Overall, the majority of detected species were low-frequency species, such as big brown and silver-haired bats. Hoary bats made up 8.2 percent of all passes by low-frequency species. Based on studies from other wind energy projects in the Pacific Northwest, turbine fatalities would be most expected from hoary bats and silver haired bats. Big brown bats are relatively uncommon at wind turbine fatalities. At elevated stations meant to reflect the rotor-swept area, low-frequency bats were again recorded in much higher numbers than high-frequency species. This likely reflects migration flight heights and foraging preferences.

The timing of peak bat activity on the proposed project site (portions of July and August) does not coincide with when the highest levels of bat mortality have been documented at other wind projects in the US. Fatality studies have shown a peak in mortality in August and September and generally lower mortality earlier in the summer (Johnson 2005, Arnett et al. 2008). While the survey effort varies among the different studies, the studies that combine Anabat surveys and fatality surveys show a general association between the timing of increased bat call rates and timing of mortality, with both call rates and mortality peaking during the fall (Kunz et al. 2007). The highest use of the project site occurred in July and August, prior to the time that most bat mortality occurs at wind resource areas in the Pacific Northwest as well as throughout the US.

High bat activity in July and August is likely due to use of the project site by local bats during the reproductive season, when pups are being weaned and foraging rates are high. Activity beyond mid-August likely represents movement of migrating bats through the area. Activity by hoary bats also was substantially higher in July, and dropped off significantly beginning in early August. After August 31, activity for all bats was very low relative to earlier dates, indicating that most bats had left the area for winter hibernacula or warmer climates. These data indicate higher use of the project site by resident populations of bats, rather than by migrants passing through the area. Further, high bat activity levels during the breeding season, as seen on the project site, do not equate to high bat fatality rates. Low mortality has been documented during the breeding season at several wind projects, even when relatively large bat populations were present in the area (Fiedler 2004, Gruver 2002, Howe et al. 2002, Johnson et al. 2004, Schmidt et al. 2003).

Finally, no known large bat colonies are present near the proposed the Project. The nearest know hibernaculum is located near the town of Trout Lake, nearly 20 miles north of the proposed project (B. Weiler, personal communication). The project site does not contain topographic

features, such as canyons, that may funnel migrating bats toward corridors where turbines would be placed. No turbines would be constructed near wetlands or ponds, and cleared areas surrounding turbine strings would closely mimic clearcuts or young reforested areas, where to date, recorded bat activity levels on the project site were the lowest.

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Some bat fatalities are anticipated as a result of the operation of the proposed project. Variable levels of recorded use by bats across years, habitats and recording height above ground indicate that the extent of impacts is difficult to predict at this time.

Amphibians/Reptiles. No impacts are anticipated to amphibians or reptiles as a result of project operation.

Mammals. Because data on impacts to big game as a result of wind project operation is limited, it is difficult to predict the impact of the proposed project on wildlife using priority habitats on the proposed project site. Additional coordination with WDFW is ongoing, and would continue to address this resource.

Fish. No impacts are anticipated to fish as a result of project operation.

Noxious Weeds

The spread of noxious weeds is not anticipated to occur as a result of project operation with BMPs in place.

Project Decommissioning

In compliance with WAC 463-72, Site Restoration and Preservation, the Applicant will provide EFSEC with an initial site restoration plan at least 90 days prior to the beginning of site preparation. The plan will address site restoration that would occur at the conclusion of the project's operating life (estimated to be 30 years), and restoration in the event the project is suspended or terminated during construction or before it has completed its useful operating life. The plan will include or parallel a decommissioning plan for the project.

The initial site restoration plan will be prepared in sufficient detail to identify, evaluate, and resolve all major environmental and public health and safety issues presently anticipated, including potential changes to wetlands, vegetation, wildlife habitat, and noxious weeds. If impacts to biological resources are anticipated as a result of site restoration and project decommissioning, mitigation measures will be proposed as part of the plan.

3.4.2.2 No Action Alternative

Under the No Action Alternative the project would not be built. Timber harvest would still occur within the proposed project boundary, which would continue to affect habitats and potentially increase the spread of weeds. However, there would be no increased avian or bat

fatalities from turbine operations.

Other power generation facilities could be constructed and operated in the region to meet long-term needs for power, including other wind projects or generation using fossil fuels. Fossil fuel combustion would affect vegetation, wetlands, wildlife, and threatened and endangered species, including impacts related to carbon dioxide emissions. The significance of such impacts would depend on the site-specific locations and design of such facilities.

Comment: This is a totally inadequate (how many times will I have to use this word when referencing this very inadequate DEIS!) "No Action Alternative" analysis. SDS doesn't know that other generation facilities would be constructed and operated in the region—based on this DEIS, which might be a Waterloo moment for wind generation and wind farms in the region—it is also likely that wind power and its unpredictability might be reassesses and other methods of conservation found and used. There would be not "increased avian or bat fatalities from turbine operations, but there would also be less pesticide use, less impermeable surfaces built on erosion-prone ridges, less fragmentation of the environment, less impact on wildlife, less impact on humans, etc. There would be many more LESSES if this project wasn't built!!

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3.4.3 MITIGATION MEASURES

• The following mitigation measures are identified to avoid, minimize, and compensate for potential impacts to biological resources during construction and operation to the extent feasible.
• Avoid and minimize the use of overhead collector lines, which create areas where birds may congregate and perch, thus decreasing the potential for turbine collisions.
• Use of tubular turbine towers, avoiding the lattice type towers which creates areas where birds may congregate and perch, thus decreasing the potential for turbine collisions.
• Use of un-guyed meteorological towers, reducing the potential for bird collision with wires.
• Minimize the use of turbine lighting on the project site, thereby reducing the potential for birds and bats to be disoriented by lights or attracted to turbines.
• Install newer generation up-wind turbines.
• Utilize certified "weed free" straw bales during construction to avoid introduction of noxious weeds.
• Re-seed all temporarily disturbed areas with an appropriate mix of native plant species as soon as possible after construction is completed to accelerate the re-vegetation of these areas and to avoid the establishment and spread of noxious weed species.
• Implement a noxious weed control program, in coordination with the Skamania County Noxious Weed Control Board, to control the spread and prevent the introduction of noxious weed species.
• Conduct raptor nest surveys prior to construction during the breeding season (approximately April to July) in order to avoid or minimize impacts to any raptors potentially nesting on or near the project site. Construction activities requiring the surveys would include those that would remove forested areas and/or require the use of heavy equipment substantial enough to potentially disturb nesting activities.
• Implement a two year minimum post-construction avian mortality study.

• Convene a Technical Advisory Committee to evaluate the mitigation and monitoring program and determine the need for further studies or mitigation measures. The Technical Advisory Committee would be composed of representatives from WDFW, USFWS, Skamania County, and the Applicant. The role of the Technical Advisory Committee would be to coordinate appropriate mitigation measures, monitor impacts to wildlife and habitat, and address issues that arise regarding wildlife impacts during construction and operation of the project, including potential adaptive management

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opportunities. The post-construction monitoring plan would be developed in

coordination with the Technical Advisory Committee.

• Coordinate with WDFW for potential impacts to big game species (deer and elk), if appropriate.
• Prepare a SWPP for both the construction and operation phases of the project and submit to EFSEC for approval.

3.4.4 UNAVOIDABLE ADVERSE IMPACTS

The proposed project would result in permanent loss, temporary disturbance and fragmentation of existing habitat for a number of wildlife species. These impacts, while unavoidable, would take place in landscape of managed timber lands which has for many years and will continue to be a fragmented environment with ongoing disturbance. There are no impacts to wetlands, and any particularly sensitive areas would be avoided during micrositing of the turbines.

The proposed project would cause mortality to birds and bats through turbine collisions. However, the level of mortality is not anticipated to be sufficient to negatively affect the population viability of any single species.

Comment: This is a really insufferably dataless, inane statement! "Anticipation" is not science. SDS doesn't know what level of mortality would be sufficient to affect or not affect any single species. Until they gather more data and do a thorough analysis of the regional effects of wind farms on species mortality, the DEIS is incomplete and flawed in regard to bird and bat mortality rates; and, the stated non-effects of turbine collisions on species viability is totally unfounded and unsupported by any data.

It appears unlikely that the project would cause any mortality to a threatened or endangered species. Extensive surveys for northern spotted owl and northern goshawk have been conducted throughout the project area and both species are considered either completely absent or extremely rare. Golden eagles were recorded during surveys in 2004, but not in more recent surveys. Bald eagles were recorded in the winter of 2008 and summer of 2009. The potential for ongoing occurrence of either golden or bald eagles is considered extremely rare.

3.4.5 REFERENCES

Arnett, E.B., K. Brown, W.P. Erickson, J. Fielder, T.H. Henry, G.D. Johnson, J. Kerns, R.R.

Kolford, T. Nicholson, T. O'Connell, M. Piorkowski, and R. Tankersly. 2008. Patterns

of fatality of bats at wind energy facilities in North America. Journal of Wildlife

Management 72: 61–78.

Baerwald et al. 2008. Barotrauma is a significant cause of bat fatalities at wind turbines. Current Biology 18:695–696.

Berg, K. 2009. Personal communication with Jeff Reams of Turnstone Environmental via email on May 29, 2009.

BirdWeb. 2009. Internet site of the Seattle Audubon Society. Accessed on November 13, 2009 at http://birdweb.org.

Bat Conservation International (BCI). 2009. Internet site of Bat Conservation International. Access on November 13, 2009 at http://www.batcon.org.

CH2M Hill. No date. Vegetation Technical Report, Saddleback Wind Energy Project.

3-83

CH2M Hill. 2003. Rare Plant Survey Report, Saddleback Wind Energy Project.

CH2M Hill. 2007. Wetland Delineation Report, Saddleback Wind Energy Project, Skamania County, Washington. Prepared for Horizon Wind Energy LLC. Portland, Oregon.

Durbin, Kathie. 2009. Washington wind turbines claim first known eagle victim. The Columbian. May 18, 2009. Accessed at: http://columbian.com/article/20090519/NEWS02/705199958.

Carraway, L. N. and B. J. Verts. 1994. Sciurus griseus. Mammalian Species, No. 474:1–7.

Dalquest, W. W. 1948. Mammals of Washington. University of Kansas Publications, Museum of Natural History, 2:1–444.

Flemming, T. 2009. Personal communication with Devin Sahl, Turnstone Environmental. September.

Fiedler, J. K. 2004. Assessment of bat mortality and activity at Buffalo Mountain Windfarm, eastern Tennessee. Thesis, University of Tennessee, Knoxville, USA.

Franklin, Jerry F. and C.T. Dyrness. 1988. Natural Vegetation of Oregon and Washington.

Oregon State University Press.

Gruver, J. C. 2002. Assessment of bat community structure and roosting habitat preferences for the hoary bat (Lasiurus cinereus) near Foote Creek Rim, Wyoming. Thesis, University of Wyoming, Laramie, USA.

Hayes, JP. 1997. Temporal variation in activity of bats and the design of echolocation-monitoring studies. J Mammal 78: 514–524.

Herman, Jed. 2009. Personal communication with Curt Smitch. WDNR northern spotted owl habitat data. Excel spreadsheet based on GIS database.

Howe, R. W., W. Evans, and A. T. Wolf. 2002. Effects of wind turbines on birds and bats in northeastern Wisconsin. Wisconsin Public Service Corporation, Green Bay, USA.

Johnson, G. D. 2005. A review of bat mortality at wind-energy developments in the United States. Bat Research News 46:45–49.

Johnson, G. D., M. K. Perlik, W. P. Erickson, and M. D. Strickland. 2004. Bat activity, composition and collision mortality at a large wind plant in Minnesota. Wildlife Society Bulletin 32:1278–1288.

Kennedy/Jenks Consultants. 2003. Klickitat County Energy Overlay Draft Environmental Impact Statement. August.

Kunz, T.H., E.B. Arnett, B.M. Cooper, W.P. Erickson, R.P. Larkin, T. Mabee, M.L. Morrison,

M.D. Strickland, and J.M. Szewczak. 2007. Assessing impacts of wind-energy development on nocturnally active birds and bats: a guidance document. Journal of Wildlife Management 71: 2449–4486.

3-84

Orloff, S. and A. Flannery. 1992. Wind Turbine Effects on Avian Activity, Habitat Use, and Mortality in Altamont Pass and Solano County Wind Resource Areas. Work performed by BioSystems Analysis, Inc., Tiburon, CA. Sacramento, CA: California Energy Commission.

Reynolds, R. T., J. M. Scott, and R. A. Nussbaum. 1980. A variable circular-plot method for estimating bird numbers. Condor 82:309–313.

Ryan, L. A. and A.B. Carey. 1995. Distribution and Habitat of the Western Gray Squirrel (Sciurus griseus) on Fort Lewis, Washington. Northwest Science 69(3):204-216.

Schmidt, E., A.J. Piaggio, C.E. Bock, and D.M. Armstrong. 2003. National Wind Technology Center Site Environmental Assessment: Bird and Bat Use and Fatalities – Final Report.

NREL/SR-500-32981, National Renewable Energy Laboratory, Golden, Colorado.

Thomas et al. 1990. A conservation strategy for the northern spotted owl. Interagency Scientific Committee to Address the Conservation of the Northern Spotted Owl. USDA Forest Service, USDI Bureau of Land Management, USDI Fish and Wildlife Service, and USDI National Park Service. Portland, OR. 458 pp.

Turnstone Environmental Consultants, Inc (Turnstone). 2004. Final Report, Northern spotted owl, western gray squirrel and northern goshawk surveys conducted for the Whistling Ridge Wind Energy Project. Prepared for SDS Lumber Company.

———. 2009a. 2008 Final Report, Results of northern spotted owl, western gray squirrel and northern goshawk surveys conducted for the Whistling Ridge Wind Energy Project. Prepared for SDS Lumber Company.

———. 2009b. 2009 Report, Results of northern spotted owl, western gray squirrel and northern goshawk surveys conducted for the Whistling Ridge Wind Energy Project. Prepared for SDS Lumber Company.

US Fish and Wildlife Service (USFWS). 1992. Protocol for Surveying Proposed Management Activities That May Impact Northern Spotted Owls, 1992 Revised Version.

———. 2008. Final Recovery Plan for the Northern Spotted Owl. U.S. Fish and Wildlife Service, Portland, OR. 142 pp.

———. 2009a. Listed and Proposed Endangered and Threatened Species and Critical Habitat; Candidate Species; and Species of Concern in Skamania County (Revised November 1, 2007). Available at: http://www.fws.gov/westwafwo/speciesmap/SKAMAN.html.

———. 2009b. Conservation Plan and Agreement Database. Accessed via the Internet at: http://ecos.fws.gov/conserv_plans/public.jsp on December 9, 2009.

US Forest Service (USFS). 1985. Management of Wildlife and Fish Habitats in Forests of Western Oregon and Washington. Pacific Northwest Region. E.R. Brown, technical editor.

3-85

———. 2002. Survey methodology for Northern goshawks in the Pacific Southwest Region.

———. 2006. Northern Goshawk Inventory and Monitoring Technical Guide. Gen. Tech. Report WO-71. July.

Van der Haegen, M., S. Van Leuven, and D. Anderson. 2004. Surveys for western gray squirrel nests on sites harvested under approved forest practice guidelines: analysis of nest use and operator compliance. Wildlife Research Report. Washington Department of Fish

and Wildlife, Olympia, Washington, USA.

Washington Department of Fish and Wildlife (WDFW). 2009. Wind Power Guidelines. Olympia, WA.

Washington Department of Wildlife (WDW). 1993. Status of the Western Gray Squirrel (Sciurus griseus) in Washington. Olympia, WA. Final status report.

Washington Natural Heritage Program (WNHP). 2003a. Special Status Plants Species and Habitats Data Search. Washington Natural Heritage Information System.

———. 2003b. Rare Plant List for Skamania County. Washington Natural Heritage Program. http://www.dnr.wa.gov/nhp/refdesk/lists/plantsxco/skamania.html.

———. 2009. Special Status Plants Species and Habitats Data Search. Washington Natural Heritage Information System.

Washington State Department of Ecology (Ecology). 2004. Washington State Wetland Rating System for Eastern Washington. Revised. Publication # 04-06-15.

Weiler, Bill. Washington Department of Fish and Wildlife. Telephone conversation with Greg Johnson, Western Ecosystems Technology, Inc. 2003.

West, Inc. 2008. Bat acoustic studies for the Saddleback Wind Energy Project, Skamania County, Washington, August 20th – October 21st, 2007. Prepared for SDS Lumber Company.

———. 2009a. Wildlife baseline studies for the Whistling Ridge wind resource area, Skamania County, Washington, Final Report. Prepared for SDS Lumber Company.

West, Inc. 2009b. Bat acoustic studies for the Saddleback Wind Energy Project, Skamania County, Washington, July – October 7th , 2007. Prepared for SDS Lumber Company.

West, Inc. 2009c. Bat acoustic studies for the Saddleback Wind Energy Project, Skamania County, Washington, June 4th – October 25th, 2009. Prepared for SDS Lumber Company.

Whiteacre, L., J. Henderson, R. Holmes, L. Hoover, R. Lesher, J. Lippert, E. Olson, L. Potash, J. Seevers, M. Stein, and N. Wogen. 1998. Survey Protocols for Survey & Manage Strategy 2 Vascular Plants, Version 2.0. Bureau of Land Management. December. Available at: http://www.blm.gov/or/plans/surveyandmanage/SP/VascularPlants/cover.htm.

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3.5 ENERGY AND NATURAL RESOURCES
This section describes potential impacts to energy resources.

3.5.1 AFFECTED ENVIRONMENT
3.5.1.1 Region
Regional Demand

In September 2009, the Northwest Power and Conservation Council released the Draft Sixth Northwest Power Plan (NWPCC 2009), which contains projections for regional power demand. The plan notes that regional population is likely to increase from 12.7 million in 2007 to 16.3 million by 2030. Demand for electricity is expected to grow, in part as a result of this population growth. The Draft Sixth Northwest Power Plan states:

The Pacific Northwest consumed 19,000 average megawatts or 166 million megawatt-hours of electricity in 2007. That demand is expected to grow to 25,000 average megawatts by 2030 in the Council's medium forecast. Between 2007 and 2030, demand is expected to increase by a total of 6,500 average megawatts, growing on average by 270 average megawatts, or 1.2 percent, per year.

The cost of energy of all types is expected to be significantly higher over the next twenty years than during the 1980s and 1990s. Cost increases will be driven by increasing demand and the fact that the cost of finding and producing new energy sources is higher than for existing supplies. Carbon emission taxes or cap-and-trade policies are likely to further raise energy costs. The Northwest Power and Conservation Council predicts that wholesale electricity prices are expected to increase from about $45 per megawatt-hour in 2010 to $85 by 2030 (2006$).

Pacific Northwest Markets for Renewable Energy Resources

According to the Northwest Power and Conservation Council, much of the future demand for electricity in the region could be met through conservation. However, markets for renewable or "green" energy are still growing in the Pacific Northwest, and the Project can help to meet this growing demand. One driver for this shift is the establishment of RPS at the state level, which requires that utilities obtain a percentage of their power from renewable sources. For example, in 2006, voters in the Washington passed Initiative 937, which requires that by 2020 large public and private utilities must obtain 15 percent of their electricity from renewable resources, and undertake cost-effective energy conservation. In 2008, California increased its RPS goal from 20 percent to 33 percent renewable energy by 2020.

In addition to the RPS requirements, Washington law requires larger utilities in Washington to offer a voluntary "qualified alternative energy product," essentially an electricity product powered by green resources, beginning in January 2012 (RCW 19.29A.090). State law defines a qualified alternative energy resource as electricity fueled by wind, solar energy, geothermal energy, landfill gas, wave or tidal action, gas produced during the treatment of wastewater, qualified hydropower, or biomass. As of 2008, 15 of the 16 utilities covered by the report had an active green power program with customers participating, and five additional utilities not

covered by the law reported to the state that they were operating green power programs. Estimated sales of green power for 2008 were up 17 percent over 2007. Wind powered electricity represented 83.3 percent of green power sales (WUTC 2008).

Bonneville Power Administration Transmission System

BPA owns and operates 15,000 miles of power lines that carry power from the dams and other power plants to utility customers throughout the Pacific Northwest. The BPA service area includes Oregon, Washington, Idaho, Western Montana, and small portions of Wyoming, Nevada, Utah, California, and Eastern Montana.

Electric power plants require an interconnection with a high-voltage electrical transmission system for delivery to purchasing retail utilities. BPA owns and operates the FCRTS, which comprises more than three-fourths of the high-voltage transmission grid in the Pacific Northwest, and extra regional transmission facilities. BPA considers and grants interconnection requests to the FCRTS in accordance with its Open Access Transmission Tariff. Under BPA's tariff, BPA offers transmission interconnections to the FCRTS to all eligible customers on a first-come, first-served basis, with a decision on whether or not to make this offer subject to environmental review under NEPA.

Comment: If BPA owns and operates 15,000 miles of power lines, and BPA is concurrently proposing building bigger power lines throughout the NW, where is the cumulative impacts analysis on the environmental effects of 15,000 miles of power lines? Where is the human health cumulative analysis? Where is the cumulative impact analysis on wildlife—habitat fragmentation, habitat destruction, herbicide effects, etc.? From the DEIS we learn that BPA provides energy to a "service area includes Oregon, Washington, Idaho, Western Montana, and small portions of Wyoming, Nevada, Utah, California, and Eastern Montana" but this regional area is not included in any cumulative impacts analysis in this DEIS. Why not? BPA's energy production has cumulative effects on the environment, on ecosystems throughout their service area but there is no cumulative impact analysis reporting in this DEIS. This is another fatal flaw in this DEIS.

3.5.1.2 Project Area

The project would be located north of the Columbia River. The Columbia River corridor is an area of good wind energy potential that currently supports several successful wind power projects. The Columbia River Gorge provides a low-elevation connection between continental air masses in the interior of the Columbia Basin east of the Cascade Range and the maritime air of the Pacific Coast. Especially strong pressure gradients develop along the Cascades and force the air to flow rapidly eastward or westward through the Gorge.

Electric service for the project area is provided by Skamania County Public Utility District #1, which obtains electricity from the Federal Columbia River Power System (FCRPS), the series of hydroelectric projects along the Columbia River, through BPA. Backup power is obtained from Condit Dam, which is scheduled to be decommissioned in 2010. In July 2009 the Public Utility District sought intervener status with EFSEC to argue in favor of the Project, based on the ability

of the project to provide backup power to the Public Utility District once Condit Dam is removed (EFSEC 2009). There is currently no utility service of any kind at the proposed project site.

The proposed project area and the project site are already heavily used by energy and other utilities. Two BPA high-voltage transmission lines cross the project site, a natural gas pipeline runs near the north border of the project site, and there are two communications towers within one mile of the site.

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3.5.2 IMPACTS
3.5.2.1 Proposed Action
Construction

The project would consume limited amounts of energy and natural resources, primarily during construction. The electrical substation would be built immediately adjacent to the BPA lines, reducing the need to build new long-distance high-voltage transmission lines.

Estimated types and quantities of energy and natural resources consumed during construction are as follows:

- 19,250 gallons of fuel (diesel and gasoline) for construction equipment
- 3,700 tons of steel for turbine towers
- 1,000 tons of steel for tower foundation reinforcement
- 100,000 yards of gravel (aggregate) for roads and crane pads
- 10,000 cubic yards of concrete for turbine foundations
- 1.7 million gallons of water for road compaction, dust control, wetting concrete, etc., assuming plain water is used for dust control (this amount could be reduced through the use of lignin or other dust palliative if permitted by EFSEC)

The source of fuel for construction equipment and vehicles would be licensed fuel distributors or gas stations. Petroleum products, including vehicle and equipment gasoline and diesel fuels, and machinery lubricants are available and would be purchased from numerous commercial outlets in the project vicinity. Water for construction would be obtained from a local source with valid water rights, as described in Section 3.3 Water Resources. Concrete would be purchased from existing suppliers located near the project site. Electricity for construction equipment would be provided from portable generators.

Bulk materials such as aggregate gravel and sand, in addition to soils, would be supplied locally from existing quarries. Other building materials, equipment, and other operational commodities would be purchased from equipment and material suppliers. The largest resource use would be steel and concrete. Diesel fuel and electricity also would be consumed during construction. The amounts of all of these resources would be small compared to existing supplies, and none are expected to affect availability or market supply.

Nonrenewable resources in the project vicinity are primarily gravel extracted from local sources

and used locally. Primary consumption of these resources is related to construction projects (sand, gravel, and other mineral resources as used in steel, aluminum, concrete, and other building products). Several gravel pits and quarries are located near the project site. These would be adequate to supply the needs of the project.

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Renewable resources are materials that can be regenerated, such as wood, other fibers, wind, and sunlight. The primary renewable resources in the project area are timber and wind. The project area, including the project site, has been used for the renewable production of forest products for many years. The addition of the Project would diversify this renewable resource-based business by using a second, compatible renewable resource, the wind energy of the site. The project would shift approximately 56 acres of commercial forest land to non-forest uses for the project area roads and the turbine corridors. In the context of the 1,152-acre site and the large areas of surrounding area in private and Washington State timber management, this reduction would not affect the availability of timber as a renewable resource.

Operation

Operation of the project would consume limited amounts of energy and nonrenewable natural resources. During operations, electrical energy from Skamania County Public Utility District #1 would be consumed on a limited basis during times when the wind generated on site is insufficient to power warning lights required by the Federal Aviation Administration and security lights. Some electricity would be used at the Operations and Maintenance and substation facilities. In addition, turbines require electrical energy to run lubrication pumps and cooling systems, electrical monitoring systems, and position motors when wind speeds are below generation levels.

• Types and quantities of energy and natural resources consumed during operations are as follows:
• Fuel for operations and maintenance vehicles (approximately 8,500 gallons annually)
• Minor quantities of lubricating oils, greases and hydraulic fluids for the wind turbine generators
• Electricity for project operations (less than approximately 600 kilowatt hours per wind turbine generator per month)
• Water for use at the Operations and Maintenance facility and periodic maintenance of turbine blades (less than 5,000 gallons per day) Electricity for project operations would mostly be generated by the approximately 75 MW of electricity created by the project itself. Wind farms have a very high "energy payback" (ratio of energy produced compared to energy expended in construction and operation), and wind's energy payback time is one of the shortest of any electrical generation technology. It takes approximately three to eight months, depending on the wind speed at the site, for a wind farm to produce the total amount of energy used to construct the equipment and build the project (AWEA 2007). The Project Proponent expects this to be true for the Project as well.

During periods when the wind turbines are not generating power, electricity would be purchased

from the Skamania County Public Utility District #1.

The impact of this proposed project to the regional electric demands can best be seen by a recent Northwest Power and Conservation Council evaluation of projected electrical demand in the

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region. The NPCC found that a medium forecast predicts a demand of about 5,300 MW by 2025 with a range of about minus 2,500 MW to a high of about plus 7,000 MW. The medium forecast represents a growth of about 1 percent per year. Given the regional energy needs and the unique convergence of gas pipelines, wind energy, and transmission lines in Klickitat County, it is reasonable to estimate that the County could produce a portion of the projected increased energy demand. Currently, the regional power resources come from the following energy technologies:

- Hydroelectric, 55 %
- Coal fired thermal, 19 %
- Nuclear power, 5 %
- Imports, 8 %
- Gas fired combustion turbines, 3 %
- Non-Utility generation, 6 %
- Miscellaneous, including wind power, 4 %

The Klickitat County Energy Overlay Zone Final EIS11, released by the Klickitat County Planning Department, also recently evaluated the projected energy demand in Klickitat County, Washington, the county immediately adjacent to Skamania County. The Klickitat County Planning Department found that the technologies that are currently being used within Klickitat County include hydroelectric, gas fired combustion turbines, biomass fired turbines, and wind energy. These energy technologies are expected to continue to be developed in the County (through the year 2024) and include:

- Seven 250 MW or five 350 MW natural gas thermal projects
- Two 50 MW biomass projects
- Four wind power projects with total generating capacity of 1,000 MW
- Solar projects are anticipated to be small in size and number.

Comment: If Klickitat County evaluated projected energy demand, then where is their cumulative impacts analysis for environmental impacts? Klickitat is in BPA's service area and any cumulative impacts from their energy production should be part of this DEIS. Cumulative impacts are just not calculated for past and present actions—they must also be calculated for FUTURE actions, such as the" seven 250MW or five 350MW natural gas thermal projects, and the two 50MW biomass projects, and the four wind power projects, and the solar projects" mentioned above. Where are the FUTURE cumulative impacts analyses for these FUTURE actions?

The proposed project, although in a small way, would help meet the project demand outlined by the NPCC as mentioned above through its wind power generation. Additionally, the proposed

project would be consistent with the types of projects that have been outlined within the Klickitat County Energy Overlay Zone Final EIS.

11 See: http://www.klickitatcounty.org/default.asp

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Studies of the projected impact of this proposed project to the FCRTS have found that the North Bonneville-Midway 230-kV line interconnection provides sufficient capacity for the proposed 70 MW request. From the proposed BPA substation interconnection, the power flow will be directed 80% towards North Bonneville and 20% towards Midway. The contingency analysis for this interconnection request indicates that no overloads are anticipated to occur, and this proposed project would not be expected to affect the operation of BPA's transmission system.

Project Decommissioning

In compliance with WAC 463-72, Site Restoration and Preservation, the Applicant will provide EFSEC with an initial site restoration plan at least 90 days prior to the beginning of site preparation. The plan will address site restoration that would occur at the conclusion of the project's operating life (estimated to be 30 years), and restoration in the event the project is suspended or terminated during construction or before it has completed its useful operating life. The plan will include or parallel a decommissioning plan for the project.

The initial site restoration plan will be prepared in sufficient detail to identify, evaluate, and resolve all major environmental and public health and safety issues presently anticipated, including potential uses of energy and natural resources. If impacts to energy or natural resources are anticipated to occur as a result of site restoration and project decommissioning, mitigation measures will be proposed as part of the plan.

3.5.2.2 No Action Alternative
Under the No Action Alternative, the wind energy project would not be built. The energy and water use for the Operations and Maintenance building would not take place. It is likely that the region's power needs would be met through energy efficiency and conservation measures, existing power generation, or the development of new power generation. Base load demand would likely be filled through expansion of existing, or development of new thermal generation such as gas-fired combustion turbine technology. Other wind sources also could be developed. Such development could occur at appropriate locations throughout Washington State. The impacts on energy and natural resources would depend on the type, location, and size of the facility proposed.

3.5.3 MITIGATION MEASURES

Adverse impacts to energy and natural resources are identified to be minimal and therefore no mitigation measures would be required.

3.5.4 UNAVOIDABLE ADVERSE IMPACTS

The project would have minor unavoidable adverse impacts to energy and natural resources. The overall impact of the project to energy and natural resources would be positive, since it would provide the region with low-cost, clean, renewable energy, in accordance with state and national policies and priorities.

Comment: Just "minor unavoidable adverse impacts to energy and natural resources"? What exactly does minor mean? How many cumulative "unavoidable adverse impacts" are there? "Overall impact...would be positive"? Do we now sing Kumbaya and call it good?!? This is not analysis. This is a proponent making a subjective, wishful statement unsupported by data and factual information. Where is the data to support the assertions in the adverse impact statement?

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3.5.5 REFERENCES

American Wind Energy Association (AWEA). 2007. Wind Power Today. Accessed at: http://www.awea.org/pubs/factsheets/windpowertoday_2007.pdf.

Energy Facility Site Evaluation Council (EFSEC). 2009. Application No. 2009-01: Skamania

County Public Utility District No. 1 Petition for Intervention. Accessed at:

http://www.efsec.wa.gov/Whistling%20Ridge/Adjudication/Petitions%20for%20interven

tion/SCPUD%20Petition%20for%20Intervention.pdf.

Northwest Power and Conservation Council (NWPCC). 2009. Draft Sixth Northwest Power Plan. September. Accessed at: http://www.nwcouncil.org/energy/powerplan/6/default.htm.

Washington Utilities and Trade Commission and Department of Community, Trade and

Economic Development WUTC and CTED). 2008. Green Power Programs in

Washington: 2008 Report to the Legislature. December.. Accessed at:

http://www.wutc.wa.gov/webdocs.nsf/0/547510a1319daa74882575d80057a2bf/$FILE/Green%2 0 Power%20Report.pdf.

3.6 PUBLIC HEALTH AND SAFETY

This section describes existing health and safety hazards at the project site and identifies potential health and safety risks from project construction and operation. Risks discussed include fire or explosion, release of hazardous materials, vandalism, traffic accidents, turbine structural failure, ice throw, electric and magnetic fields, and shadow-flicker. Mitigation measures are identified for potential impacts.

3.6.1 AFFECTED ENVIRONMENT

3.6.1.1 Existing Health and Safety Risks

Existing health and safety hazards at the project site include those associated with the current commercial forestry operations on the site. Commercial forestry operations include some risks of fire and explosion from equipment operation, especially during dry summer months. Commercial forestry entails a small risk of leaks or spills of fuel, oil, or hydraulic fluid. There is also a small health and safety hazard related to logging trucks currently traveling to and from the site. During the dry summer months, there is some risk of fire from lightning.

Resources for responding to risks to environmental health and safety include fire prevention, law enforcement, and emergency medical response.

3.6.1.2 Fire Prevention

The project site is currently used for commercial forestry and there are no structures on the site.

Two city fire departments (North Bonneville and Stevenson) and seven Skamania County fire districts provide fire protection to Skamania County residents. DNR also provides fire suppression services to forested areas in Skamania County, and would be the first responder to a fire emergency at the project site (J. Weeks, personal communication). Skamania County Fire

District No. 3 (SCFD3) (also known as Underwood Fire District) provides fire protection and emergency response to a 20-square mile service area immediately south of the project site (D, Cox, personal communication). Although the project site is not formally within SCFD3's service area (T. Skinner, personal communication), SCFD3 would likely respond to a fire at the project site, along with and in coordination with DNR (R. Hovey, personal communication). The Mill A Fire Department is also near the project site, and has a staff that includes less than six volunteer firefighters and no paid personnel (J. Carlson, personal communication).

The project site is located in DNR's West Klickitat Area. The DNR work center closest to the project site is the Husum work center, which is staffed by one fire manager officer and one assistant fire manager (J. Weeks, personal communication). Other staff and equipment at the Husum work center includes six firefighters and two Type 6 wildfire engines (Fullerton and Helgerson 2008). The DNR response time to the project site would vary depending on the location of the engines and the type of fire emergency at the project site, but would range from 45 minutes to one hour (R. Hovey and J. Weeks, personal communications). The engines are usually assigned to work projects in the field.

SCFD3 is located in the unincorporated community of Underwood and is staffed by 17 volunteer firefighters. The SCFD3 service area is 20 square miles. Equipment at SCFD3 includes one each of the following: Type 1 engine, Type 2 engine, Type 3 engine, Type 7 engine, Type 2 tender, and Type 3 tender (Fullerton and Helgerson 2008). The Washington State Ratings Bureau rating for SCFD3 at the project site is "Unprotected – 10," because the site is not located

within the SCFD3 boundaries (T. Skinner, personal communication).

The project site is located outside of the Columbia River Gorge National Scenic Area. If an incident at or near the site, i.e., a wildland fire, threatens the area, the Columbia River Gorge National Scenic Area fire agency could respond. The fire agency is equipped with three Type 6 wildfire engines, one fire prevention module, two command vehicles, two cooperative engines (with the DNR), and one cooperative engine (with the Oregon Department of Forestry). The Columbia River Gorge National Scenic Area fire agency has nine employees and is staffed seven days per week, July through September (Fullerton and Helgerson 2008).

Skamania and Klickitat Counties have jointly prepared a Community Wildfire Protection Plan through a Title III grant from the Secure Rural Schools and Self Determination Act (Klickitat and Skamania Counties 2006). This is a plan developed by a community in an area at risk from wildfire, with the goal of reducing the risk of catastrophic wildfire within the region. .

Table 3.6-1 lists the fire departments that serve the site and surrounding area, along with the departments' staff and equipment. These fire districts have mutual aid agreements with each other (J. Carlson, personal communication).

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Table 3.6-1
Fire Departments in the Whistling Ridge Energy Project Vicinity
Fire Department
Paid Full-Time
Personnel
Volunteer
Personnel Equipment
Protection
Classa
Skamania County
Fire District No. 3
0 17 1 – Type 1 engine
1 – Type 2 engine
1 – Type 3 engine
1 – Type 7 engine
1 – Type 2 tender
1 – Type 3 tender
10
Mill A Fire
Department
0 <6 (c)
Washington
Department of
Natural Resources
6 NAb 2 – Type 6 wildfire engines -

Columbia River
Gorge National
Scenic Area Fire
Agency
9 NAb 3 – Type 6 wildfire engines
1 – fire prevention module
2 – command vehicles
2 – cooperative engines (with DNR)
1 – cooperative engine (with Oregon Department of
Forestry).
-Sources: Fullerton and Helgerson (2008), Washington State Patrol (personal communication), MSRC (2008), J. Carlson (personal
communication).

a. T. Skinner (personal communication): As rated by the Washington Surveying and Rating Bureau. The Bureau rates the level of fire protection provided by fire departments against four main elements: available water supply; logistical characteristics and makeup of the district fire department; available communications systems; and fire control and safety measures taken and ordinances in effect in the particular fire district. Ratings are used to evaluate fire protection availability for insurance purposes. Ratings range from 1 to 10, with class 1 representing the highest level of fire protection and class 10 the lowest level. Ratings were not available for the DNR or the Columbia River Gorge National Scenic Area Fire Agency.
b. Not available.
3.6.1.3 Law Enforcement

The Skamania County Sheriff's Office provides law enforcement services in the project vicinity. Sheriff's Office headquarters are located in Stevenson, approximately 15 miles southwest of the project site. The response time from Sheriff's Office headquarters to the project site is approximately 20 minutes.

The Washington State Patrol patrols SR 14 south of the site. Roads extending north of SR 14 are county roads, and are patrolled by the Sheriff's Office. Table 3.6-2 provides information on the police departments serving the site area, including service area and number of officers.

3.6.1.4 Emergency Medical Services

Two ambulance companies provide emergency response services for the Project site: Skamania County Emergency Medical Service and Skyline Ambulance. Skamania County Emergency Medical Services is the functioning entity of Skamania County Hospital District No. 1, which provides ambulance service to the residents of Skamania County. Skyline Ambulance is based at Skyline Hospital in White Salmon, and is equipped with three ambulance vehicles. Table 3.6-3 lists characteristics of the first response ambulance service providers for the Project site.

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Table 3.6-2

Police Department Staffing Levels in the Whistling Ridge Energy Project Vicinity

Department
2008 Population
of Service Area
Number of
Commissioned
Officers
Ratio of Officers to
1,000 Population
Skamania County Sheriff's Office 10,700 23 2.1a
Washington State Patrol District 5 Goldendale
Detachment 30,800b 9 0.3
Washington State Patrol Vancouver District 5 608,600c 60 0.01
Average for Washington State 6,489,490 10,541 1.6d

a. D. Cox (personal communication), WASPC (2008), Washington State Patrol (personal communication).
b. Includes population of Klickitat and Skamania Counties.
c. Includes population of Clark, Cowlitz, Lewis, and Skamania Counties.
d. WASPC (2008), statistics are for 2007.
Table 3.6-3
Ambulance Service Providers in the Whistling Ridge Energy Project Vicinity

Name Ownership Level of Care
Skyline Ambulance Public Advanced Life Support
Skamania County Emergency Medical Services Public Advanced Life Support

Sources: Skyline Hospital (2008), Skamania County EMS (2008).

The two hospitals closest to the project site are Skyline Hospital in White Salmon (7 miles southeast of the project) and Providence Hood River Memorial Hospital, directly across the Columbia River from White Salmon in the City of Hood River (8 miles southeast of the project). Skyline Hospital is a 32-bed acute care hospital with a Trauma Level IV designation, serving western Klickitat County and eastern Skamania County. Services at Skyline Hospital include acute care, obstetrics, surgery, cardiopulmonary care, radiology and laboratory services, physical therapy, a pharmacy, and emergency services. Skyline Hospital owns and operates a three-vehicle ambulance service (Skyline Hospital 2008).

Providence Hood River Memorial Hospital is a 25-bed facility that provides cardio conditioning, counseling, diabetes treatment, a dialysis center, emergency services, obstetrics, radiology, laboratory services, nutrition, occupational medicine, a sleep center, and surgery12.

3.6.2 IMPACTS
3.6.2.1 Proposed Action
Potential impacts to environmental health may occur during construction or operation.

Construction

Construction impacts include the typical risks to health associated with the construction of an industrial facility, including fire or explosion, release of hazardous materials, vandalism, and accidents.

12 See: http://www.providence.org/hoodriver/

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Fire or Explosion

The only structures proposed on the site are the turbine towers, associated transformers and substation, and the Operations and Maintenance facility. Project construction could temporarily increase the risk of fire at the project site and in the broader project area, as a result of the operation of vehicles and power equipment, which may cause fires through contact with dried plants during dry summer weather. Blasting may be used where solid rock is encountered during construction of turbine foundations or trenches for the underground electrical collection system. Blasting could create a fire hazard during dry weather.

As the landowner and a long-term commercial forestry business, SDS has maintained the ability to respond to fires on their forest land with dozers and water trucks, and will continue to do so. Fire response by SDS will be supplemented by DNR, which provides fire protection on forest lands. DNR has resources in the area and responds to all wildland fires. DNR would likely respond to a structure fire in the woods, as would Underwood Fire District #3 and Mill A Volunteers. SCFD3 is the nearest local fire district. Eric Ziegler, District Chief, submitted a letter to EFSEC during the EIS scoping period stating that SCFD3 can provide service coverage to the project area to respond to fires without any reduction in service to their constituency. Mill A Volunteers is not a recognized fire district with a tax base but a volunteer fire company. Mill A Volunteers has joint responder agreements with Underwood Fire District and the DNR.

There are two locations being considered for the Operations and Maintenance facility site, one site next to the substation and the other at the bottom of West Pit Road. The West Pit Road site would have a lower fire risk and shorter response times for emergency services, since the facility would be along a county road.

Releases of Hazardous Materials

The risk of releases to the environment that would affect health would be similar to any large construction project. The primary potentially hazardous materials used during construction would be diesel fuel for construction equipment, lubricating oils and hydraulic fluids for the turbines, and mineral oil for the transformer at each turbine and the substation. Approximately 19,250 gallons of diesel fuel would be used during construction. Most trucks would fuel up off-site; some fuel would be transported to the site.

Each turbine would contain a small amount of hydraulic fluid, and would have a pad-mounted transformer containing approximately 500 gallons of mineral oil for cooling. The BPA substation would have either one or two transformers, each containing up to 12,000 gallons of mineral oil. These transformers would be filled during construction.

Comment: How dangerous is mineral oil to the environment, in case of leaks? Is there combustion danger? How much of the mineral oil is stored onsite for use? Over the life of each turbine transformer, how much mineral oil is used? How much mineral oil is used over the lifetime of the BPA substations? What is the chemical makeup of the mineral oil?

Vandalism

During construction, the presence of out-of-area workers could create a negligible increase the risk of vandalism in the community. Vandalism of project facilities and theft of equipment during construction also is a potential area of concern. Security provisions could include temporary fencing with a locked gate around the construction site; the use of site trailers for the temporary storage of special equipment or materials; and the use of outdoor lighting and motion-sensor lighting. Access to the project site would be controlled, and site visitors including vendors, equipment personnel, maintenance contractors, material suppliers, and all other third

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parties would require permission for access from authorized project staff prior to entrance. These measures would help to reduce the potential for vandalism and other incidents at the project site that would require a response by local law enforcement agencies. Whistling Ridge Energy LLC may contract for on-site security to supplement coverage by the Skamania County Sheriff.

Traffic Accidents

Project construction could lead to a slight increase in the chance of traffic accidents, due to the presence of a peak of 265 construction workers traveling to the site, along with the transport of construction materials and the turbine components. This impact would last a maximum of one year, with peak impacts limited to a several-month period in the summer. This risk would be minimal and similar to any construction project involving the use of heavy equipment and large structural components on the roadways. The Skamania County Sheriff or the Washington State Patrol would respond to traffic accidents. Medical response would be provided by the local ambulance services (Skamania County Emergency Medical Service and Skyline Ambulance) and the two local hospitals (Skyline Hospital in White Salmon and Providence Hood River Memorial Hospital in Hood River), which have capacity for additional patients.

Turbine Structural Failure

The risk of turbine structural failure during construction would be very small, and would be due primarily to problems in the assembly process, should a failure occur. The turbine supplier will be required to document and provide the quality assurance/quality control procedures used

during manufacturing and assembly to minimize or eliminate the risk of failure.

Ice Throw

Ice storms, both mild and occasionally severe, may occur in the project area. During periods of ice build-up, the exposed parts of the turbine may be coated with ice. When a stationary blade accumulates ice followed by an increase in temperature, the ice on the blade can thaw. If the blades are stationary, the ice will fall near the turbine base, but once the blades begin to rotate, ice fragments may be thrown. Ice throw would not be a risk during construction because the turbines would not be operating.

Shadow Flicker

Shadow flicker caused by wind turbines is defined as alternating changes in light intensity as the moving blade casts shadows on the ground and objects, including windows at residences. Some health concerns have been raised about the effects of shadow flicker. Shadow flicker can only occur if the location of the turbine is close to a receptor that is in a position where the blades interfere with very low-angle sunlight. Shadow flicker would not be a risk during construction because the turbines would not be operational.

Comment: Duh. "Shadow flicker would not be a risk during construction because turbines would not be operational." I really dislike it when people think I'm stupid... SO, what happens after the turbines are constructed? How much shadow flicker is there? How are people and wildlife affected by shadow flicker? Shadow flicker is VERY ANNOYING, as anyone who has had light flickering on their peripheral vision can attest! This is not an analysis of shadow flicker, its effects on humans and wildlife, and its location relative to human habitation in the area.

Electromagnetic Fields

Electrical transmission lines, distribution lines, and substations create electromagnetic fields. Electromagnetic fields also exist in nature and around all types of electrical devices and appliances. They are produced by the presence of differences in electrical potential (voltage) and the movement of charges because of the potential (current). This movement produces magnetic fields. The electrical and magnetic fields around electrical appliances and utility facilities are

extremely low frequency. They have a significantly lower frequency (60 cycles per second, or Hz), than radio broadcast waves (0.5 to 100 million cycles per second) or electromagnetic energy from sunshine (1,000 trillion cycles per second). Electrical and magnetic fields would not be generated prior to completion of the project other than by electrical generators used for temporary site power.

Comment: SO, what happens after construction. What strength electrical and magnetic fields would be generated? What effects do electromagnetic fields have on humans and wildlife? Are there any genetic effects? Cancer-causing effects?

Operation

Potential health and safety concerns from operation of a wind energy facility include ongoing risks of fire or explosion, releases to the environment, vandalism or traffic accidents, along with concerns regarding turbine structural failure, tower failure, blade throw ice throw from the turbine blades, shadow flicker from the moving blades, and electrical and magnetic fields.

Fire or Explosion

Wild fires in the project area are relatively rare, and fire conditions are monitored continually by the DNR. During project operation, fire protection would continue to be provided by SDS, DNR, Underwood Fire District, and Mill A Volunteers. Potential for fire would be lower once construction is completed, and would relate primarily to lightning and vehicle use during the dry summer months. These risks would be mitigated through appropriate operational practices. DNR has stated that resources for fire protection and suppression services are adequate to serve the project during construction and operation (J. Weeks, personal communication).

Turbine fires are possible; however, with the types of modern wind turbines proposed for the project, turbine malfunctions leading to fires in the nacelle are extremely rare. The turbine control system detects overheating in turbine machinery, and internal fires would be detected by these sensors, causing the machine to shut down immediately and send an alarm signal to the central supervisory control and data acquisition system, which would notify operators of the alarm by cell phone or pager.

Releases to the Environment

Operation of the project would not result in the generation of regulated quantities of hazardous wastes. Since no fuel would be burned to power the wind turbine generators, there would be no spent fuel, ash, sludge or other process wastes generated. The only materials used during project operations that present any potential for accidental spills are lubricating oils and hydraulic fluids used in the wind turbine generators and transformers.

• Turbine Fluids. The fluids within the turbines are checked by staff periodically and must be replenished or replaced on an infrequent basis (generally less than once per year and sometimes only once every five years). When replacing these fluids, the industry standard practice is for staff to climb up to the nacelle and remove the fluids in small (typically five-gallon) containers and lower them to the ground using a small maintenance crane built into the nacelle itself. The containers would then be transferred to a pickup truck for transport to the Operations and Maintenance facility for temporary storage (typically less than one month) before being picked up by a licensed transporter for recycling. Replacement fluids are added in the same method, only in reverse.

• Replacement Fluids. Small quantities of replacement fluids, typically no more than a few 50-gallon drums of lubricating oil and hydraulic oil, may be stored at the Operations and Maintenance facility for replenishing and replacing spent fluids. These fluids would be stored in appropriate containers. All operations staff would be trained in appropriate handling and spill prevention techniques to avoid any accidental spills. Because only small quantities of fluids are transported, added, or removed at any one time and are stored for short periods of time, the potential for an accidental spill during routine maintenance is extremely limited.
• Pad Mounted Transformers. Each wind turbine generator has a pad mounted transformer located at its base. These transformers contain mineral oil, which acts as a coolant. Each pad mounted transformer contains up to 500 gallons of mineral oil. The transformer is designed to meet stringent electrical industry standards, including containment tank welds and corrosion protection specifications. Regular maintenance is performed on the transformers, including checking the condition of the coolant.
• Substation Transformer(s). The BPA substation would be equipped with either one or two transformers. Each substation transformer would contain up to 12,000 gallons of mineral oil for cooling. These transformers are designed to meet stringent electrical industry standards, including containment tank welds and corrosion protection specifications. The substation transformers are equipped with an oil level sensor that detects any sudden drop in the oil levels and send an alarm message to the central supervisory control and data acquisition system. Finally, the substation transformers are supported by a concrete vault to ensure that any accidental fluid leak does not result in any discharge to the environment. It is anticipated that an Operation SPCC Plan would be submitted and approved by EFSEC prior to operation.

Vandalism

Vandalism of project facilities and theft of equipment during operation is similar to that expected during construction. As with the construction period, the project design will include site security measures including fencing and outdoor lighting, and Whistling Ridge Energy LLC may contract for on-site security to supplement coverage by the Skamania County Sheriff.

Traffic Accidents

The risk of traffic accidents during operation would be low. The project would employ between eight and nine operations staff; this number would not generate sufficient additional traffic to increase accident rates. Traffic accident response would continue to be provided by the Skamania County Sheriff and Washington State Patrol, with support by local ambulance services and hospitals as needed.

Tower Failure

Structural failure of the turbine tower is very rare, though some instances of turbine failure have been documented in older turbine models. A review performed for the Kittitas Valley Wind Project EIS located five reported instances of tower failure worldwide. There are at least 55,000

wind turbines installed world-wide (EFSEC 2007). One insurance company representative whose company insured over 12,000 turbines reported that he was not aware of any instances of the failure of tubular turbine towers (EFSEC 2007).

Tower failure can be attributed to improper design, manufacturing defects, extreme weather events, or the wrong application of technology. Reasons for tower collapse can vary depending on conditions and tower type, but may include blade strikes, very strong winds, and improper maintenance. While structural failure is more damaging than blade failure, the consequences and risks to human health are far lower since risks are confined to within a relatively short distance from the turbine (Caithness 2006). There is only one recorded death from a tower collapse, which occurred in Sherman County, Oregon (a construction worker who died during the testing phase and not during operation). A six-month investigation found that the operating company "failed to properly instruct and supervise workers in the safe operation of tools and equipment. It also found that company procedures for working under potentially dangerous conditions fell short of OSHA [Occupational Safety and Health regulations]" (Hill 2008). The investigation did not find any structural problems with the tower itself.

Comment: This is the Gorge. There are strong winds in the Gorge. There is extreme weather in the Gorge. Why is SDS proposing to build huge, dangerous propellers in an area known for gusting, strong, winds?

Blade Throw

Cases of blade throw are rare and have generally been linked to improper assembly or exceedance of design limits (AWEA 2008). In those rare instances where towers or blades have failed, the failure typically results in components crumpling or falling straight down to the ground, although in a small number of cases blades or parts of blades have been thrown from the nacelle. There is limited data available on how far blade components would be thrown since blade throw is extremely rare. In testimony for the Kittitas Valley Wind Project, a representative from Vestas Wind Systems in Denmark stated that there are approximately 10,000 Vestas turbines installed and operating worldwide. There has been only one noted occurrence of blade throw, with a Vestas V39-500kW turbine in Denmark in 1992 where a blade was thrown 50 to 75 meters (approximately 165 to 245 feet) (EFSEC 2007). Based on this information, the Applicant determined that using a minimum of turbine tip height to define the minimum safety setback distance is sufficient to protect against blade throw.

For the Project, members of the public would not have access to the project site, and signs would be used to discourage unauthorized access. The tip height of the turbines would be approximately 426 feet. The property boundaries of the project site would be greater than 426 feet in distance to the nearest turbine in all but a few isolated cases. Exact distances from the turbines to the property boundary would depend on the final design and placement of the turbines; however, it is possible that the nearest turbine would be within this distance of the project boundary for small parts of turbine strings A and B (on the west of side of the project area), F and D (on the south side) and B and C (on the north side). However, most of this area is

under control of the Applicant or in large-scale agriculture, and there are no residences within this buffer area:

• On the west side of the project area, there are six properties, of which only two are owned by a person or entity other than the Applicant. These two are owned by the State and managed by DNR. All these neighboring properties are managed as commercial forest land with no residential structures.

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• On the south side, there are five adjacent off-project properties, located within the Scenic Area. Of these five properties, only one, totaling 29 acres, is owned by someone other than the Applicant. The 29-acre parcel is primarily managed as forest and orchard lands, with 1 acre used for residential purposes. The owner has received approval from Skamania County to relocate their existing home to within 50 feet of their north property line. This new location would bring the residence to within 2,000 feet of the closest proposed turbine corridor. Except for this parcel, all adjacent lands to the south are in commercial timber production.
• On the north side, the land is owned by the State and managed for commercial timber harvest by the DNR.

The wind turbines for the project would be equipped with sophisticated computer control systems to monitor variables such as wind speed and direction, air and machine temperatures, electrical voltages, currents, vibrations, blade pitch and yaw angles, etc. Each turbine would be connected to a central data control system. The system will allow for remote control and monitoring of individual turbines and the wind plant as a whole from both the central host computer or from a remote computer.

Comment: I did not see any wind studies, long-term wind direction distribution curves, data on maximum and minimum temperatures onsite, the different altitude locations for the wind turbines (altitude above sea level affects wind production? Where are the air density tables for the proposed location, etc. Where are the wind studies for this area? What are the environmental issues associated with micro-siting?

All turbines are designed with several levels of built-in safety and comply with the codes set forth by Occupational Safety and Health Administration and American National Standards Institute standards. The turbines would be equipped with two fully independent braking systems that could stop the rotor either acting together or independently. The braking system is designed to bring the rotor to a halt under all foreseeable conditions. The system would include aerodynamic braking by the rotor blades and by a separate hydraulic disc brake system. Both braking systems would operate independently such that if there is a fault with one system, the other could still bring the turbine to a halt. Remote restarting of the turbine would not be possible following an emergency stop. The turbine would be inspected in-person and the stop-fault reset manually to re-activate automatic operation. The turbines also would be equipped with a parking brake used to "park" the rotor while maintenance routines or stationary rotor inspections are performed.

Ice Throw

As noted above, during periods of ice build-up, the exposed parts of the turbine may be coated with ice. When a stationary blade accumulates ice followed by an increase in temperature, the ice on the blade can thaw. If the blades are stationary, the ice would fall near the turbine base, but once the blades begin to rotate, ice fragments may be thrown. The risk of impacts from ice throw is minimal. Most modern turbines include sensors that would shut down the turbine when ice build-up is detected. A 1998 study reported that there had been no injury from ice thrown from wind turbines (Morgan et al. 1998). A 2009 study reported one human injury due to ice-throw, although the specifics of the incident were not provided (Caithness 2009). As stated above, there are at least 55,000 wind turbines in operation world-wide.

Reported data on ice throws at other projects indicate that ice fragments were found on the ground from 50 to 328 feet from turbines (<33 to 197 feet blade diameter) and were in the range of 0.2 to 2.2 pounds in mass (Morgan et al. 1998, EFSEC 2007). When more than a few meters from the turbine, the risk of ice landing at a specific location was found to reduce quite quickly

with the distance of the location from the turbine. It was also found that ice falls predominantly downwind of the rotor plane. Seifert et al. (2003) conducted risk analyses on ice throw primarily in Europe. The general conclusion was that wind turbines would not cause ice throw risks as they are normally set back from residences and roadways and that the hypothetical risk of being struck by ice is small. However, the actual throwing distance of the ice fragments would vary based on many variables not included in this calculation, including rotor azimuth, rotor speed, local radius, ice fragment size and weight, and the wind speed.

Thus, a buffer based on tip height (approximately 426 feet) would provide adequate protection from ice throw. As discussed in the Blade Throw section above, the project area boundaries are usually farther than this distance from the nearest turbine, and where this is not the case the surrounding area is either under the control of the Applicant, managed for commercial timber harvest by Washington State, or managed for large-scale agriculture. The nearest residence is approximately 2,000 feet from the nearest proposed turbine string.

Shadow Flicker

Shadow flicker is the alternating change in light intensity when moving turbine blades cast shadows on the ground and objects, such as windows in residences. Shadow flicker is not caused by viewing the sun through rotating wind turbines blades or moving through the shadows of a wind energy facility, or sunlight reflected from turbine blades. Shadow flicker occurs when a turbine is located near a receptor (e.g., residence) with an unobstructed line of sight to the turbine, the sun is behind and perpendicular to the turning turbine blades and the receptor is located close enough to the turbine to be in its shadow.

The existence and intensity of shadow flicker are affected by a number of factors including:

• The strength of the sun as affected by cloud cover.
• The line of sight of the observer relative to the sun and the turbine. This is related to the sun's height in the sky, which varies with latitude and longitude, time of day, and time of year
• The distance between the observer and the turbine, which affects the distinctness of the shadows.
• The presence of obstructions such as buildings or vegetation.
• The orientation of the turbine depending on wind conditions. When the turbine is facing the sun, shadow flicker is greater behind the turbine; when the turbine is rotating in line with the sun, there is much less flicker (Committee for Renewable Energy 2008).

Potential shadow flicker from wind turbines can only occur when (1) the sun is very low in the sky; (2) a receptor is very close to the turbine; (3) the receptor is oriented toward a turbine; (4) the receptor has an unobstructed line of sight; and (5) the weather conditions include bright sun. When all these factors exist, they may produce a pulsating shadow which may or may not be perceptible. Shadow flicker frequency is related to the rotor speed and number of blades on the rotor, which can be translated into a "blade pass frequency" measured in alternations per second,

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or hertz (Hz). Although in some instances the flickering of light can induce epileptic seizures in people who are photosensitive (about 3- 5 percent of the 1 percent of Americans who are epileptic are photosensitive), shadow flicker from wind turbines is too slow to induce epileptic seizures. Whether light flicker will provoke a reaction depends on its frequency, light intensity, visual area, image pattern, and color (Epilepsy Foundation 2009). Flicker frequency due to a turbine is on the order of the rotor frequency, i.e., 0.6–1.0 Hz (NRC/NAS 2007). The flicker frequency that provokes seizures in photosensitive individuals is 5–30 Hz, well above the maximum of approximately 1 Hz for wind turbines. There is no scientific data or peer-reviewed studies that suggest a link between epileptic seizures and rotor blade alternatives.

Analyses conducted at other wind energy facilities approved by EFSEC (Kittitas Valley Wind Power Project and the Wild Horse Wind Power Project) examined the potential effects of shadow flicker for residents near the proposed projects and recommended certain measures for minimizing these effects. EFSEC found that as the distance between the wind turbine generators and residences increases, the perception of shadow flicker decreases or attenuates. At a distance beyond 2,500 feet, shadow flicker is considered to be imperceptible. Even if shadow flicker were a proven impact (as the Council found in the Kittitas Valley Wind Power Project case), none of the planned turbines are within 2,500 feet of existing residences (Figure 3.7-1 Noise Level Contours in Section 3.7 shows the locations of the closest residences.). If shadow flicker were found to occur, operational controls could be implemented to completely eliminate this perceived impact. For instance, turbine speed or orientation could be controlled during specific periods.

Electromagnetic Fields

The project will include 34.5-kV collector lines and systems, primarily located underground. There will be a new collector substation located adjacent to BPA's existing North Bonneville to

Midway 230-kV transmission line and a new interconnection from the proposed BPA substation to the 230-kV transmission line.

Electrical transmission lines, distribution lines, and substations create electromagnetic fields, which also exists in nature and around all types of electrical devices and appliances. As shown in Table 3.6-4, much of typical daily exposure to electromagnetic fields from human-made sources is a result of using electric home appliances. Electromagnetic field strength is expressed with a unit of measure called a milligauss (mG), and is measured using a special monitoring device. The strength of electromagnetic fields falls rapidly as one moves away from the source.

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Table 3.6-4
Electromagnetic Field Readings for Common Equipment

Source Readings (mG)
Video Display Terminals (VDTs)(distance 6 inches) 14 mG
Portable Heaters (distance 6 inches) 100 mG
Vacuum Cleanera (distance 6 inches) 300 mG
Can Openera (distance 6 inches) 600 mG
Hair Dryera (distance 6 inches) 300 mG
Distribution Line 37.5-kVb (distance 100 feet) <1-2 mG
Transmission Line 115-kVa (distance 100 feet) 1.7 mG
Transmission Line 230-kVa (distance 100 feet) 7.1 mG

a. National Institute of Environmental Health Sciences (2002). , EMF: Questions and Answers, 2002.
b. Gauger, J.R. (1985), Silva et al. (1988)
Electromagnetic fields from the project will be lower than those of many common household appliances and will not have health and safety impacts. Electromagnetic field readings for items commonly found in homes compared to electrical transmission lines are shown on Table 3.6-4.

Given the low strength of electromagnetic fields from the project and the distance to the nearest residences and the Operations and Maintenance facility, the project would have no impacts from electromagnetic fields.

Other Potential Impacts

Other potential adverse impacts to environmental health during operation could occur from the following:

• Weather. Weather emergency includes hail, high winds, thunderstorms, extreme cold weather, and any other naturally occurring weather situation that may endanger equipment, or require adjustments to the normal operations of the facility. Risks to personnel at the project would be minimized through preparation of and implementation of an Emergency Plan that includes planning for weather contingencies.

• Geological. This type of emergency deals with seismic activity and related geological phenomena. As discussed in Section 3.1 Earth, the likelihood of earthquake at the site is very low.
• Security. This type of emergency includes bomb threats, civil unrest, sabotage, or any other man made threats to the facility or personnel. The risk of a security emergency in this location and to this type of facility is considered very low.

Comment: So this wind farm would be operating in an area that gets up to 3 meters of snow in the Winter? There would be hail, high winds, thunderstorms, and extreme cold weather? Personnel would have operate in this environment? What does OSHA have to say about this?

Project Decommissioning

The health and safety risks associated with decommissioning will be similar to those during the construction process. In compliance with WAC 463-72 Site Restoration and Preservation, the Applicant will provide EFSEC with an initial site restoration plan at least ninety days prior to the beginning of site preparation. The plan will address site restoration that would occur at the conclusion of the project's operating life (estimated to be 30 years), and restoration in the event

the project is suspended or terminated during construction or before it has completed its useful operating life. The plan will include or parallel a decommissioning plan for the project.

The initial site restoration plan will be prepared in sufficient detail to identify, evaluate, and resolve all major environmental health issues presently anticipated. If impacts to environmental health are anticipated to occur as a result of site restoration and project decommissioning, mitigation measures will be proposed as part of the plan.

3.6.2.2 No Action Alternative

Under the No Action Alternative, the wind energy project would not be built. The risk of fire due to lightning strikes or human activity in the general area would continue at their present levels, as would the risk of hazardous waste release, vandalism, and traffic accidents. The electrical energy that would otherwise be produced by the project would need to be obtained from another generating source.

3.6.3 MITIGATION MEASURES

The following mitigation measures are identified to avoid, minimize, and compensate for potential impacts to public health and safety to the extent feasible.

• Prepare Emergency Plans for the project containing the following components:
-Fire Protection and Prevention Plan. A Fire Protection and Prevention Plan would be developed for EFSEC approval and implemented, in coordination with the Skamania County Fire Marshall and appropriate agencies. As part of the plan, the construction manager would be responsible for

staying abreast of fire conditions in the project area by contacting DNR and implementing any necessary fire precautions.

-Personal Injury Response Plan. Procedures will be developed for construction, operation and maintenance of the project to describe procedures to be followed in the event of a personal injury, including who is to be alerted, contacting 911, how to alert others in the immediate vicinity, remaining with the employee, and administering first aid until medical assistance arrives.

-Safety Plan. Prior to the commencement of any construction work, the construction contractor would be required to prepare a Safety Plan that would apply to all contractor and subcontractor personnel working at the site. The plan would be designed to ensure compliance with all laws, ordinances, regulations, and standards concerning health and safety. The contractor would assign a safety manager with the authority to issue a "stop work" notice when health and safety issues arise.

-SPCC Plan. While storage of chemicals on site would be minimal, the project could require an SPCC Plan that would protect groundwater. The SPCC Plan would apply to both construction and operation if hazardous materials were stored on site in quantities sufficient to trigger the plan requirement.

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-Hazardous Waste Management Plan. Hazardous materials to be used or stored on site would be limited to small quantities of materials used for maintenance (cleaning and painting), lubrication of equipment, and possibly fuel. During construction, the construction contractor would be required to prepare a Hazardous Waste Management Plan that complies with state and federal hazardous waste management laws for handling, storage, and disposal. A similar plan would be prepared and implemented for operation.
• Report conditions affecting the safety of the project to EFSEC, including any condition, event, or action that might compromise the safety, stability, or integrity of any facility or the ability of any equipment to function safely; or that might otherwise adversely affect life, health, or property.
• Develop agreements related to emergency planning with Skamania County Department of Emergency Management prior to project construction. This agreement would be provided to EFSEC and attached to the Emergency Plan prior to implementation.
• Comply with all applicable local, state, and federal safety, health, and environmental laws, ordinances, regulations, and standards. Some of the main laws, ordinances, regulations and standards that would be reflected in the design, construction, and operation of the project are as follows:
-Occupational Safety And Health Act of 1970 (29 USC 651, et seq.) and 29 CFR 1910, Occupational Safety and Health Standards
- Uniform Fire Code
- Americans with Disabilities Act
- Uniform Fire Code Standards
- Uniform Building Code

-National Fire Protection Association design standards for the requirements of fire protection systems
-National Institute For Occupational Safety And Health requirements that safety equipment carry markings, numbers, or certificates of approval for stated standards
- American Society of Mechanical Engineers plant design standards
• American National Standards Institute plant design standards
- National Electric Safety Code
- American Concrete Institute Standards
- American Institute of Steel Construction Standards
- National Electric Code

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• Utilize the following measures to mitigate the risk of fire or explosion:
-The construction manager would be responsible for staying abreast of fire conditions in the project area by contacting DNR and implementing any necessary fire precautions
-A Fire Protection and Prevention Plan would be developed for EFSEC approval and implemented by the Applicant, in coordination with the Skamania County Fire Marshall and appropriate agencies
-Both the wind turbine generators and the substation would be equipped with lightning protection systems

Table 3.6-5 lists sources of potential fire and explosion along with measures to mitigate the risk of either occurring.

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Table 3.6-5
Fire and Explosion Risk Mitigation

Construction or Operation	Potential Fire or Explosion Source	Mitigation Measures
Construction and Operation	General Fire Protection	• All on-site service vehicles fitted with fire extinguishers • Fire station boxes with shovels, water tank sprayers, etc. installed at multiple locations on site along roadways during summer fire season • Minimum of one water truck with sprayers must be present on each turbine string road with construction activities during fire season
Construction and Operation	Dry vegetation in contact with hot exhaust catalytic converters under vehicles	• No gas powered vehicles allowed outside of graveled areas • Mainly diesel vehicles (i.e. w/o catalytic converters) used on site

• Use of high clearance vehicles on site if used off-road Construction and Operation
Smoking • Restricted to designated areas (outdoor gravel covered areas)
Construction and Operation
Explosives used during excavation
• Only state-licensed explosive specialist contractors are allowed to perform this work—explosives require special detonation equipment with safety lockouts
• Clear vegetation from the general footprint area surrounding the excavation zone to be blasted
• Standby water spray trucks and fire suppression equipment to be present during blasting activities
Construction and Operation
Electrical fires • Use generally high clearance vehicles on site
• No gas powered vehicles allowed outside of graveled areas
• All major construction equipment used is to be diesel powered (i.e., without catalytic converters)
Construction and Operation
Lightning • Specially engineered lightning protection and grounding systems used at wind turbines and at substation
• Footprint areas around turbines and substation are graveled with no vegetation
Construction Portable generators – hot exhaust
• Generators not allowed to operate on open grass areas
• All portable generators to be fitted with spark arrestors on exhaust system
Construction Torches or field welding equipment
• Immediate surrounding area would be wetted with water sprayer
• Fire suppression equipment to be present at location of welder/torch activity
Construction and Operation
Electrical arcing • Electrical designs and construction specifications meet or exceed requirements of the National Electric Code and National Fire Protection Agency

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• Require that all on-site operations employees would be responsible for contributing to ongoing fire prevention in the project area through the following programs:
- Operational Safety Program
- Operations Written Safety Program
- Emergency Action Plan
- Fire Prevention Plan
• Develop on-site emergency plans would be prepared for the project in case of a major natural disaster or accident relating to or affecting the project. The plans would describe the emergency response procedures to be implemented during various emergency situations that may affect the project or surrounding community or environment. In addition to the above measures, Whistling Ridge Energy LLC would:
- Provide detailed maps that show all access roads to the project
-Provide keys to a master lock system that would enable emergency personnel to unlock gates that would otherwise limit access to the project
- Use spark arresters on all power equipment, e.g., cutting torches and cutting tools

-Inform workers at the project site of emergency contact phone numbers and train them in emergency response procedures
- Carry fire extinguishers in all maintenance vehicles
- Coordinate with DNR when the fire danger is high
-Comply with equipment rules and regulations required by DNR for work conducted in wildland/forested lands
• Prepare in advance to reduce the potential for traffic accidents. Mitigation for lowering the risk potential of traffic accidents includes:
-A Transportation Management Plan (TMP) that would direct and obligate the contractor to implement procedures to minimize traffic impacts would be prepared in consultation with both WSDOT and Skamania County and submitted to EFSEC for approval. The TMP would include requirements for coordination of project-related construction traffic and WSDOT planned construction projects, along with requirements for coordination of project-related construction traffic and Skamania County, City of Bingen, and City of White Salmon summer recreational traffic.
-Whistling Ridge Energy LLC and its contractors would be required to comply with State and County permitting requirements for over-size and over-weight vehicles.

Comment: There are no designated haul routes for Whistling Ridge, as far as the public is aware. I have gone to our Skamania County Road Department and talked with our Larry Douglas, the department head and he stated that they were working on a draft but that it is not available for public disclosure. They are using Klickitat County's Haul Route Agreement as a go-by; this was for the Windy Ridge project in Klickitat. However, Mr. Douglas stated that Klickitat's engineer had expressed that if they had to do it again, they would put in more restrictions on road usage, in the Haul Route Agreement. Since Skamania County is not giving out the draft Haul Route Agreement that they would be implementing for Whistling Ridge, the public doesn't really know which roads are going to be widened, straightened, re-constructed, etc. The public doesn't really know anything specific about the stresses that will be put on the roads, if roads will have to be rebuilt. This is a serious inadequacy of the DEIS and should be addressed prior to any decision on the proposed project.

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-Whistling Ridge Energy LLC would be required to notify land owners in the project vicinity prior to construction of transportation routes that would be used for construction equipment and labor.

-Approved State and/or County advanced warning construction signs would be placed prior to and during construction.

-Certified flaggers would be used when necessary to direct traffic when over-size and over-weight trucks either enter or exit public roads, to minimize risk of accidents.

-Pilot cars would be used both in front of and behind all trucks transporting over-size or over-weight loads on all public roadways.

-Traffic flow would not be restricted for more than 20 minutes during the construction phase.

-All loads over 10 feet wide traveling on SR 14 from east of the proposed project site between MP 76.77 and 76.91 would require three pilot cars, two in front and one in the rear. The two front pilot cars would be required to maintain a minimum 500-foot separation. The lead pilot car in front of the load would warn oncoming traffic of the over-size load, and the pilot car immediately in front of the over-size load would be responsible to stop all oncoming traffic.

3.6.4 UNAVOIDABLE ADVERSE IMPACTS

Unavoidable adverse impacts to environmental health are anticipated to be minimal.

Because there would be no need to transport, store, or combust fuel to generate power, the risk of unintentional or accidental fire or explosion or discharge to the environment during both construction and operations would be minimal. The risk of accident during construction would be no higher than for any large construction project and would be minimized through standard construction safety requirements and procedures. The risk of accident during operation would be minimal.

3.6.5 REFERENCES

American Wind Energy Association (AWEA). 2008. Wind Energy Siting Handbook. February.

Caithness Windfarm Information Forum (Caithness). 2006. Summary of Wind Turbine Accident data to November 1st 2006. Accessed at: www.caithnesswindfarms.co.uk.

———. 2009. Summary of Wind Turbine Accident Data to 31st December 2009. Accessed at ttp://www.caithnesswindfarms.co.uk.

Committee for Renewable Energy for Barrington. 2008. Health and Safety Report of the Health and Safety Subcommittee. Committee for Renewable Energy for Barrington, Rhode Island. Updated August 21.

3-111

Carlson, John. Skamania County Emergency Management. Phone conversation with Katie Carroz, Carroz Consulting LLC. December 30, 2008.

Cox, Dave. Undersheriff, Skamania County Sheriff's Office. Phone conversation with Katie Carroz, Carroz Consulting LLC. December 17, 2008.

Energy Facility Site Evaluation Council (EFSEC). 2007. Kittitas Valley Wind Power Project Final Environmental Impact Statement. February.

Epilepsy Foundation. 2009. Shedding Light on Photosensitivity, One of Epilepsy's Most Complex Conditions. By Guiseppe Erba, M.D. Accessed at: http://www.epilepsyfoundation.org/about/photosensitivity/gerba.cfm.

Fullerton, Gail A. and Ole Helgerson. 2008. Underwood Community Wildfire Protection Plan Accessed December 12, 2008 at

http://www.skamaniacounty.org/Wildfire/UnderwoodCWPP/Underwood%20CWPP%20Draft.pdf.

Gauger, J.R. 1985. IEEE Transactions on Power Apparatus and Systems. PA-104. September.

Hill, Gail Kinsey. 2008. Siemens fined $10,500 for wind turbine tower collapse that killed worker. The Oregonian. February 26.

Hovey, Russ. Department of Natural Resources. Phone conversation with Katie Carroz, Carroz Consulting LLC. January 13, 2009.

Klickitat and Skamania Counties. 2006. Klickitat and Skamania County, Washington Community Wildfire Protection Plan. April 26. Accessed at: http://skamania.wsu.edu/documents/KliciktatandSkamaniaCWPP-nosig.pdf.

Morgan, Colin, Ervin Bossanyi, and Henry Seifert. 1998. Assessment of Safety Risks Arising from Wind Turbine Icing. April.

Municipal Research and Services Center of Washington (MSRC). 2008. MSRC Website. Accessed December 17, 2008 at http://www.mrsc.org/Subjects/PubSafe/Fire/fireservice.aspx#Skamania.

National Institute of Environmental Health Sciences. 2002. EMF: Questions and Answers.

National Research Council and National Academy of Sciences (NRC/NAS). 2007. Environmental Impacts of Wind-Energy Projects.

Seifert, Henry, Annette Westerhellweg, and Jürgen Kröning. 2003. Risk Analysis of Ice Throw from Wind Turbines. Paper presented at BOREAS 6, 9 to 11 April 2003. Pyhä, Finland.

Skamania County Emergency Medical Service (EMS). 2008. Website. Accessed December 19, 2008 at http://www.skamaniaems.com/index.html.

Silva, M., N. Hummon, and D. Rutter. 1988. Power frequency magnetic fields in the home. February. IEEE-PES, Paper 88 WM 101-8. ...

3-112

Skyline Hospital. 2008. Skyline Hospital Website. Accessed December 19, 2008 at http://www.skylinehospital.com/index.html.

Washington Association of Sheriffs and Police Chiefs (WASPC). 2008. Criminal Justice

Information: Crime in Washington. Accessed December 19, 2008 at

http://www.waspc.org/index.php?c=Criminal%20Justice%20Information%20Support.

Washington State Patrol. District 5 Public Information Contact, Phone conversation with Katie Carroz, Carroz Consulting LLC. January 26, 2009.

Weeks, Joe. Southeast (Ellensburg) Region of the Washington State Department of Natural

Resources Fire Service. Phone conversation and email with Katie Carroz, Carroz

Consulting LLC. February 5, 2009.

3.7 NOISE

This section describes the existing noise levels in the vicinity of the Project and the potential noise impacts from construction and operation of the proposed project.

3.7.1 AFFECTED ENVIRONMENT

3.7.1.1 Analysis of Environmental Noise

Noise is generally defined as loud, unpleasant, unexpected, or undesired sound that is typically associated with human activity and that interferes with or disrupts normal activities. Although exposure to high noise levels has been demonstrated to cause hearing loss, the principal human response to environmental noise is annoyance. The response of individuals to similar noise events is diverse and influenced by the type of noise, the perceived importance of the noise and its appropriateness in the setting, the time of day and the type of activity during which the noise occurs, and the sensitivity of the individual.

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air, and are sensed by the human ear. Sound is generally characterized by several variables, including frequency and intensity. Frequency describes the pitch of the sound and is measured in Hz, while intensity describes the sound's loudness and is measured in decibels (dB). Decibels are measured using a logarithmic scale. A sound level of 0 dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB. Sound levels above approximately 110 dB begin to be felt inside the human ear as discomfort and eventually pain at 120 dB and higher levels. The minimum change in the sound level of individual events that an average human ear can detect is about 1 to 2 dB. A 3 to 5 dB change is readily perceived. A change in sound level of about 10 dB is usually perceived by the average person as a doubling (or if minus 10 dB, halving) of the sound's loudness.

Due to the logarithmic nature of the decibel unit, sound levels cannot be added or subtracted directly and are somewhat cumbersome to handle mathematically; however, some simple rules are useful in dealing with sound levels. First, if the intensity of a sound is doubled, the sound

level increases by 3 dB, regardless of the initial sound level. For example: 60 dB + 60 dB = 63 dB, and 80 dB + 80 dB = 83 dB.

Sound level is usually expressed by reference to a known standard. This report refers to sound pressure level (SPL). In expressing sound pressure on a logarithmic scale, the sound pressure is compared to a reference value of 20 micropascals (μPa). SPL depends not only on the acoustic power of the source, but also on the distance from the source and on the acoustic characteristics of the space surrounding the source, the receiver, and the path between them. A sound power level, on the other hand, is analogous to the wattage of a light bulb: it describes a source's rate of emitted acoustical energy and is not distance dependent. Using the same light analogy, SPL would be the brightness or intensity of light that can be measured at a specific distance from a source. To clarify the distinction between sound power level and SPL, the latter should always be specified with a location or distance from the noise source.

The distance value associated with SPL is an important metric, as the decrease in measurable sound level due to increasing distance from any single sound source normally follows the inverse square law. In other words, SPL changes in inverse proportion to the square of the distance from the sound source. As a general rule, at distances greater than 50 feet from a noise generator such as a wind turbine, SPL drops at a rate of 6 dB with each doubling of distance. Additionally, some sound energy is absorbed in the medium (e.g., air) through which it travels as a function of temperature, humidity, and the frequency of the sound. This attenuation can be up to 2 dB over 1,000 feet. The overall sound propagation drop-off rate will vary based on other conditions such as natural terrain and intervening obstructions.

Sound frequency (Hz) is a measure of how many times each second the crest of a sound pressure wave passes a fixed point. For example, when a drummer beats a drum, the skin of the drum vibrates a number of times per second. When the drum skin vibrates 100 times per second it generates a sound pressure wave that is oscillating at 100 Hz, and this pressure oscillation is perceived—by way of the inner ear organs and their connection to the brain—as a tonal pitch of 100 Hz. Sound frequencies between 20 and 20,000 Hz are within the range of sensitivity of the best human ear.

Sound from a tuning fork contains a single frequency (a pure tone), but most sounds one hears in the environment do not consist of a single frequency but rather a broad band of frequencies differing in sound level. The method commonly used to quantify environmental sounds consists of evaluating frequencies of sound according to a weighting system that reflects that human hearing sensitivity: less sensitive at low frequencies and extremely high frequencies than at the mid-range (e.g., speech) frequencies. This is called "A-weighting," and the measured decibel level adjusted by the A-weighting constants is called the A-weighted sound level (dBA). In practice, the level of a noise source is conveniently measured using a sound level meter that includes a filter corresponding to the dBA curve of adjustment constants across the audible spectrum.

C-weighting is another type of filter, with adjustments that help expose low-frequency sound sources that the ear does not detect well, such as compressors, pumps, and diesel engines. For

the same measured sound, it is not uncommon for corresponding dBC and dBA levels to vary. As an example, the difference between dBC and dBA levels within an office building may be 20

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dB (i.e., 40 dBA and 60 dBC). These wind turbines are not a source of substantial low-frequency noise. Because low frequency sound is less audible to human hearing, C-weighting is often used to assess potential annoyance from rattling due to low frequency noise that may excite vibration in structures.

Although the dBA may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a mixture of noise from distant sources that creates a relatively steady background noise in which no particular source is identifiable. A single descriptor called the equivalent sound level (Leq) may be used to describe sound that is changing in level. Leq is the energy-mean dBA during a measured time interval. It is the "equivalent" constant sound level that would have to be produced by a given source to equal the acoustic energy contained in the fluctuating sound level measured. In addition to the energy-average level, it is often desirable to know the acoustic range of the noise source being measured. This is accomplished through the maximum Leq (Lmax) and minimum Leq (Lmin) indicators that represent the root-mean-square maximum and minimum noise levels measured during the monitoring interval. The Lmin value obtained for a particular monitoring location is often called the acoustic floor for that location.

To describe the time-varying character of environmental noise, the statistical noise descriptors L10, L50, and L90 are commonly used. They are the noise levels equaled or exceeded 10 percent, 50 percent, and 90 percent of the measured time interval, respectively. Sound levels associated with L10 typically describe transient or short-term events. For the L50 descriptor, half of the sounds during the measurement interval are softer than L50 and half are louder. Levels associated with L90 often describe background noise conditions and/or sound sources thatexhibit continuous, "steady-state" characteristics.

Finally, another sound descriptor known as the day-night average sound level (Ldn) represents the average sound level for a 24-hour day and is calculated by adding a 10 dB penalty only to sound levels during the night period (10:00 PM to 7:00 AM). The Ldn is typically used to define acceptable land use compatibility with respect to noise. Because of the night-time penalty associated with the Ldn descriptor, the Leq for a continuously operating sound source during a 24hour period will be numerically less than the day-night level. Thus, and by way of example, for a power plant operating continuously for periods of 24 hours, the Leq will be 6 dB lower than the Ldn value.

Table 3.7-1 provides sound levels of typical noise sources and environments to provide a frame of reference.

Aside from industrial and other settings where workers may be exposed to very high noise levels and the risk of hearing loss, environmental noise effects are typically limited to subjective impacts (e.g., annoyance, nuisance, dissatisfaction) and activity interference (i.e., impacts to

sleep, speech, and learning). Despite attempts by prominent acousticians to satisfactorily quantify the association between measurable sound levels and corresponding reactions of annoyance and dissatisfaction, there is no way to measure the subjective impacts of noise. Further, the aforementioned variability of individual human sensitivity and/or tolerance to noise defies creation of a common standard.

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Table 3.7-1
Common Noise Levels and Subjective Human Responses

Noise Source
(at a given distance)
A-WeightedSound
Pressure
Level in
Decibels
Noise
Environment
Human Judgment of
Noise Loudness
(relative to a reference SPL
of 70 decibels)
Military jet take-off with after-burner
(50 feet), civil-defense siren (100 feet) 140, 130 Aircraft Carrier
Flight Deck
Commercial jet take-off (200 feet) 120 Thunderclap Threshold of Pain
32 Times as Loud
Pile driver (50 feet) 110 Rock Music
Concert
Average Human Ear
Discomfort
16 Times as Loud
Ambulance siren (100 feet), newspaper press (5
feet), power lawn mower (3 feet) 100 Very Loud
8 Times as Loud
Motorcycle (25 feet), propeller plane flyover
(1,000 feet), diesel truck, 40 miles per hour (50
feet)
90 Boiler Room
Printing Press Plant
OSHA threshold for 8-Hour
Exposure
4 Times as Loud
Garbage disposal (3 feet) 80 2 Times as Loud
Passenger car, 65 miles per hour (25 feet),

vacuum cleaner (10 feet) 70
Data Processing
Center, Department
Store
Reference Loudness
Moderately Loud
Normal conversation (5 feet), air-conditioning
unit (100 feet) 60 Private Business
Office, Restaurant 1/2 as Loud
Light traffic (100 feet) 50
Lower Limit of
Daytime Urban
Ambient Sound
1/4 as Loud
Bird calls (distant) 40 Quiet Urban
Nighttime 1/8 as Loud
Soft whisper (5 feet)
30 Recording Studio,
Library
Very Quiet
1/16 as Loud
20 Whistling, Rustling
Leaves
Just Audible
1/32 as Loud
10
Breathing
Barely Audible
1/64 as Loud
0 Threshold of Hearing
1/128 as Loud

Source: URS internal information and Table N-2136.2 on p. 18 of the Technical Noise Supplement (Caltrans 1998).

3.7.1.2 Regulatory Overview
Washington State and Skamania County Noise Limits

WAC 463-62-030 states that energy facilities shall meet the noise standards established in Chapter 70.107 RCW, also known, in short, as the "Noise Control Act of 1974", as implemented in the requirements of WAC 173-60. SCC Title 8 Chapter 22: Noise Regulations identifies limits and exceptions specific to noise in Skamania County. SCC 8.22 was adopted pursuant to, and is consistent with, WAC 173-60. Environmental designations for noise abatement (EDNA) are established in SCC Section 8.22.080 and WAC 173-60-030. These rules establish maximum permissible environmental noise levels and are based on the EDNA, which is defined as an area

or zone (environment) within which maximum permissible noise levels are established. There are three EDNA classes:

• Class A. Lands where people reside and sleep (such as residential)
• Class B. Lands requiring protection against noise interference with speech (such as commercial/recreational)
• Class C. Lands where economic activities are of such a nature that higher noise levels are anticipated (such as industrial/agricultural).

The noise limits that a new source can impose for each land use classification are presented in Table 3.7-2.

Table 3.7-2
Washington Maximum Permissible Sound Levels
(Leq(1) in dBA)

EDNA of Noise Source
EDNA of Receiving Property
Class Aa
(Residential)
Class B
(Commercial)
Class C
(Agricultural, Industrial)
Class A 55/45 57 60
Class B 57/47 60 65
Class C 60/50 65 70

aSound limits shall be reduced by 10 dBA between the hours of 10 PM and 7 AM at Class A EDNAs

Source: WAC Chapter 173-60. Standard applies at property line of receiving property.

The project is sited on land zoned as Forest Land 20 (FL 20) and Unmapped (UNM) zones. Approximately 0.9 mile west of the project site, the alternative Operations and Maintenance facility site would be located in the R-5 zone. Both the project site and the alternative Operations and Maintenance facility site are used for commercial timber harvest. Based on current zoning and land use, a reasonable interpretation would classify the project site as a noise source having an environmental designation of Class C EDNA, and the alternative Operations and Maintenance site as having an environmental designation of Class A EDNA. With respect to the receiving land uses, this noise analysis has identified some receiver locations being within agriculturally zoned lands that could normally be classified as Class C EDNA. Since the WAC does not specifically address the situation of an occupied residential structure located on an agricultural parcel, one might assess the residence as Class A EDNA and the outlying property

line as Class C EDNA. EFSEC has accepted such an interpretation for other wind energy projects such as Wild Horse and Kittitas Valley, the latter of which had approval upheld by the Washington Supreme Court. While other interpretations may be feasible, Table 3.7-3 illustrates the Class A (Residential) receiver noise level limitations for noise generated from a Class C (Commercial) EDNA (SCC 8.88.090, 100) source, including adjustments based on the duration of noise exposure time.

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Table 3.7-3
Class A EDNA Receiver Noise Limits
(dBA)

Equivalent Noise Level
Exposure Time(Time / Statistic)
Daytime(7 AM – 10 PM)
Nighttime
(10 PM – 7 AM)
1 hour / Leq 60 50
15 minutes / L25 65 55
5 minutes / L16.7 70 60
1.5 minutes / L2.5 75 65

Levels shown are at the property line of the receiving property and indicative of a source that is located in a
Class C EDNA

Notwithstanding the above and per 173-60-050 WAC, there are exemptions to the limits for certain noise-producing activities or source types as follows:

- Construction noise (including blasting) between the hours of 7 AM and 10 PM
- Motor vehicles when regulated by 173-62 WAC ("Motor Vehicle Noise Performance Standards" for vehicles operated on public highways)
- Motor vehicles operated off public highways, except when such noise affects residential receivers
- Noise from electrical substations (WAC 173-60-050[2][a])

Despite these exemptions, 173-60-50(6) WAC states, "Nothing in these exemptions is intended to preclude the Department from requiring installation of the best available noise abatement technology consistent with economic feasibility."

US Environmental Protection Agency and Occupational Safety and Health Administration

While the US Environmental Protection Agency (EPA) has no regulations governing environmental noise, the EPA has conducted extensive studies to identify the effects of certain sound levels on public health and welfare. An EPA document (USEPA 1974) identifies sound

levels "requisite to protect the public health and welfare with an adequate margin of safety." The EPA specifies a day-night sound level (Ldn) of 55 dBA for outdoor areas, where quiet is a basis for use. The Ldn is similar to the 24-hour Leq except that a 10-decibel penalty is added to sound levels between 10 PM and 7 AM to account for sleep interference. For a potentially continuous source of noise such as operation of the project, the 55 dBA Ldn effectively translates to a 49 dBA hourly Leq, which is generally consistent with the 50 dBA Leq(1) required by Skamania County and the State of Washington. However, this EPA finding is guidance, not regulation.

The EPA's 49–50 dBA Leq(1) sound level is far less than what is usually associated with hearing loss. The federal Occupational Safety and Health Administration (OSHA) has developed noise standards designed to address worker health and safety risks associated with noise exposure and

the potential for noise-induced hearing loss. The action level under these OSHA standards is an 8-hour time-weighted average of 85 dBA. Exposure to sound in excess of this standard requires the employer to initiate a hearing conservation program to evaluate the exposure, its duration, possible engineering controls to reduce noise and the provision of hearing protection to employees. The decibel levels covered by the state standards in WAC 173-60-110 are well below OSHA hearing impact standards.

Low Frequency Noise

Low frequency sound typically ranges from 100 Hz to 20 Hz, the latter of which is the generally understood limit audible to the human ear. WAC 173-60-110 uses the A-weighting scale because it is a standard that characterizes sound frequencies that are more sensitive to the human ear. Local jurisdictions within the State of Washington that have a C-weighted scale standard do not apply it to wind turbines. There is no Washington State standard associated with the C-weighted scale for low-frequency noise because the C-weighted scale is primarily used as an indicator of low frequency induced noise vibrations.

3.7.1.3 Affected Environment
Noise Receivers

Although Figure 3.7-1 shows that there are many potential noise-sensitive receivers surrounding the project vicinity, the three receivers closest to the project wind turbine tower locations are the two closest residences, which are approximately 0.48 mile (2,560 feet) southeast of Tower A1 (R1 on Figure 3.7-1) and 0.8 mile (4,265 feet) southwest of Tower B16 (R2 on Figure 3.7-1). A potential future residence (R3 on Figure 3.7-1) is approximately 0.38 mile (2,000 feet) from Tower A1.

Figure 3.7-1
Job No. 33758687 Noise Level Contours

Existing Sound Levels

While some reference materials such as the Federal Transit Administration's Transit Noise and Vibration Impact Assessment Guide (FTA 2006) offer techniques to make a coarse estimate of existing noise levels for an area based on parameters such as population density, the reality is that at residences in or near any project proposed for development, there is no such single and consistent background noise level. The background noise level can vary at a given location or across different locations on a project area due to factors such as changing climate conditions and the presence of contributing noise sources (including flows of water associated with creeks or canals, agricultural equipment operations, irrigation pumps and equipment, livestock, road, rail and air traffic, wildlife such as birds or insects, dogs, and routine human activities). Hence, a field survey that includes documentation of observed or perceived noise events and monitoring of ambient sound at different times of day at different locations helps to accurately depict actual conditions that influence pre-project ambient sound level. These conditions and their influence on ambient sound level offer clues as to how the increase in noise level resulting from the operation of any project, including those that emit a constant level, will likely vary with location and time of day.

To help establish representative baseline ambient sound levels for the project vicinity and characterize the existing noise environment in the areas occupied by the receivers shown in Figure 3.7-1, a set of long and short-term sound level measurements were conducted from January 20 to 22, 2009. The locations of the short-term and long-term measurement sites were selected to approximate the existing ambient sound in the vicinity of Ausplund Road (and hence, Receiver 1). Likewise, the location of ST2 was chosen to generally represent the ambient sound level for the Mill A community and its surroundings west of the project, on which Receiver 2 is located.

The measurement locations included a position near the intersection of Ausplund Road and Kollack-Knapp Road (ST1), and a position near the intersection of Jessup Road and Manzanola Road (ST2). For purposes of the impact analysis described in this document, these measurement locations are considered reasonably representative for each general area, and more specifically R1 and R2, respectively, on the basis of similar expected ambient sound sources, despite the dissimilarity of locations. For instance, the ambient sound environment measured at ST1 likely contains the same typically identifiable sound components (e.g., distant bird song, dog barks, roadway traffic) and a generally unidentifiable "background" that one might measure at the precise geographic location of R1.

A Bruel+Kjaer 2250 (SN: 2653963) ANSI Type-1 real-time sound analyzer, fitted with a standard microphone windscreen and mounted on a five-foot tall tripod, was used for the short-term measurements. The instrument was field calibrated before and after each measurement period with an acoustic calibrator. All sound level measurements were performed in accordance with International Organization for Standardization guidelines (ISO 1996a, b, and c). Weather conditions during the survey period were seasonably cold with overcast skies, but there was no

precipitation during the measurement periods. The air temperature varied from 30 to 44 degrees Fahrenheit, with 33 to 53 percent relative humidity. Measured ground wind speeds in the vicinity of the measurement positions were low, with averages ranging from 0 to 1 mph, and

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directed toward the north for all measurements. Detailed weather conditions for individual noise measurements and a summary of the short-term measurement data are included in Table 3.7-4.

A long-term measurement (LT1) was conducted at a position near the corner of Ausplund Road and Kollock-Knapp Road using a Larson Davis 720 (SN: 0436) ANSI Type 2 Integrating sound level meter. With only the windscreen-covered microphone exposed to the outdoor environment, the sound level meter was placed in a locked, weather-resistant case and secured to a nearby tree. The long-term measurement consisted of consecutive 15 or 30 minute averages conducted over an uninterrupted 24-hour period. The instrument was field calibrated before and after the measurement period with an acoustic calibrator (CAL 200 s/n: 5789). Data from the long-term measurement is presented in Table 3.7-5.

Field observations associated with the short and long-term measurements are as follows:

ST1. This measurement location was at the corner of Ausplund Road and Kollock-Knapp Road. There are several residential receivers located in this general area. The first short-term measurement at this location was conducted between 11:52 AM and 12:12 PM on January 21, 2009. The first measurement noise sources included distant aircraft, distant roadway traffic, dogs barking in the distance, and birds vocalizing. The second short-term measurement was conducted between 6:00 PM and 6:20 PM on January 21, 2009. The second measurement noise sources included distant aircraft, distant roadway traffic, and dogs barking in the distance. The third short-term measurement at this location was conducted between 11:32 PM and 11:52 PM on January 21, 2009. Noise sources during the third measurement included distant roadway traffic and dogs barking in the distance. The first measurement Leq one-minute interval values ranged from 34 to 59 dBA, the second measurement 1-minute Leq values ranged from 27 to 66 dBA, and the third measurement 1-minute Leq values ranged from 25 to 49 dBA. Leq for the entire duration of each of these three measurement periods appears in Table 3.7-4.

ST2. This measurement location was in front of the John Schwab Memorial Tennis Courts on the corner of Jessup Road and Manzanola Road. The sound level meter was approximately 15 feet from Jessup Road. The first short-term measurement at this location was conducted between 12:48 PM and 1:08 PM on January 21, 2009. The first measurement noise sources included distant aircraft, distant roadway traffic, children playing in the distance, and birds vocalizing. The second short-term measurement was conducted between 6:36 PM and 6:56 PM on January 21, 2009. The noise sources for the second short-term measurement included distant aircraft and distant roadway traffic. The third short-term measurement was conducted between

12:08 AM and 12:28 AM on January 22, 2009. Noise sources present during the third short-term measurement included distant roadway traffic. The first measurement Leq one-minute values ranged from 35 to 52 dBA, the second measurement 1-minute Leq values ranged from 34 to

54 dBA, and the third measurement 1-minute Leq values ranged from 31 to 39 dBA. Leq for the entire duration of each of these three measurement periods appears in Table 3.7-4.
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Table 3.7-4
Short-Term Noise Measurement Data Summary

Measurement Location Measured Sound Data
ID Description Time Leq, dBA L10 L50 L90
Leq, dBA
without
Cars Temp (F) %RH
Wind
Speed(mph)
Wind
Direction
ST1 Corner of Ausplund Road
and Kollock-Knapp Road
11:52 - 12:12 46 39 35 34 38 35 53 1 North
18:00 - 18:20 49 36 31 28 32 32 35 1 North
23:32 - 23:52 35 32 28 26 30 30 34 0 -
ST2
Just north of the John
Schwab Memorial Tennis
Courts
12:48 - 13:08 41 40 36 35 37 44 40 1 North
18:36 - 18:56 44 40 36 35 36 32 34 1 North
00:08 - 00:28 35 36 35 34 35 30 34 0 -

Measurements conducted on January 21 and 22, 2009

Table 3.7-5
Long-Term Noise Measurement Data Summary

Site ID Measurement Location
Measurement Period 24-hr Measurement Results (dBA)
Start Date Start Time Duration (hh:mm) Leq
L10
L50
L90
LT1 Corner of Ausplund Road and
Kollock-Knapp Road 01/21/09 11:40 am 24:00 46 41 39 38

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LT1. This measurement location was at the corner of Ausplund Road and Kollock-Knapp Road,

on the north side of the roadway. The sound level meter was placed in a locked, weather-resistant case and secured to a tree near the side of the road. The windscreen-covered microphone, connected to the meter by cable, was attached to the tree trunk at approximately 3 to 4 feet above the ground. Concurrent with these short and long-term ambient sound measurements, S.D.S. Co., LLC meteorological stations 320, 321, and 323 collected data on wind speed, direction, and temperature at various elevations above grade. Average reported wind velocities from the station NRG Type 40 anemometers were quite low, and while apparently consistent with the low average wind velocities measured on the ground at the sound measurement positions, were considered potentially compromised by icy conditions due to the low recorded temperatures and high moisture content of the air.

Table 3.7-4 shows the considerable decibel differences between the Leq measurements and the adjusted values when intervals containing documented automotive pass-by events were removed from the short-term measurement data sets (i.e., "without cars"). This change is unsurprising due to the proximity of the real-time sound analyzer to the roadway at ST1 and ST2. Upon removing these intervals, the remaining collected data more accurately depicts the background or a measurement position that is considerably distant from passing road traffic.

Table 3.7-6 presents the arithmetic average Leq of ST1 and LT1.

Table 3.7-6
Average Ambient for ST1/LT1 Measurement Area

	Daytime (Leq, dBA)	Evening (Leq, dBA)	Nighttime (Leq, dBA)
Average Leq without cars	(39+38)/2 = 38	(39+32)/2 = 35	(38+30)/2 = 34
Average Leq with cars	(44+46)/2 = 45	(42+49)/2 = 45	(38+35)/2 = 36

3.7.2 IMPACTS
3.7.2.1 Methodology
Construction

Project construction would take place over a period of 12 months between the hours of 7:00 AM and 7:00 PM Monday through Friday. During construction activities, a varying number of construction equipment and personnel would occupy the project area, which would result in varying levels of construction noise. The project would use conventional construction techniques and equipment, including excavators, bulldozers, heavy trucks (e.g., water truck, dump truck), and similar heavy construction equipment. Specialized construction equipment for logging, foundation building and other tasks using special equipment (e.g., heavy duty cranes) may be needed.

Conventional construction activities would result in a short-term temporary increase in the ambient noise level resulting from the operation of construction equipment. The increase in noise level would be experienced primarily close to the noise source. The magnitude of the

noise effects would depend on the type of construction activity, noise level generated by construction equipment, duration of the construction phase(s), and the distance between the noise source and receiver.

Construction noise impacts associated with the project were assessed with spreadsheet-based noise calculations. User inputs include:

• Distance from source—the distance between the edge of the construction site and the considered receiver
• Duty cycle—the portion of an hour, in aggregate, that a piece of equipment is energized (stationary or mobile) and creating noise
• Quantity—the number of equipment pieces or noise-producing events over a specific time period (e.g., equipment utilization per month)
• Hours—the number of daytime hours (up to 12) that represent a typical daily work shift

These inputs allow sound propagation prediction using the following formula:

Leq = Source SPL + 10 * log10 (Duty Cycle) + 10 * log10 (Quantity) +

10 * log10 (Hours/12) - 20 * log10 (Distance from Source / Reference Distance)

where source SPL and reference distance describe the typical noise, associated with a single piece of equipment, measured at a pre-defined distance. For instance, a chainsaw may have a source SPL of 78 dBA measured at a distance of 50 feet from its operator. Values for source SPL and reference distance have either been reproduced from available manufacturers' data or calculated from industry-accepted formulas linking sound generation to the rated engine horsepower of the equipment. Note that for purposes of model conservatism, air and ground absorption effects are not included.

Operation

Once the project is commissioned and operating normally, the new ambient sound level that can be perceived will be a logarithmic sum of background and project noise. For a wind project, and aside from non-dominant sources such as electrical substations, operation noise level varies with wind speed at the turbines. When available winds are relatively calm, the turbines emit very little noise compared to what occurs when stronger wind conditions have turbines operating at their highest power generation and, concurrently, highest noise levels. Thus, a wind project's noise level at a particular receptor is primarily determined by the wind speed occurring at the turbine and the distance to the closest turbines.

The Cadna/A® Noise Prediction Model (Version 3.71.125) was used to estimate the project-generated sound pressure levels at the property lines and noise-sensitive receivers. Cadna/A® is a Windows® based software program that predicts and assesses noise levels near industrial noise sources based on International Organization for Standardization (ISO) 9613-2 standards for noise propagation calculations. Routinely used by acoustical professionals to develop sound level

predictions from a variety of complex industrial sources, including wind turbines, the model uses these industry-accepted propagation algorithms and accepts sound power levels (in dB re: 1 picowatt) for the nine standard octave bands ranging from 31.5 Hz to 8,000 Hz, as typically provided by the equipment manufacturer and other sources. The calculations account for classical sound wave divergence, plus attenuation factors resulting from air absorption, basic ground effects, and barrier/shielding. Intervening natural and man-made topographical barrier effects were considered as appropriate, including those from structures such as major buildings, tanks, and large equipment.

Table 3.7-7 summarizes octave band sound power level inputs from each type of pre-defined noise source. Given that the exact turbine model to be used for the project has not yet been determined at the time of this report, conservative but realistic and representative values for the type of equipment being considered for this project have been used. For example, the model currently uses data from an industry leading 1.8 MW 50/60 Hz wind turbine, at wind speeds of about six meters per second and nine meters per second at 33 feet (10 meters), in accordance with the protocol established in International Electrotechnical Commission Standard 6140011: 200213. The decibel values shown for the two wind turbine generator wind speeds in Table 3.7-7 at each octave band center frequency include a +2 dB margin, which produces an A-weighted overall level that represents the top end of a range associated with the manufacturer's warranty values.

Table 3.7-7
Noise Model Sound Level Parameters

Project Component Type of Source	Sound Power Level in dB at Octave Band Center Frequency (Hz) Unweighted (linear)								A-Weighted Acoustic
Height (feet)	31.5	63	125	250	500	1,000	2,000	4,000	8,000
Wind Turbine at 6m/s wind speed									
Point	82.7	88.7	95.3	99.7	101.9	100.7	97.4	88.9	82	106.8	104.7	262
Wind Turbine at 9m/s wind speed									

Point 84.9 90.9 97.3 101 103.3 102.6 99.5 91.6 84.4 108.4 106.4 262
Turbine
Transformers Point 60 66 68 63 63 57 52 47 40 72 63 7
Sub Station
component Point 80 86 88 83 83 77 72 67 60 92 83 13

Source: URS internal information and Thomas Mills, personal communication

13 As noted, the modeling is based using conservative and representative values for the type of equipment being considered. The noise model currently uses data from an industry leading 1.8 MW 50/60 Hz wind turbine. The project may use larger wind turbines, up to 2.5 MW, and these could have a different noise profile. However, total project noise would be limited by the 75 MW EFSEC certification. If 1.8 MW turbines were selected, the project could use up to 42 turbines, however if 2.5 MW turbines were selected, only 30 turbines could be built, and overall project noise could be lower.

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The project layout configuration (i.e., the arrangement of wind turbine generators and ancillary equipment on the site) was imported into Cadna/A® from project files provided by the client. The Cadna/A model consequently predicts hourly sound levels, which would be equal at all times of the day in this case. The formula used to derive the overall SPL (in dBA) from sound power level (PWL) is as follows:

$SPL = PWL - 20 \text{ Log } (r) - 10.9 + C$

where r is in meters and C is a dimensionless absorption constant (Harris 1998).

At each studied receptor, the model calculates the acoustical contribution from each input source, which in this exercise using Cadna/A includes all expected wind turbines associated with the project at locations depicted in Figure 3.7-1. When project micrositing occurs and final turbine layout and turbine model are arrived at, additional noise modeling can be performed to re-predict operation noise level and re-evaluate anticipated project compliance with the standards discussed in this Draft EIS.

3.7.2.2 Proposed Action
General Construction Noise

Table 3.7-8 shows the predicted construction noise levels experienced at the closest residences to the project. As per 173-60-050 WAC, construction noise between the hours of 7:00 AM and

10:00 PM are exempt from the receiver noise limit guidelines. Consequently, the calculated values at the three closest receivers comply with the applicable noise standard.
Table 3.7-8
Predicted Construction Noise Levels at Receivers Closest to Project

ID Description (distance/direction)	EDNA Classification	Construction Sound Level Limit (dBA)	Maximum Project Construction Sound Level (dBA)	Complies with Standard
Receiver 1 Residence 0.48 mile (2560') SE of Tower A1	Class A	Exempt	70	Yes
Receiver 2 Residence 0.8 mile (4265') SW of Tower B16	Class A	Exempt	66	Yes
Receiver 3 Residence 0.38 mile (2000') SE of Tower A1	Class A	Exempt	72	Yes

If it is determined to be necessary, blasting would occur during the turbine foundation portion of the construction schedule and only during daytime hours. Blasting noise could possibly be audible at a considerable distance from the construction site and noticeable at residences near the project area. Sound levels from blasting at a receiver would not be extreme, however, and the occurrence would be low in frequency, intermittent, and confined to a period of one to two months. The WAC 173.60.050 exemption for temporary construction noise includes noise from blasting activity, from the aforestated state noise limits between the hours of 7 AM and 10 PM.

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The large distances between much of the project area and potentially affected residences, the temporary nature of construction, and the restriction of construction activities to daytime hours would serve to minimize potential noise impacts from construction activities. Based on the anticipated noise levels and the timing aspects of these impacts, construction noise impacts are expected to be low.

If project construction occurred in phases, the effect on the level of noise impacts would be to extend the total duration of temporary disturbance from project construction, but to reduce the intensity or magnitude of impacts for any individual phase. Construction noise impacts would still be temporary, localized, and low in magnitude, and overall project impacts during construction would remain low in a phased-construction scenario.

General Operation Noise

The predicted operational noise levels at the three closest residences to the project are supplied in Tables 3.7-9 and 3.7-10. This analysis evaluates the existing noise levels at the closest receptors,

and evaluates increases in dBA at these locations. The Washington noise regulations do not require this information; however, the Applicant supplied this information to fully inform EFSEC during the Application for Site Certificate process.

Table 3.7-9
Nighttime Operational Noise Impact Assessment

Receiver
ID
EDNA
Class
Sound Level
Limit (dBA)
Existing
(dBA)
Project
(dBA)
Overall
(dBA)
Increase
(dBA)
Complies
with
Regulation
6 m/sec at 10m height
1 Class A 50 34 36 38 4 Yes
2 Class A 50 35 38 40 5 Yes
3 Class A 50 35 40 41 6 Yes
9 m/sec at 10m height
1 Class A 50 34 37 39 5 Yes
2 Class A 50 35 39 40 5 Yes
3 Class A 50 35 42 43 8 Yes

Figure 3.7-1 depicts these three residential receivers (for the 9 m/s wind speed, 10oC temperature and 70% relative humidity operation case) in two detail maps as part of a larger aerial plan on which predicted noise contours and other known receiver locations have been superimposed. The operation of the project would comply with all applicable noise regulations.

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Table 3.7-10
Daytime Operational Noise Impact Assessment

Receiver
ID
EDNA

Class
Sound
Level Limit
(dBA)
Existing
(dBA)
Project
(dBA)
Overall
(dBA)
Increase
(dBA)
Complies
with
Regulation
6 m/sec at 10m height
1 Class A 60 38 36 40 2 Yes
2 Class A 60 38 38 41 3 Yes
3 Class A 60 38 40 42 4 Yes
9 m/sec at 10m height
1 Class A 60 38 37 41 3 Yes
2 Class A 60 38 39 41 3 Yes
3 Class A 60 38 42 43 5 Yes

Under certain conditions, there is the potential for one or more of the following phenomena to occur that may temporarily cause a variance in the predicted sound levels:

• In the Cadna/A prediction model, all studied wind turbine generators were assumed to operate at the same speed. In reality, very slight differences in operating rotor speeds due to non-uniformities in the passing wind profile can result in intermittent constructive and destructive interference—or what one might call "beats," that can have a perceptible frequency as current research suggests (van den Berg 2006).
• The atmosphere can either be "stable" or "unstable," which in summary are descriptors for how layers of air mass interact. The latter of these two is usually associated with cold air near the ground that is not well coupled to higher air masses. This effect can explain why high wind speeds at wind turbine generator hub height can be substantially greater than those near ground level (van den Berg 2006).
• The relative humidity and ambient temperature have a substantial effect on the attenuation of outdoor sound at high frequencies and long distances through air absorption. Relative humidity and temperature effects can produce a variance of approximately +/- 2 dBA.
• The uncertainty range for the PWL of each wind turbine generator is +/- 2 dBA.
• Due to the very low ground wind speeds recorded during the short-term measurements, actual ambient noise levels at any receiver in the project vicinity may be higher as a result of noise generated by turbulence from wind streaming through vegetative ground cover (i.e., trees and grasses). Further, since wind-generated noise tends to rise at a rate of 2.5

dBA per 1 m/s increase in wind speed, and generally turbine aerodynamic noise rises at a rate of only 1 dBA per 1 m/s increase in wind speed, high wind speeds near the ground may cause background sound (i.e., not project operation) to dominate the perceptible and even measurable ambient sound environment (BLM 2005).
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Because predicted project operation sound pressure levels at the nearest noise-sensitive receivers are at least 7 dBA lower than the 50 dBA Leq compliance threshold, none of these above conditions is expected to result in the project operation exceeding noise regulations.

Low Frequency Sound

Low frequency noise produced by a wind turbine generator can include tonal components produced by the generator and gearbox within the nacelle downstream of the rotor hub, atop the tower mast. The source sound power levels in Table 3.7-7 already include these noise contributors. Modern wind turbine design typically includes sound attenuation features in the nacelle to help reduce the magnitude of these electro-mechanical noise components to the aggregate, so that the spectrum of sound levels at the octave band center frequencies shown in Table 3.7-7 largely describes the aerodynamic effects of the rotor blades interacting with the passing wind profile. Even though there are no relevant regulations and standards related to dBC, the turbine sound power level manufacturer ratings show that C-weighted levels are within 2 dB of A-weighted levels. Therefore, low frequency noise is not anticipated to be an issue for this project.

In earlier generations of wind turbine design, the practice of using downwind rotors allowed turbulence from the tower mast to disrupt favorable aerodynamic conditions for the passing blades, causing considerable low frequency noise. This practice has been abandoned by the contemporary upwind rotor design of virtually all wind turbine generators built in the past five years, including the models contemplated for this project.

The noise produced by air interaction with the rotor blades tends to be broadband noise, but is amplitude-modulated as the upstream blades pass the tower, resulting in what some call a characteristic "swoosh." The blade passage frequency of this "swoosh" is only a temporal modulation of sound and should not be confused with low frequency sounds. Research studies of low-frequency noise emissions from wind turbines have determined that low frequency noise is a function of the wind itself, and that the "swoosh" of the turbines is actually in the readily audible range of frequencies (500 to 1 kiloHertz) (Leventhall 2006). Virtually any sound can be time-modulated without changing its pitch. Thus, low frequency modulation of audible sound does not imply the presence of actual low frequency sound or infrasound, which is discussed in the following subsection.

Information regarding potential impacts from exposure to low frequency noise is inconclusive. Scientific articles suggest that low frequency noise does not pose a health risk (Leventhall 2006). There may, however, be some correlation between an individual receptor's psychological sensitivity to the noise source (like or dislike for the noise source) and complaints regarding discomfort from that noise source. These are sometimes associated with complaints regarding

sleep disturbance. Because sensitivity to noise can be influenced by such psychological factors and can subjectively be deemed significant by an affected individual, regardless of measurable frequency or amplitude level, it is difficult to quantify these impacts or to impose mitigation.

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However, modern turbine designs have been modified to reduce or eliminate low frequency sound.14

Infrasound

The term infrasound describes sound with frequencies of 20 Hz or less that are generally considered below the threshold of human hearing. Such sound, if sufficiently high in magnitude, can still be perceived or even heard as induced by vibration. Natural sources of infrasound include waves, thunder, wind, and even certain species of wildlife.

A review of wind turbine noise measurement studies conducted by Jakobsen (2005) concluded that operation of contemporary wind turbine generators featuring rotors "upwind" of tubular tower masts generated infrasound in the range of 70 G-weighted decibels (dBG) at a distance of one hundred meters. (The G-weighting scale, like the oft-used A-weighting scale for audible sound spectra, is a filter applied to low-frequency sound as described in ISO 7196:1995E.) Jakobsen also notes that this infrasound, usually associated with aerodynamic effects of blade passage past the tower mast, tends to ignore atmospheric sound absorption and ground attenuating effects due its very large wavelength. Hence, one could reasonably expect infrasound to attenuate only with increasing propagation distance.

Recent studies performed for the Canadian Wind Energy Association have described usage of 85–90 dBG as a criterion for human perception of infrasound and, by reasonable extension, the likely threshold for infrasound complaint (HGC Engineering 2006).

The horizontal distances of the project wind turbines to the nearest noise-sensitive receivers are at least 615 meters, which provides sufficient attenuation to offset the amount of decibels that one might add to account for the quantity of wind turbines of the project. Thus, the expected infrasound at the nearest existing receivers (i.e., R1 and R2) would remain under an estimated value of 70 dBG, which is 15 dBG less than the previously stated criteria. This estimated project aggregate wind turbine generator infrasound level also is far below what NASA studies determined (125 dB, linear) as a threshold for potential health impacts (HGC Engineering 2006).

Project Decommissioning

In compliance with WAC 463-72 Site Restoration and Preservation, the Applicant will provide EFSEC with an initial site restoration plan at least ninety days prior to the beginning of site preparation. The plan will address site restoration that would occur at the conclusion of the project's operating life (estimated to be 30 years), and restoration in the event the project is suspended or terminated during construction or before it has completed its useful operating life. The plan will include or parallel a decommissioning plan for the project.

The initial site restoration plan will be prepared in sufficient detail to identify, evaluate, and resolve all major noise issues presently anticipated, including noise impacts from construction activities related to removal of the wind generation equipment and site restoration. If impacts to

14 See, for instance, http://www.bwea.com/ref/lowfrequencynoise.html.

noise are anticipated to occur as a result of site restoration and project decommissioning, mitigation measures will be proposed as part of the plan.

3.7.2.3 No Action Alternative

Under the No Action Alternative, the project would not be constructed. Existing sound levels would be expected to remain largely the same. Although the generally quiet ambient noise levels in the project area would continue, occasionally elevated noise levels in the immediate project vicinity would be expected from ongoing timber harvest activities at the project site.

3.7.3 MITIGATION

The following mitigation measures are identified to avoid, minimize, and compensate for potential noise-related impacts during construction and operation of the propose project to the extent feasible.

- Equip all noise-producing project equipment and vehicles using internal combustion engines with mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specification. Mobile or fixed "package" equipment (e.g., arc-welders, air compressors) would be equipped with shrouds and noise control features that are readily available for that type of equipment.
- Regulate all mobile or fixed noise-producing equipment used on the project for noise output governed by local, state, or federal agency regulations, to comply with such regulations while in the course of project activity.
- Designate that the use of noise-producing signals, including horns, whistles, electronic alarms, sirens, and bells, would be for safety warning purposes only. Unless required for such safety purposes, and as allowable by applicable regulations, no construction-related public address, loudspeaker, or music system would be audible at any adjacent noise-sensitive land use.
- Implement a noise complaint process and hotline number for the surrounding community. The Applicant would have the responsibility and authority to receive and resolve noise complaints.

3.7.4 UNAVOIDABLE ADVERSE IMPACTS

Construction noise is exempt so long as it occurs during daytime hours, and operation noise is

predicted to be less than the nighttime threshold of 50 dBA Leq per Washington State and Skamania County regulations.

The analysis of noise impacts presented here was based on specific design features of the proposed project that were current as of the date of this Draft EIS. These features, such as the turbine manufacturer and model selection, the layout of the turbines on the project site and their corresponding distances to identified closest noise-sensitive receivers, can greatly influence the

analysis results. However, assuming that final turbine selections and siting locations are comparable to those features used in this analysis, no substantial adverse construction or operation noise impacts are anticipated for the project.

3.7.5 REFERENCES

Bureau of Land Management (BLM). 2005. Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States. U.S. Department of the Interior. FEIS 05-11. June. Accessed October 30, 2009 at: http://windeis.anl.gov/documents/fpeis/index.cfm.

California Department of Transportation (Caltrans). 1998. Technical Noise Supplement. October.

Federal Transit Authority (FTA). 2006. Transit Noise and Vibration Impact Assessment. FTAVA-90-1003-06. Office of Planning and Environment.

Harris, Cyril M. 1998. Handbook of Acoustical Measurements and Noise Control. Third Edition. p. 3-2, Eq. 3.2a.

HGC Engineering. 2006. Wind Turbines and Infrasound. Submitted to Canadian Wind Energy Association. November.

International Organization for Standardization (ISO). 1996a. Acoustics – description and measurement of environmental noise – Part 1: Basic quantities and procedures. Ref. No. ISO 1996/1-1982 (E).

———. 1996b. Acoustics – description and measurement of environmental noise – Part 2: Acquisition of data pertinent to land use. Ref. No. ISO 1996-2:1987 (E).

———. 1996c. Acoustics – description and measurement of environmental noise – Part 3: Application to noise limits. Ref. No. ISO 1996-3:1987 (E).

Jakobsen, Jorgen. 2005. Infrasound Emission from Wind Turbines. Journal of Low Frequency Noise, Vibration and Active Control 24, no. 3:150.

Leventhall, Geoff. 2006. Infrasound from Wind Turbines – Fact, Fiction or Deception. Canadian Acoustics 34, no. 2:29-36.

Mills, Thomas. Vestas Wind Systems. Email to Mark Storm, URS Corporation, October 19, 2007.

US Environmental Protection Agency (USEPA). 1974. "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. EPA 550/9-74-004.

van den Berg, G. P. 2006. The sound of high winds: the effect of atmospheric stability on wind turbine sound and microphone noise. Rijksuniversiteit Groningen.

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3.8 LAND USE AND RECREATION

This section describes the existing land uses and recreation areas at the project site and in surrounding areas, and identifies potentially applicable land use policies and zoning ordinances. This section also discusses potential project impacts on land use and recreation, as well as the consistency of the proposed project with local land use plans and zoning ordinances.

3.8.1 AFFECTED ENVIRONMENT

3.8.1.1 Existing Land Use

Project Site

The project site is located in an unincorporated portion of southeastern Skamania County, Washington, about two miles north of the Columbia River (see Figure 1-1). The primary use at the project site is commercial forestry. The site has been used for this purpose for the last century. During this time, the owners and operators have logged the property over a series of approximately 50-year logging rotations. Ongoing tree farming activities include regular clearing, replanting, and harvesting.

Portions of the project site are also used for utility corridors. A natural gas pipeline, owned and operated by Williams Gas, runs from east to west across the project site near the north boundary of the site. Two existing transmission line corridors also cross the project. These approximately 250-foot wide corridors, which generally run in an east-to-west direction, are owned and maintained by BPA. Each corridor is occupied by a high-voltage transmission line and its associated support towers and access roads. The corridors are routinely maintained to remove all tall growing vegetation, as well as any adjacent "danger trees" (i.e., those trees with the potential to fall into the existing lines) in order to avoid interference with these lines.

Surrounding Areas

Land use in the project vicinity is predominately commercial forestry with other typical rural uses and both incorporated and unincorporated communities dispersed throughout (see Figure

3.8-1). The incorporated cities of White Salmon and Bingen, Washington are located adjacent to each other approximately 7 miles southeast of the project site, along the north side of the Columbia River. Directly south and across the Columbia River from Bingen is the City of Hood River, in Hood River County, Oregon. The city of Stevenson, the Skamania County seat, is located approximately 15 miles southwest of the project site along the Columbia River. These incorporated cities have mixed urban uses typical of small communities.

In the more immediate vicinity of the project site, the unincorporated community of Willard is located approximately 2.25 miles northwest of the project site, and the unincorporated community of Mill A is located approximately 1.5 miles west of the site. Other residential uses in the immediate vicinity of the project site are generally rural, low- to medium-density single-family homes between 30 and 50 years old. There are approximately 400 residences and businesses within three miles of the project site (see Figure 3.8-2). A new homesite location has

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been approved approximately 2,000 feet (0.38 mile) from the south property line of the project site.

Commercial forestry areas and the Gifford Pinchot National Forest are generally located to the north of the project site. East of the Little White Salmon River, lands are currently being used for commercial timber production under ownership by S.D.S. Co., LLC, Broughton Lumber Company, and Washington State. The Washington State lands are managed by DNR for commercial harvest to support the State's schools.

To the south of the project site is the Columbia River Gorge National Scenic Area (see Figure 3.8-3). The Scenic Area extends along the Columbia River for about 85 miles and includes 292,500 acres in parts of three Oregon and three Washington counties. In addition to forested areas, land uses within the Scenic Area near the project site on the Washington side of the Columbia River include limited agriculture, mostly pear and apple orchards recently augmented with some wine grape vineyards. On the Oregon side of the Columbia River, land use within the Scenic Area is predominantly commercial timber production and residential. Further south of the Scenic Area in Oregon, land uses include commercial forestry, agriculture (primarily pears, apples, and cherries), and some residential.

SR 14 and the Burlington Northern Santa Fe Railway are located between the project site and the Columbia River, within the Scenic Area. I-84 is located on the Oregon side of the Columbia River, within the Scenic Area.

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Figure 3.8-1
Job No. 33758687 Land Use within Five Miles of the Site

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Figure 3.8-2
Job No. 33758687 Residences within Three Miles of the Project Site

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Figure 3.8-3
Job No. 33758687 Recreation Facilities within Five Miles of the Project Site

3.8.1.2 Recreation

The primary recreation activities within Skamania County are camping, hiking and fishing. Major recreation locations include the Gifford Pinchot National Forest; the Mount St. Helens National Volcanic Monument; the Lewis and Clark Trail Highway, which follows the Columbia River through Skamania County; and the Columbia River Gorge National Scenic Area south of the project area. Informal recreational activities such as hunting, hiking, and mountain biking also take place on private land, subject to landowner approval. There are no formally designated recreational areas within the project site; however, SDS does allow informal recreational use of their land with approval.

Summer recreational activities include water sports such as fishing, swimming, boating, river rafting, kayaking, water skiing, and wind surfing; as well as camping, biking, hiking, horseback riding, hunting, picnicking, and other outdoor sports. Some of these activities continue into the winter, weather permitting. Sightseeing is a popular year-round activity in the Columbia River Gorge. Recreational facilities within a 25-mile radius of the project site are shown on Figure 3.8-3 and listed in Table 3.8-1.

The closest recreational facility is the Underwood Park and Community Center, located near Underwood just off of Cook-Underwood Road, approximately 1.5 miles east of the project site. The community center has a large gymnasium, stage, kitchen, and meeting room; while the park has soccer fields, a pavilion, and a playground. Recreational facilities or activities available closest to the project site include hiking and horseback riding along Buck Creek Trail, Husum Hills Golf Course, BZ Corners Boat Launch, Underwood Park/Community Center, and Drano Lake Boat Ramp.

There are no Skamania County recreation facilities within five miles of the proposed project. However, two national trails, the Lewis and Clark National Historical Trail and the Oregon National Historic Trail, are located within 5 miles of the project site. These trails roughly follow SR 14 and I-84, respectively. Also within 5 miles of the site, the White Salmon River is designated as a Wild and Scenic River, and within 25 miles, the Klickitat River is also so designated.

There are no new parks or recreation facilities planned within a 5-mile radius of the site, either as part of the Skamania County Parks and Recreation Master Plan or the Columbia River Gorge National Scenic Area Management Plan. No federal recreation regulations apply to the site, nor

are there federal or state plans for recreation facilities on or near the site.

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Table 3.8-1
Public Park and Recreation Facilities within 25 Miles

National Scenic Areas and Trails Klickitat County Parks
Columbia River Gorge National Scenic Area Klickitat County Park
Lewis and Clark National Historic Trail Hood River County Parks
Oregon Trail National Historic Trail Tucker Park
Washington State Parks Panorama Point County Park
Columbia Hills State Park Tollbridge County Park
Doug's Beach State Park City of White Salmon
Oregon State Parks/Campgrounds/Trails Jewett Creek Park
Lindsey Creek State Park White Salmon City Park
Starvation Creek State Park City of Hood River
Viento State Park Eliot Park
Wygant State Park Waucoma Park
Seneca Fouts State Park Golf Courses
Koberg Beach State Park Husum Hills Golf Course
Memaloose State Park Indian Creek Golf Course
Mayer State Park Hood River Golf and Country Club
Lang Forest State Park Carson Hot Springs Golf Course and Resort
Wyeth Campground Skamania Lodge Golf Course
Historic Columbia River Highway State Trail - Twin
Tunnels Segment (Mosier Twin Tunnels)
The Dalles Country Club
USFS Parks/Trails/Boat Launches Northwest Aluminum Golf Club
BZ Corners Boat Launch Museums and Sightseeing
Balfour-Klickitat Park Hood River County Museum
Dog Mountain Trail Western Antique Aeroplane & Automobile Museum
Herman Creek Trail International Museum of Carousel Art
Washington State Department of Natural Resources Gorge Heritage Museum
Buck Creek Trail Columbia River Gorge Interpretive Center
Skamania County Parks/Campgrounds/Launches Bonneville Lock and Dam Visitor Complex
Home Valley Campground Columbia Gorge Discovery Center
Underwood Park/Underwood Community Center Wasco County Historical Museum
Big Cedars County Park Fort Dalles Museum
Wind River Boat Ramp Sternwheeler Cruises
Drano Lake Boat Launch
Skamania County Fairgrounds
Rock Creek Community Center

3.8.2 APPLICABLE LAND USE REGULATIONS
Skamania County has two independent sets of land use regulations. The first is a stand-alone

zoning code (SCC Title 22) that regulates uses and development within the General Management Area (GMA) and Special Management Area (SMA) of the Columbia River Gorge National Scenic Area). The Scenic Area Code is based on the Management Plan for the Scenic Area, which is overseen by the USFS and Columbia River Gorge Commission, as directed by the National Scenic Area Act.

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The remainder of unincorporated Skamania County, as well as those portions of the Scenic Area classified as Urban Areas (such as White Salmon, Bingen, and Hood River), is governed by the Skamania County Comprehensive Plan, zoning regulations in SCC Title 21, and Titles 20, Shorelines, and 21A, Critical Areas.

Because the project site is located outside of the National Scenic Area, land use at the site is regulated by the Skamania County Comprehensive Plan and SCC Titles 21, 20, and 21A. In addition, although the project site is immediately adjacent to the National Scenic Area, the National Scenic Area Act expressly provides that land use regulations developed for the National Scenic Area do not apply to adjacent area. Section 544O(a)(10) of the Act states:

Nothing in Sections 544 to 544p of this title shall establish protective perimeters or buffer zones around the scenic area or each special management area. The fact that activities or uses inconsistent with the management directives for the scenic area or special management areas can be seen or heard from these areas shall not, of itself, preclude such activities or uses up to the boundaries of the scenic area or special management areas.

16 USC §544O(a)(10). The remainder of this section therefore focuses on describing potentially applicable provisions of the Skamania County Comprehensive Plan and SCC Titles 21, 20, and 21A. For additional information of the provisions of the National Scenic Area Act, see Section 4.11 of this EIS.

3.8.2.1 Skamania County Comprehensive Land Use Plan

On July 10, 2007, Skamania County adopted its current Comprehensive Plan, which includes three Subarea Plans. The project site is not located in one of these subareas. There are three land use designations outside of the specific subarea plans: Rural I, Rural II, and Conservancy (see Figure 3.8-4). The project site is designated as Conservancy. The Comprehensive Plan identifies zoning that is consistent with the Conservancy designation, including: Residential 10 (R-10), Rural Estates 20 (RES-20), Resource Protection (FOR/AG 10 and 20), Commercial Resource Land 40 (CRL 40), Natural (NAT), and Unmapped Classification (UNM).

The alternative location of the Operations and Maintenance facility is in the Rural II designation of the Comprehensive Plan. Most residential zoning classifications are consistent with the Rural II designation, as are the FOR/AG 10 and 20, NAT, and UNM zoning classifications.

The overall Comprehensive Plan vision statement is:

Skamania County is strongly committed to protecting our rural character and natural resource based industries while allowing for planned future development that is balanced with the protection of critical resources and ecologically sensitive areas, while preserving the community's high quality of life.

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Skamania County

Klickitat County
Klickitat County Site
Boundary Rural 1

Rural 2

Conservancy
West End Subarea
Swift Subarea

Revised Figure Adopted by the Skamania Board of County

Carson Subarea

Commissioners on April 29, 2008.

NSA Subarea
DISCLAIMER: This map product was prepared by Skamania County and is for information purposes only. It may not have been
prepared for, or be suitable for legal, engineering or surveying purposes. Users of this information should review or consult the City Limits

primary data and information sources to ascertain the uasbility of the information.

Forest Resource

Figure 3.8-4

Skamania and Klickitat Counties
Source: Skamania County. Comprehensive Plan Designations

Natural resources-based industry is further encouraged in the Comprehensive Plan's description of the intent of the Conservancy designation:

The Conservancy land use area is intended to provide for the conservation and management of existing natural resources in order to achieve a sustained yield of these resources, and to conserve wildlife resources and habitats. Much of the Conservancy land use area is characterized by rugged terrain, steep in slope, and unsuitable for development of any kind. Logging, timber management, agricultural and mineral extraction are main use activities that take place in this area. Recreational activities of an informal nature such as fishing, hunting, and hiking occur in this area, although formal recreational developments may occur from time to time. Conservancy areas are intended to conserve and manage existing natural resources in order to maintain a sustained resource yield and/or utilization.

Among the uses identified as appropriate in the Conservancy designation are: public facilities, utilities, utility substations, forest management (including temporary logging and mining camps), and surface mining (by conditional use).

The Rural II designation is described in the Comprehensive Plan as follows:

"The Rural II land use area is intended to provide for rural living without significant encroachment upon lands used for agriculture and timber. This land use area is the middle developmental range level suggested by this plan. The lower density will help to protect agricultural and timber lands from dense residential type development, and should maintain the rural character of this designation."

Among the non-residential uses identified in the Comprehensive Plan as appropriate in the Rural II designation are public facilities, utilities, utility substations, telecommunication facilities, hospitals, meeting halls, agriculture, forest management including temporary logging and mining camps, and surface mining.

The following identifies potentially applicable goals and policies in the Comprehensive Plan.

Goal LU.1: To integrate long-range considerations (comprehensive planning) into the determinations of short-term action (individual development applications).

Policy LU.1.2: The plan is created on the premise that the land use areas designated are each best suited for the uses proposed therein. However, it is not the intention of this plan to foreclose on future opportunities that may be made possible by technical innovations, new ideas and changing attitudes. Therefore, other uses that are similar to the uses listed here should be allowable uses, review uses or conditional uses, only if the use is specifically listed in the official controls of Skamania County for that particular land use designation.

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Goal LU.2: To provide for orderly future physical development of Skamania County.

Policy LU.2.4: Encourage new commercial enterprises to locate within or near existing commercial areas to avoid further scattering and to better serve the public.

Goal LU.3: To coordinate public and private interests in land development.

Policy LU.3.3: Encourage industry that would have minimal adverse environmental or aesthetic effects.

Goal LU.4: To promote interagency cooperation and effective planning and scheduling of improvements and activities so as to avoid conflicts, duplication and waste.

Policy LU.4.3: Land use patterns, which minimize the cost of providing adequate levels of public services and infrastructure, should be encouraged.

Goal LU.5: To promote improvements which make our communities more livable, healthy, safe and efficient.

Policy LU.5.5: Promote compatibility of industry with the surrounding area or community by fostering good quality site planning, landscaping, architectural design, and a high level of environmental standards.

Policy LU.5.6: Encourage commercial development that is convenient, safe and pleasant to the general public by: requiring that new establishments provide off-street parking adequate for its needs. Encourage pooled or joint use parking areas for adjacent developments may be utilized; Regulate access points for vehicular traffic for commercial areas to prevent unsafe conditions; the design of commercial sites, buildings, and signs should be compatible with surrounding areas; and, landscaping may be required as a buffer when commercial use adjoins residential or farm property.

Goal E.1: To ensure the proper management of the natural environment to protect critical areas and conserve land, air, water, and energy resources.

Goal T.1: Transportation – Encourage an efficient multi-modal transportation network that is based on regional priorities and coordinated with county and city comprehensive plans.

Goal T.2: Continue the priority of increasing safety of the Skamania County rural 2-lane road system. The majority of the Public Works Department's future efforts will be to reduce the accident rate with Skamania County.

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Goal T.3: Public Facilities and Services – Ensure that those public facilities and services necessary to support development should be adequate to serve the development at the time the development is available for occupancy and use without decreasing current service levels below locally established minimum standards.

Goal AHP.1: Identify and encourage the preservation of lands, sites, and structures that have historical or archaeological significance.

Goal AHP.2: Increase recognition of historic, archaeological, and cultural resources.

Goal AHP.3: Protect historic, archaeological and cultural resources through a comprehensive planning approach.

3.8.2.2 Skamania County Zoning Ordinance SCC Title 21

Title 21 of the Skamania County Zoning Ordinance is the county zoning that applies to the project site. Although extensive updates of SCC Title 21 have been proposed for adoption, the last-adopted version is still in effect because the proposed updates are currently under appeal by local interest groups.

Under SCC Title 21, the project site is located primarily in the UNM zone, with the southern tip of the project site in the FOR/AG 20 zone (see Figure 3.8-5). Both of these zoning classifications are consistent with the Comprehensive Plan's Conservancy designation for this area. None of the project site is designated as farmland.

Approximately 7,152 acres of the 1,152-acre project site are located in the UNM zone. UNM zones are those areas of the county where no formal adoption of any zoning map has taken place. The Skamania County Code provides:

In the UNM zone all uses which have not been declared a nuisance by statute, resolution, ordinance or court of jurisdiction are allowable. The standards, provisions, and conditions of this title [SCC Title 21] shall not apply to unmapped areas.

SCC 21.64.020. Nuisances established by the Board of County Commissioners by resolution and ordinance are identified in SCC 8.30.010; this provision of the County Code does not identify wind energy facilities as a nuisance. In addition, neither the RCW nor the WAC designate wind energy facilities as a nuisance.

In July 2007, the County adopted a moratorium on unincorporated UNM-zoned lands outside the Swift Subarea. The moratorium does not prohibit all development in UNM lands. Rather, it restricts three types of land uses: (1) issuance of building permits on lands created by deed since January 2006 that are 20 acres or larger; (2) land divisions (short plat and subdivision); and (3) acceptance of SEPA checklists in support of converting land to non-forestry uses.

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Figure 3.8-5
Job No. 33758687 Skamania County Zoning

The remainder (approximately 400 acres) of the project site is located within the FOR/AG 20 zoning classification (see Figure 3.8-5). Pursuant to SCC 21.56.010[A]), the purpose of this zone is:

To provide land for present and future commercial farm and forest operations in areas that have been and are currently suitable for such operations, and to prevent conflicts between forestry and farm practices and nonresource production uses by not allowing inappropriate development of land within this zone classification.

Uses allowed outright in the FOR/AG 20 zone include the following:

A. Forestry practices and associated management activities of any forest crop in accordance with Washington Forest Practices Act of 1974 including timber, Christmas trees, nursery stock, and surface mining.
B. Commercial and domestic agriculture.
C. Orchards and vineyards.
D. Horticulture.
E. Cottage occupation (in accordance with Chapter 21.70).
F. Light home industry (in accordance with Chapter 21.70).
G. Management of unique biological areas.
H. Management and propagation of fish and wildlife.
I. Water resources management facilities.
J. Storage of explosives, fuels and chemicals.
K. Accessory uses normally associated with an allowable use.
L. Public and private conservation areas or structures for retention of water, soil, open space, forest, or wildlife resources.
M. Log sorting and storage areas, scaling stations, temporary crew quarters, forest industry storage and maintenance facilities.
N. Family day care home (in accordance with Section 21.86.020).
O. Residential care facilities (in accordance with Chapter 21.85).
P. Farm labor housing.
Q. Accessory equipment structures.
R. Attached communication facilities not located on BPA towers (in accordance with Section 21.70.160).

Uses allowed by Conditional Use Permit in the FOR/AG 20 zone include:

A. Individual single-family residences not provided in conjunction with forest or farm management, including residential and resource related development may be permitted conditionally, provided they meet (...additional listed conditions).

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B. Recreational facilities.
C. Semi-public facilities and utilities.
D. Sawmills, shake and shingle mills, chippers, pole and log yards.
E. Geothermal energy facilities.
F. Aircraft landing fields.
G. Cluster developments.

H. Child mini-day care center (in accordance with Section 21.86.030).
I. Child day care center (in accordance with Section 21.86.040.
The alternative Operations and Maintenance facility site is located approximately 0.9 mile west of the project site in the R-5 zoning classification (see Figure 3.8-5). This zoning classification is consistent with the Comprehensive Plan's Rural II designation for this area. Pursuant to SCC 21.36.010, the purpose of the R-5 zone is:

To provide a transition zone of medium to low density residential development which will maintain a rural character of the area in the Rural II Land Use Area of the County Comprehensive Plan A.

Comment: The industrialization of Skamania County and other counties in the region is NOT preserving the rural character of the area! The Futurewise article, Planning for Sustainable Rural Areas, written in March 21, 2005 has a definition for rural character: 'The rural area is the land located outside the urban growth area and outside resource lands. Resource lands are agricultural, forest, and mineral lands of long-time commercial significance.

"Rural character" refers to the patterns of land use and development established by a county in the rural element of its comprehensive plan:

(a) In which open space, the natural landscape, and vegetation predominate over the built environment;

(b) That foster traditional rural lifestyles, rural-based economies, and opportunities to both live and work in rural areas;

(c) That provide visual landscapes that are traditionally found in rural areas and communities;

(d) That are compatible with the use of the land by wildlife and for fish and wildlife habitat;

(e) That reduce the inappropriate conversion of undeveloped land into sprawling, low-density development;

(f) That generally do not require the extension of urban governmental services; and,
(g) That are consistent with the protection of natural surface water flows and ground water and surface water recharge and discharge areas.

"Rural development" refers to development outside the urban growth area and outside agricultural, forest, and mineral resource lands designated pursuant to RCW 36.70A.170. Rural development can consist of a variety of uses and residential densities, including clustered residential development, at levels that are consistent with the preservation of rural character and the requirements of the rural element. Rural development does not refer to agriculture or forestry activities that may be conducted in rural areas.' I don't think that putting up 50+ industrial wind turbines and constructing maintenance roads throughout the

landscape conforms to the definition of rural character " (a) In which open space, the natural landscape, and vegetation predominate over the built environment"!!

Uses allowed outright in the R-5 zone include the following:

A. Single-family dwellings
B. Commercial and Domestic agriculture
C. Forestry
D. Public facilities and utilities
E. Cottage occupation (In accordance with Chapter 21.70)
F. Light home industry (In accordance with Chapter 21.70)
G. Residential care facilities (In accordance with Chapter 21.85)
H. Family day care home (In accordance with Chapter 21.86.020)
I. Safe home
J. Accessory equipment structures
K. Attached communication facilities located on BPA towers. (in accordance with Section 21.70.160)

Uses allowed by Conditional Use Permit in the R-5 zone include:

A. Surface mining
B. Recreational facilities
C. Professional services

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D. Geothermal energy facilities
E. Public displays
F. Cluster developments
G. Semi-public facilities
H. Small and Large-Scale Recreational Vehicle Parks.
I. Child day center (In accordance with Chapter 21.86.040)

3.8.2.3 Skamania County Code, Title 20, Shorelines
Because the project site is not located near or on any shorelines of State, County or other significance, there are no applicable provisions of this county code.

3.8.2.4 Skamania County Code, Title 21A, Critical Areas
The Washington State Growth Management Act, RCW 36.70A.060, requires counties to identify and regulate critical areas.15 Critical areas include:

- Fish and wildlife habitat conservation areas
- Frequently flooded areas
- Geologically hazardous areas
- Ponds and lakes
- Streams, creeks, and rivers

In Skamania County, critical areas regulations are found in SCC Title 21A. The project site is not located within any critical recharge areas, frequently flooded areas, ponds and lakes, or rivers. Portions of the project site are located near geologically hazardous areas due to steep slopes classified as Class II and III LHAs. There are wetlands, fish and wildlife habitat areas, streams, and creeks on the site.

3.8.3 IMPACTS
Adverse impacts to land use can are defined two ways:

• Changes to existing land use activities and development patterns. The project could cause adverse impacts if it were to preclude the continuance of existing land uses or cause major changes to the existing patterns of land use activities or development. 15 See: http://www.commerce.wa.gov/_CTED/documents/ID_892_Publications.pdf

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• Inconsistency of a proposed project with existing land use regulations. The project could cause adverse impacts if it was found to be inconsistent with the Skamania County Comprehensive Plan, Zoning Code, or Critical Areas regulations.

3.8.3.1 Proposed Action
Changes to Existing Land Use Patterns and Recreation

Project Construction

During construction, earth movement and construction-related traffic would generate noise and dust that could temporarily affect nearby homes and businesses located along the site access route (described in Section 3.11, Transportation). Cook-Underwood Road would be the primary access route for construction materials and workers. However, construction impacts would not be sufficient to cause changes to existing land use patterns.

Land clearing for the construction of the alternative Operations and Maintenance facility site would occur concurrently with roadway improvements to West Pit Road. The additional earth movement and construction-related traffic would generate slightly more noise and dust in that area along West Pit Road over anticipated levels for roadway construction without the facility. The additional noise and dust could temporarily affect nearby homes along Willard Road. Construction impacts would not be sufficient to cause changes to existing land use patterns.

Construction would not directly affect local recreational facilities beyond the potential for construction workers to use local recreational facilities during the one year construction period. Existing limits on the length of stay in public camping areas would minimize any potential impacts on park users from construction workers staying in parks, and a majority of the construction workers are expected to be within daily commuting distance of the site. Additionally, workers who did stay at local parks would most likely do so on weekdays and would thus not be there on the days with the highest levels of use.

Construction activities could affect some recreation users such as users of the Underwood Park and Community Center located along Cook-Underwood Road, through temporary increases to traffic, and from construction-related dust and noise. These impacts would be temporary and are expected to be minor.

Construction of the Operations and Maintenance facility at the West Pit Road location would not impact local recreational facilities. Existing limits on the length of stay in public camping areas would minimize any potential impacts on park users from construction workers staying in parks, and a majority of the construction workers are expected to be within daily commuting distance of the site. Additionally, workers who did stay at local parks would most likely do so on weekdays and would thus not be there on the days with the highest levels of use.

Construction of the Operations and Maintenance facility at the West Pit Road could affect some recreation users through temporary increases to traffic, and from construction-related dust and noise. Impacts would be primarily limited to recreational users traveling on Cook-Underwood Road. This impact would not be noticeably different from the construction of the on-site location. Construction impacts would be temporary and are expected to be minor.

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Project Operation

Project operation also would not cause changes to existing land uses or land use activities or development patterns. The surrounding land uses are predominantly commercial forestry, agriculture and residential, and these uses would not be directly negatively affected by the project (Figure 3.8-5). The majority of the project site itself would remain in commercial forest production, with a maximum of approximately 56 acres of land (under 5 percent) converted to non-forestry uses related to new and widened roads, the turbine strings, the Operations and Maintenance facility, and the substation. At decommissioning, all of these facilities would be removed and the area returned to commercial forest.

Project operation would not force any changes in forestry operations or activities on the rest of the project area or on surrounding properties. The project would not generate sufficient amounts of noise, traffic, visual changes, energy use, air emissions or water use to cause changes to these existing land use patterns.

Comment: Since there is no watershed data, the proponent cannot say that the project would or would not cause changes in water use. The proponent does NOT know how this project would affect any aquifer(s), water tables, or wells, in the area.

Concern was expressed during scoping that the visibility of the turbines would cause a negative impact on agricultural tourism, specifically visits to area wineries. Wind power and winery tourism already co-exist in the Columbia River area. For example, four wind power facilities are located between Walla Walla and Kennewick (Canyon, Stateline, Vansycle, and Combine Hills). This area is home to a thriving wine industry with over 60 wineries. Section 3.9 Visual

Resources discusses visual impacts.

Project operation would not result in a sufficient increase in population or traffic to impact local recreational facilities. The only potential impact to recreation users would be the minor to moderate visual impacts discussed in Section 3.9 Visual Resources.

Operation of the alternative Operations and Maintenance facility would not change existing land use patterns. The surrounding land uses are predominantly commercial forestry, agriculture and residential, with the nearest home approximately 0.25 mile away. The site is adjacent to West Pit Road, which will be used for access to the project site during both construction and operation. Use of the alternative site for the Operations and Maintenance facility would generate noise, traffic, new lighting, energy use, air emissions, and water use, but not at levels sufficient to cause changes to the existing surrounding land uses. The Operations and Maintenance facility thus would be compatible with surrounding land use and would not hinder the development of permitted land uses on neighboring properties.

Project Decommissioning

In compliance with WAC 463-72, Site Restoration and Preservation, the Applicant will provide EFSEC with an initial site restoration plan at least ninety days prior to the beginning of site preparation. The plan will address site restoration that would occur at the conclusion of the project's operating life (estimated to be 30 years), and restoration in the event the project is suspended or terminated during construction or before it has completed its useful operating life. The plan will include or parallel a decommissioning plan for the project.

The initial site restoration plan will be prepared in sufficient detail to identify, evaluate, and resolve all major environmental and public health and safety issues presently anticipated,

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including potential changes to land use, recreation or recreational access. If impacts to land use or recreation are anticipated to occur as a result of site restoration and project decommissioning, mitigation measures will be proposed as part of the plan.

Consistency with Applicable Land Use Regulations

Overall, the proposed project would be consistent with applicable land use regulations. The project would not involve subdividing any land parcels nor applying for changes to zoning or Comprehensive Plan designations. In a letter to EFSEC dated May 4, 2009, Skamania County found that the proposed project is consistent with the Skamania County Comprehensive Plan, SCC Title 21 Zoning Code, SCC 21A Critical Areas, Title 24 Clearing and Grading, and resource maps. On December 22, 2009, the Skamania County Board of County Commissioners passed Resolution 2009-54, resolving that the revised project, including the use of the alternative location of the Operations and Maintenance facility and the use of the West Pit Road as an access route, is consistent with Skamania County Land Use Plans and applicable zoning ordinances (see Appendix D Land Use Consistency Determination). When a county certifies

consistency with its local land use plans and ordinances, pursuant to WAC 463-26-090, the plan states that "such certificates will be regarded as prima facie proof of consistency and compliance with such land use plans and zoning ordinances absent contrary demonstration by anyone present at the hearing."

The following further evaluates the consistency of the proposed project with applicable land use regulations.

Skamania County Comprehensive Land Use Plan

The project would be consistent with the Comprehensive Plan vision and the Conservancy designation in that it would conserve and manage existing natural forest and wind resources to maintain a sustained yield and utilization of both. Within the Conservancy designation, public facilities, utilities, and utility substations are allowed. Wind energy facilities are consistent with the Conservancy designation because they are utilities. The project would provide an alternative source of electrical energy generation that is not reliant on either fossil fuels or hydropower, while allowing forest management activities to continue around the turbine corridors. In addition, the staff report attached to Skamania County Resolution 2009-54 documents the County's determination that the proposed project would be a semi-public facility under SCC Title 21 (see Appendix D). Semi-public facilities are defined in SCC 21.08.010 as "facilities intended for public use which may be owned and operated by a private entity." The project thus would be a utility consistent with the Conservancy designation's appropriate uses.

The alternative location for the Operations and Maintenance facility on West Pit Road would include an approximately 3,000-square-foot building, located on a 5-acre parcel in an area designated as Rural II in the Comprehensive Plan. The facility would be similar in size to a larger single family home. The project would be a utility that is consistent with the Rural II designation and would not conflict with any of the goals or policies expressed in the Comprehensive Plan.

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Skamania County Zoning Ordinances

The portion of the proposed project that would be located in the UNM zoning classification would be considered consistent with this zoning. There is no conflict from siting wind energy facilities in the UNM zone, and these facilities have not been identified as a nuisance by statute, resolution, ordinance, or court order. Concerning the County's moratorium on unincorporated UNM-zoned lands, the project is not sited on lands created by deed since January 2006 and does not involve any land division. Because of Washington EFSEC's preemptive role in permitting wind energy facilities, including acting as Lead Agency for associated SEPA review, the County's moratorium on acceptance of SEPA checklists for forest practices conversions does not affect the project.

Turbine Corridor A1–A7, with approximately seven turbines, would be located in the small portion at the southern tip of the project site that is within the FOR/AG 20 zone. If the proposed

project were being permitted through Skamania County rather than through Washington EFSEC, it is probable that a Conditional Use Permit from the County would be required for siting these turbines. Since Washington EFSEC is the permitting authority in this case, no such permit is required. Nonetheless, this portion of the proposed project would be consistent with the purpose and intent of the FOR/AG 20 zone in which it would be located, and while not an outright allowed use, this project is considered to be semi-public facility that would be a conditional use in this zone. As discussed above, the project also would provide renewable energy generation while allowing forest management activities to continue around the turbine corridors. The portion of the proposed project that would be located in the FOR/AG 20 zone thus would be considered consistent with this zoning.

The proposed alternative Operations and Maintenance facility located along West Pit Road would be within an area zoned R-5. Like turbine Corridor A1–A7, if the County was the permitting authority for the alternative Operations and Maintenance facility, a Conditional Use Permit likely would be required. However, Washington EFSEC is the permitting authority and no such permit is required. Nonetheless, the alternative Operations and Maintenance facility would be consistent with the purpose and intent of the zone in which it would be located. The Operations and Maintenance building would be located on a 5-acre site, and, at 3,000 square feet, would be similar in size to a larger single-family residence. The building would meet all applicable setback requirements, and would not pose a hazard to the health, safety or welfare of the surrounding community. Traffic associated with the facility would be similar to traffic from staff currently involved in ongoing timber management in the area. A well and on-site septic system would be installed to provide potable water for the Operations and Maintenance building. The anticipated demand for fire and police services would be low, and similar to other commercial operations in the project vicinity. Development of the facility would not hinder or discourage development or continuation of timber management activities on nearby properties, or of residential properties in the area. Finally, the facility would not conflict with the goals and policies expressed in the current version of the County's Comprehensive Plan. Accordingly, location of the alternative Operations and Maintenance facility in the R-5 zone would be considered consistent with this zoning.

The proposed project also would be consistent with the critical areas regulations found in SCC Title 21A. The project site is not located within any critical recharge areas, frequently flooded

areas, ponds and lakes, or rivers. Portions of the project site are located near geologically hazardous areas due to steep slopes classified as Class II and III LHAs. There are wetlands, fish and wildlife habitat areas, streams, and creeks on the site. The project has been designed to minimize impacts to these areas, as discussed in Section 3.8.4, Mitigation Measures, and primarily in Section 3.3 Water and 3.4 Biological Resources.

Improvements to West Pit Road to widen it in places also would be consistent with SCC Title 21A. The use of the West Pit Road would not create safety concerns. While no new construction would occur within wetlands, streams, or their buffers, West Pit Road crosses one unnamed drainage in the Lapham Creek watershed. In July 2009, the drainage had observed

flow through the existing culvert under West Pit Road, but the surface flow and the channel disappeared downstream of the culvert. The drainage is classified as a Class V stream under SCC 21A.04.020(B),Appendix C. Buffers are established for Class V streams, within which expansion of existing uses is allowed. As long as the proposed expansion or widening is 100 percent or less than the existing footprint, no development review is required under SCC 21A.05 and SCC 21A.06 in fish and wildlife protection areas or geologically hazardous areas. The road improvements in these regulated fish and wildlife protection areas do not exceed the allowed expansion threshold. For a full discussion of fish, wildlife, their habitats, and project impacts to these, please see Section 3.4 of the Application for Site Certification.

Columbia River Gorge National Scenic Area Management Plan

While the proposed project would be located entirely outside of the Columbia River Gorge National Scenic Area, concerns have been raised regarding the compatibility of the project with the objectives and policies of the National Scenic Area Management Plan. The following identifies key objectives and policies, along with a discussion of project consistency with each of these objectives and policies.

• Protection of Resources. The project would not decrease any resources within the Scenic Area. Neither the site nor its access roads are within the Scenic Area, and no recreation resources would be lost.
• Scenic Appreciation and Scenic Travel Corridors. The project would have only minor to moderate impacts on visual quality as viewed from travel corridors inside the Scenic Area. See Section 3.9 Visual Resources.
• Resource Based Recreation. No resource-based recreation resources are within or in proximity to the project area. The only potential impact to recreation in the Scenic Area would be incidental recreational use by construction workers during the construction period. Such use is expected to be minimal.
• River Access and Protection of Treaty Rights. This project is on private lands outside of the Scenic Area and would have no effect on river access or treaty rights.
• Interpretation/Education. An opportunity to provide alternative energy interpretation and education could be included in this project and further the goals of the Scenic Area.

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• Trails and Pathways. The project would not affect any trails or pathways in the Scenic Area. There may be some distant views of wind turbines from trails; the impact is expected to be "low to moderate." See Section 3.9 Visual Resources.
• Transportation. Portions of SR 14 and portions of Cook-Underwood Road that are within the Scenic Area would be used to access the project. Increased traffic would cause a temporary and limited impact to recreational travelers during the construction period.
• Coordination. The project and access road are located outside of the Scenic Area. No coordination is required.

3.8.3.2 No Action Alternative

Under the No Action Alternative, the project would not be built. The site would continue to be used for commercial forestry and timber harvest would continue on a regular rotating schedule. Accordingly, existing land uses at the project site would remain unchanged. In addition, the informal recreation activities at the project site would remain largely the same, and no effect on recreational uses in surrounding areas would occur. The current level of consistency with land use plans and regulations also would continue to exist under this alternative.

3.8.4 MITIGATION MEASURES

No substantial impacts to land use are identified and no mitigation measures are required. The only potential impact to recreation users from operation would be the minor to moderate impact to visual resources from some viewpoints. Mitigation for this potential impact is identified in Section 3.9, Visual Resources.

3.8.5 UNAVOIDABLE ADVERSE IMPACTS

The 1,152-acre project site would continue to be predominantly used for commercial forestry operations. A maximum of approximately 56 acres of forestry land (under 5 percent of the project site) would be converted to energy facility use for the life of the project. This conversion would not constitute a substantial change to area land use patterns given the area of the project retained for active forestry operations, and given the acreage surrounding the project in both private and state ownership that will be maintained in commercial forestry operations.

3.9 VISUAL RESOURCES

This section describes potential impacts to visual resources. It assesses the potential for visual impacts using accepted methods of evaluating visual landscape quality and predicts the type and degree of effects the project would likely have on those attributes. This section also identifies mitigation measures designed to minimize those impacts.

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3.9.1 METHODOLOGY

This section summarizes the visual impact assessment performed for the Application for Site Certification Agreement. The visual assessment used the Scenery Management System defined in Landscape Aesthetics, A Handbook for Scenery Management (USFS 1995) and Visual Impact Assessment for Highway Projects (FHWA 1988). The study was also designed to respond to the provisions of WAC 463-42-362, Built Environment–Land and Shoreline Use, which specifies the analysis of aesthetic and light and glare issues as part of the EFSEC process.

Comment: These 400-foot turbine towers break up the horizon, are visible to the eye, and don't belong in the visual landscape of the Columbia River Gorge National Scenic Area. Klickitat County has pillaged their entire prairie landscape with turbines and maintenance roads and these turbines are intrusive to one's enjoyment of the rural environment. The view shed would be ruined by these monstrous entities.

The Federal Highway Administration (FHWA) methodology is widely used for visual assessment of private lands such as the Project area, where visual quality objectives have not been established. A visual quality objective is a resource management objective established by a district manager or contained in a plan that reflects the desired level of visual quality based on the physical characteristics and social concern for the area. Five categories of visual quality objectives commonly used are preservation, retention, partial retention, modification, and maximum modification.

The FHWA methodology has been used to evaluate other recent wind power projects, including the Desert Claim project16, Lower Snake River (FHWA and BLM) and the Kittitas Valley project (FHWA and USFS methodologies)17. The FHWA method is also used where linear features of the project such as roads or turbine strings move into differing landscapes and visual corridors with differing view groups.

Three methodologies are commonly used to analyze visual impacts in federal and state EISs: the FHWA and USFS methodologies used for this project, and the Visual Resource Management system used by the BLM18. The BLM methodology is generally used where projects are proposed on or in proximity to BLM lands, and visual resource objectives for specific planning areas are already established. Under the BLM methodology a contrast rating can be completed and compared to the established BLM visual classifications. In order to use the BLM process for projects on private lands where no visual resource objectives have been established, it would be necessary to complete a full visual management inventory to delineate all lands in question and then classify each delineated area using the BLM classifications. The FHWA process provides for establishing existing visual quality objectives at a smaller scale or project level.

The BLM analysis would then determine whether and how the project features meet the objectives of the classification using the Visual Resource Management process for contrast rating. The FHWA process also follows this process, but is more conducive to a project of this scale and complexity. Full-scale Visual Resource Management delineation and classification are more appropriate for land management planning on a large scale and for providing visual objectives for public lands with multiple management objectives and uses.

16 See: http://www.efsec.wa.gov/Desert%20Claim/FEIS/3.10Aesthetics.pdf

17 See: http://www.efsec.wa.gov/Desert%20Claim/FEIS/3.10Aesthetics.pdf

18 See: http://www.blm.gov/nstc/VRM/

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While the FHWA process does not rely on pre-existing visual quality objectives, it does incorporate elements of the Scenery Management System, which is part of both the USFS and BLM methodologies establishing existing visual quality and process for determining visual contrast. The FHWA process incorporates Scenery Management System and Visual Resource Management components, including landscape features, ecological conditions, cultural settings,

and social needs to establish the existing visual conditions and the effects of a project on the visual environment.

The methodology used is appropriate since it provides a clear understanding of how the proposed project would affect the visual landscape as seen from the key viewing areas. This methodology portrays the differing viewer groups and their sensitivity to visual change, defines distance zones (foreground, middle ground and unseen areas) and evaluates the contrast between pre- and post-project conditions as seen from the different viewpoints, by different viewer groups, and from different distances.

This analysis of visual effects was based on field observations and review of wind energy facilities' visual effects, public perception, design measures to reduce visual impacts, and local planning documents. Project maps, drawings, technical data, and computer-generated viewshed maps were used to determine areas where the project would be visible, and visual simulations were generated (described in Section 3.9.1.3) to illustrate the change from the existing conditions if the project is implemented. The analysis included systematic documentation of the visual setting, evaluation of visual changes associated with the project, and measures designed to mitigate these visual effects. Mitigation measures include restoration or enhancement activities in areas that would be disturbed during construction.

3.9.1.1 Scenic Quality Assessment

Scenic quality ratings were developed based on observations in the field, photographs of the affected area, methods for assessing visual quality, and research on public perceptions of the environment and scenic quality ratings of landscape scenes. The final assessment of scenic quality was made based on professional judgment that took a broad spectrum of factors into consideration, including:

• Natural features, including topography, watercourses, rock outcrops, and vegetation
• The positive and negative effects of human alterations and built structures on visual quality
• Visual composition, including an assessment of the vividness, intactness, and unity of patterns in the landscape, defined as:
-Vividness refers to the memorability of the visual impression received by the viewer from contrasting landscape elements as they combine to form a striking and distinctive visual pattern

-Intactness is the integrity of visual order in the natural and human landscape, and the extent to which the landscape is free from visual encroachment

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-Unity is the degree to which the visual resources of the landscape join together to form a coherent and harmonious visual pattern

Each viewpoint was assigned a final rating based on the rating scale shown in Table 3.9-1. This

rating scale incorporates the landscape assessment concepts developed in the USFS and FWHA methodologies.

Table 3.9-1
Landscape Scenic Quality Scale

Visual Quality Rating Explanation
Outstanding 6

A rating reserved for landscapes with exceptionally high visual quality. These landscapes are significant nationally or regionally. They usually contain exceptional natural or cultural features that contribute to this rating. They are what we think of as "picture postcard" landscapes. People are attracted to these landscapes to view them. High Landscapes that have high quality scenic value. This may be due to cultural or natural features 5 contained in the landscape or to the arrangement of spaces contained in the landscape that causes the landscape to be visually interesting or a particularly comfortable place for people. These landscapes have high levels of vividness, unity, and intactness.

Moderately High 4

Landscapes that have above average scenic value but are not of high scenic value. The scenic value of these landscapes may be due to human or natural features contained within the landscape, to the arrangement of spaces in the landscape, or to the two-dimensional attributes of the landscape. Levels of vividness, unity, and intactness are moderate to high. Moderate Landscapes that are common or typical landscapes with average scenic value. They usually lack 3 significant human or natural features. Their scenic value primarily results from the arrangement of spaces contained in the landscape and the two-dimensional visual attributes of the landscape. Levels of vividness, unity, and intactness are average.

Moderately Low 2

Landscapes that have below average scenic value but not low scenic value. They may contain visually discordant human alterations, but these features do not dominate the landscape. They often lack spaces that people perceive as inviting and provide little interest in terms of two-dimensional visual attributes of the landscape.

Low 1

Landscapes that have below average scenic value. They may contain visually discordant human alterations, and often provide little interest in terms of two-dimensional visual attributes of the landscape. Levels of vividness, unity, and intactness are below average.

Source: Buhyoff et al. (1994), FHWA (1988), and USFS (1995)

3.9.1.2 Visual Sensitivity Assessment
The analysis also assessed visual sensitivity, which involves predicting the general impact on the

quality of views from a given viewpoint. A combination of three factors determines how sensitive a landscape scene is:

- The number and type of viewers
- The viewing conditions
- The quality of the view

Residential areas with unobstructed views of a regionally important and memorable scene would be very sensitive to objects or structures that would impede views. A view from a seldom

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traveled rural road where motorists have only distant, oblique views of wind turbines in an unremarkable setting would likely qualify as an area of low sensitivity.

The principal types of viewers in the project area who have predictably high levels of sensitivity to visual impacts include:

- Resident viewers
- Roadway viewers (drivers and passengers)
- Recreating viewers such as hikers, water recreationists, and mountain bikers

This analysis defines three levels of visual sensitivity:

- Low. Viewer types representing low visual sensitivity include agricultural and industrial/warehouse workers. Compared with other viewer types, the number of viewers is generally considered small and the duration of view is short. Low levels of sensitivity are assigned to areas 5 miles or more from the closest turbine, where a wind power project would be a distant and a relatively minor element in the overall landscape.
- Moderate. Viewer types representing moderate visual sensitivity consist of highway and local travelers. The number of viewers varies depending on location; however, on average they tend to be moderately large, based on overall densities of surrounding areas and highway commuters. Viewer awareness and sensitivity are also considered moderate because destination travelers often have a focused orientation. Moderate levels of sensitivity were assigned to areas where turbines would be visible from 0.5 mile to 5 miles within the primary view of residences and roadways. The primary view refers to the central area that the eye can see clearly without moving and is surrounded by the peripheral vision. In distinguishing between moderate and low levels of sensitivity in the 0.5-mile to 5-mile zone, contextual factors were also considered, including the viewing conditions in the immediate foreground of the view.
- High. Residential, recreational, and viewers congregating in public gathering places (churches, schools, trails, designated scenic viewpoints, etc.) are considered to have comparatively high visual sensitivity. The visual setting may in part contribute to the enjoyment of the experience. Views may be of long duration and high frequency. High levels of sensitivity are generally assigned in those cases where turbines would be potentially visible within 0.5 mile or less from residential properties, heavily traveled roadways, or heavily used recreational facilities. The principal types of viewers in the project area who have predictably high levels of sensitivity to visual impacts include residential viewers, roadway viewers (drivers and passengers) and recreating viewers such as hikers, water recreationists, and mountain bikers. These criteria were

used to establish the sensitivity levels of each view using a systematic approach based on the distance of the project from the viewpoint, the number of turbines or percentage of the project area that could be viewed from this viewpoint, and the dominant viewer

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types for each view. Through this analysis, an overall sensitivity rating was established for each existing landscape view.

3.9.1.3 Preparation of Visual Simulations

Visual simulations were developed using photographs taken with a 35 mm digital SLR camera. Various focal lengths from 40 to 70 mm were used with the intent to capture the maximum pixels and resolution for the simulation. Visual Nature Studio, a widely-used three-dimensional Geographic Information System (GIS) software, manufactured by 3D Nature, LLC, was used to model the turbine locations on terrain built from USGS digital elevation model data. The photo locations were camera-matched in the software to render the turbines from the same viewpoint as the photographs taken on the ground. The resulting rendered turbine images were then photocomposited into the photographs to create the simulations. Existing topographic and site data provided the basis for developing the initial digital model.

In preparing the visual simulations, the turbine model used was the 2.5-MW Clipper Liberty model C93, which was considered a likely model to be selected based on information provided by the Applicant. This model has an overall height to nacelle of 80 m (262 feet) and blade diameter of 93 m (305 feet), and a blade length of 45.2 m (153 feet). The overall height to the tip of a stationary, vertical blade is 126.5 m (415 feet). The actual turbine size has not been determined, but potential turbines are estimated to have a height to nacelle of 262 feet and blade length between 129 and 164 feet.

Simulations were prepared assuming a conservative scenario of 50 turbines. This approach to creating simulations most likely overstates the visual impacts. This is because the Applicant has applied for EFSEC certification for a maximum of 75 MW. If 2.5 MW turbines were to be used, only 30 turbines could be built, and overall visual impact would be less. If lower-power turbines were used, the turbines would be smaller and thus less visible. Further, in evaluating impacts, the turbine is considered visible if any part of a vertical turbine blade is visible. In practice, turbines with only a part of the blade visible will not be seen when the blade is moving or is stationary but not vertical.

Atmospheric haze varies by location, season, time of day, and weather patterns. In creating photo composite visual simulations, the aim is to match the haze level on the rendered turbines to the observable haze present in the photograph. This is done by comparing the haze effects on the photographed terrain near the turbines to the rendered haze effects on the rendered terrain. This is then translated into a worst-case (lower than expected) haze visibility setting for the turbine renders. The result is that the turbines would be slightly more visible in the final composites than they would actually be if an observer were standing on the ground viewing them from the exact place, date, and time that the photos were taken.

The sky depicted in some of the visual simulations includes clouds, simulating the cloudy conditions that are common at the site.

Site plans and specifications for the proposed wind turbines were used to create three-dimensional digital models of the planned turbine placements. These models were combined with the digital terrain model to produce a complete computer model of the wind farm. For each

viewpoint, a render camera was placed in the Visual Nature Studio software. The aspect ratio of each render was then matched to the corresponding photograph and the rendered terrain was visually matched to the photographed terrain to confirm scale. Finally the resulting turbine images were matched in perspective, scale, and aspect ratio, are photo-composited into the original digital photo base using Adobe Photoshop. This process produces accurate portrayals of how the given turbine models and placements would look on the given terrain and from the specified viewpoints after construction. Seasonal conditions including weather, air quality, vegetation (foreground and background) and color impact the quality of the compositions. These compositions are a representative example of the area without subjectivity.

Simulations were not developed for nighttime conditions. Night simulations are inherently inaccurate, since they do not show the periodic flashing of the air warning lights, which is the impact most often mentioned. Night simulations are not typically performed as part of the analysis of wind power projects, and have not been requested by EFSEC. The potential impact of air warning lights is discussed in Section 3.9.3.1.

3.9.2 AFFECTED ENVIRONMENT

Each landscape has a specific quality that gives a geographic area its visual and cultural image, and consists of the combination of physical, biological, and cultural attributes that make each landscape identifiable or unique. The character of an existing landscape may range from a predominantly natural landscape to landscapes that are heavily culturally influenced. The existing scenic quality of an existing landscape includes the natural scenic attributes of the landscape in combination with the existing land use patterns. The list of attributes includes naturally evolving, natural appearing, pastoral, agricultural, or even urban landscapes and generally are at the broadscape or landscape level of the analysis, but can be analyzed for each specific viewpoint at a project level.

The sensitivity of a landscape or view of that landscape is based on the scenic integrity of the landscape and the types of viewers. A landscape that has a high degree of integrity is a landscape that has a sense of wholeness, intactness, or being complete. Its scenic quality is near-perfect, with no evident discordant elements or deviations from the existing character, making it highly sensitive to most changes and to the perceptions of the viewer types.

The existing visual resources are the natural and built features open to view in the project landscape. The combination of land, water, and vegetation patterns represent the natural

landscape features that define an area's visual character, while built features such as buildings, roads, and other structures reflect human or cultural modifications to the landscape. These natural and built landscape features or visual resources contribute to the public's experience and appreciation of the environment. This section describes the broad scale regional and local landscape settings that were used to establish appropriate viewpoints from which the project would be visible.

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3.9.2.1 Regional Landscape Setting

The project is set in two distinct landscapes. One landscape is the areas were the turbines would be sited along ridges located on the northern plateau of the Columbia River Gorge on Underwood Mountain (Figure 1-1). The other landscape is the Columbia River Gorge National Scenic Area, which is outside the project but within the viewshed looking into the project area. The project area is completely outside the Scenic Area, and therefore is not subject to the Columbia River Gorge Scenic Area Management Plan or related regulatory requirements. No improvements to project area roadways will take place in the Scenic Area.

Comment: Although the proposed project is located outside the Columbia River Gorge National Scenic Area (CRGNSA), the haul routes do impact the NSA. And, we really don't know what the tons and tons of materiel—cement trucks, semi-trucks carrying all the wind farm infrastructure materials, etc.—would do to our roads. There will be impacts to the roads but SDS appears to be minimizing any impacts in the NSA because they know that the regulatory requirements for the NSA are more stringent than outside NSA requirements. The DEIS should address the impacts to all the roads that will be used—and these roads need to be named beforehand. There should be no sleight of hand in road usage. SDS and BPA should commit on paper which haul routes they will be using, what the impacts will be to the roads, and what mitigations will take place if the roads are damaged.

The Scenic Area extends 85 miles along the Columbia River, and includes portions of three Oregon and three Washington counties. Formed by ancient volcanoes and sculpted by floods, the Columbia River Gorge carves a corridor through the Cascade Mountains in Oregon and Washington as the river journeys to the Pacific Ocean.

The National Scenic Area Act designated 292,500 acres on both sides of the Columbia River for special protection from the outskirts of Portland-Vancouver in the west to the semi-arid regions of Wasco and Klickitat counties in the east. The Scenic Area is categorized as SMAs, GMAs, and Urban Areas:

- SMAs contain the most sensitive resources. They total 114,600 acres and are managed by USFS.
- GMAs total 149,400 acres and include a mixture of historic land uses such as farming, logging, and cattle grazing. The Columbia River itself is currently designated as a GMA as well. Development on GMA lands is administered by the Gorge Counties and the Gorge Commission.

• Thirteen Urban Areas in the Gorge are exempt from any Scenic Area regulations: Cascade Locks, Hood River, Mosier, and The Dalles in Oregon, and North Bonneville, Stevenson, Carson, Home Valley, White Salmon, Bingen, Lyle, Dallesport, and Wishram in Washington. The Act's second purpose is to protect and support the economy of the Gorge by encouraging growth in existing Urban Areas and by allowing future economic development in a manner that is consistent with protection and enhancement of resources. The project area is outside of the Scenic Area Management Plan and no visual quality objectives or management designations have been established for the area. Areas south of the project within the Scenic Area are designated as Urban or GMA. The views from the Gorge into the project area were examined through viewpoint selection. This area of the Gorge, closest to the project, is considered to have a high visual quality with a moderate sensitivity based on the vividly memorable, and although the area is not free of visual encroachment, the visual resources join together with a moderate degree of unity.

3.9.2.2 Local Landscape Setting

The project site is on land managed for commercial forestry by S.D.S. Co., LLC and Broughton Lumber Company. All of the parcels on which the project is located are managed for a continual

cycle of growth, harvest, and replanting. As a longstanding commercial forestry site, no old-growth forests exist in areas where the project is proposed. Many of the stands of trees on the sections of land that would have turbines on them are recently harvested and reforested. S.D.S. Co., LLC and Broughton Lumber Company implemented timber harvest plans on approximately 50 acres during 2003. Additional harvests covering approximately 100 acres are planned as part of the ongoing commercial forestry operations (Figure 2-3).

In areas surrounding the proposed wind turbines that have not been recently harvested or that are not planned to be harvested before project construction, trees would be harvested and most of the land would be replanted with seedlings. This clearing would allow for safe construction, and would reduce the potential for tree growth to interfere with the wind resource on the site during the commercial life of the project. Low vegetation would be maintained in some areas to provide safe areas around the turbines (Figure 2-4).

Comment: It is now accepted (OSU and other universities, scientific studies, etc.) that old growth trees sequester more CO2 than younger trees. The age when young trees begin to become part of the sequestration cycle of CO2 is fifteen years. So, the harvesting of the older trees and the replanting with seedlings would actually put MORE CO2 into the atmosphere. This must be computed into the total carbon footprint of this project; it must also be considered when calculating BPA's carbon footprint.

No visual quality objectives have been established in the project area beyond the harvest size and configuration requirements of the Washington Forest Practices Act. These cleared areas are considered a "forest conversion" under the Forest Practices Act and have no established visual quality objectives. These openings, to the extent feasible, would be reforested in accordance

with typical commercial forestry management practices.

S.D.S. Co., LLC and Broughton Lumber Company own this commercial property in Skamania County, Washington. The project and the West Pit Road used for project access are not located inside the Scenic Area. In relationship to the visual quality of the area, there are views from the Scenic Area into the project area. The viewpoints and viewer types in relation to the roadway improvements within the Scenic Area have been considered in this analysis for consistency with the Scenic Area guidance and conformance. SR 14 in this area is a recognized scenic roadway. Typically, this designation means that a scenic corridor management plan would be prepared to provide policy-level guidance in the local adoption of comprehensive plan policies, zoning, and other land use regulation. There is no scenic corridor management plan for SR 14 and, therefore, no regulatory control of aesthetic impacts within the corridor. However, the scenic roadway designation carries an additional level of care and scrutiny in the review of potential aesthetic impacts based on recognition, but not regulation.

The local landscape visual appearance is of moderate visual quality with a moderate level of sensitivity. The levels of vividness (memorability), intactness (freedom from visual encroachment), and unity are average within the broader landscape. The immediate area of the project site is currently characterized by several types of visual disturbance. These include:

• BPA power transmission lines running east-west through the south and center portions of the project area
• Williams gas pipeline running through the north portion of the project area, and compressor station just to the northwest of the project site
• Two rock quarries west of the project area

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• Cell towers south of the project area in the Scenic Area
• Forest openings from clear-cutting throughout and surrounding the project area
• Land clearing for agriculture especially south and east of the project area

3.9.2.3 Viewpoints

To analyze the project's effects on visual resources, viewpoints were selected to characterize the aesthetic character of the project area and the differing landscapes in or near the project. Most of the viewpoints are at publicly accessible locations which would have the largest number of viewers. Within the Columbia River Gorge National Scenic Area, Key Viewing Areas (KVAs) have been established as "those portions of important public roads, parks, or other vantage points with the scenic area from which the public views scenic area landscapes." (SCC 22.04.010). Viewpoints included KVAs from which the project could be seen, other viewpoints within the Scenic Area, and viewpoints outside the Scenic Area.

Figure 3.9-1 illustrates (with colored shading) how many of the turbines would be visible. No

turbines are visible from several of the KVAs. For example, SR 14 is a KVA; however, the section of SR 14 nearest the project area has steep hills to the north, which block views of the project area. KVAs with no turbines visible were not selected as viewpoints for visual simulations and were not further analyzed.

Individual viewpoints were chosen based on the following criteria:

• Viewpoints that are most representative of the different roads, population areas, and recreation areas where views of the wind turbines would occur
• Locations that are most accessible to the public
• Locations with the largest number of viewers (including residences)

Figure 3.9-1 shows the locations of these viewpoints and the number of turbines visible from each viewpoint. Views were not modeled from every residence from which the project would be visible; however, residences and representative businesses between one and three miles from the project site are shown on Figure 3.9-2.

Each viewpoint was assessed for its scenic quality and viewer sensitivity, and a rating was applied to provide an overall average for the area. This process established the existing conditions for each of the individual viewpoints, from which impact of the project on these parameters could be measured.

During scoping, a request was received that a visual simulation be prepared to depict views from Dog Mountain, a popular local hiking area and a Scenic Area KVA. To address this request, photo were taken from potential viewpoints located on the northeast and south side of the mountain. The photographs were used to assess views of the proposed project, and to identify potential impacts to visual resources from those locations. It was determined that views of the

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project area were blocked by Cook Hill at all potential viewpoints located both on and off the trail. The project would be visible from Cook Hill; however, there is no known recreational use in this area. Because the project area is not visible from Dog Mountain, scenic quality and viewer sensitivity were not rated, and no visual simulation was prepared to further assess potential impacts to visual resources.

This section describes the existing views from representative viewpoints. The viewpoint numbering below matches the numbering used in the Application for Site Certification. Additional viewpoints, which were excluded from this EIS as duplicative, can be found in the Application for Site Certification (Appendix A). Simulated photos depicting the existing view with proposed turbines are included in Section 3.9.3.

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33758687_169.cdr

Figure 3.9-1

Job No. 33758687 Locations of Simulation Viewpoints

33758687_121.cdr

Figure 3.9-2

Residences with Visible Turbines

Viewpoint 1: Pucker Huddle (Within Scenic Area)

Scenic Quality. Viewpoint 1 is taken from SR 141, which is approximately 4 miles from the project and is a small connector providing access to the Indian Heaven Wilderness in the Gifford Pinchot National Forest. This highway also allows access to several rural communities, including White Salmon, Husum, and Pucker Huddle. Most areas are unincorporated and several of the residences are recreational in nature with some year-round residences. As discussed in the review of the regional and local landscapes, no public roads pass through or are immediately adjacent to the project.

Viewpoint 1 is a wide panoramic view of Underwood Mountain from SR 141 adjacent to the Pucker Huddle area. The view encompasses the east side of the project area and the ridged lines of forest management areas are visible in the middle ground of the viewshed. Natural openings are prevalent from this viewpoint, with several natural appearing features of openings and vegetation that provide an interesting view. The BPA transmission lines bisecting the project area on the north and south ends can be seen from this viewpoint. The quality of the views from this viewpoint along SR 141 was rated as moderate, reflecting the fact that the visible landscape is relatively common in the region and has average scenic value. The ridge line along Underwood Mountain, which is in the area of the project, provides a degree of topographic interest when viewed with the other natural appearing features. The landscape visual scenic quality from this viewpoint is moderate.

Viewer Sensitivity. Traffic volumes along SR 141 are minimal and used for local traffic and recreational traffic in the summer months. Considering the distance of the project from this viewpoint (less than 5 miles), the minimal use of the highway, and the portion of the project that is visible from the viewpoint, the level of view sensitivity is considered low. This is based on the duration of the view from SR 141, the low level of residential viewers from this viewpoint, and the scenic quality rating.

Viewpoint 3: Husum

Scenic Quality. This viewpoint captures the view from SR 141 northeast of the project area. This viewpoint would be the first view of the project from travelers moving south into the project area. The viewpoint encompasses the northern portion of the project from the highway, which is the closest viewing area from that vantage point. The foreground of the viewpoint is pastoral with a middle ground view of the hillsides and a background view of Underwood Mountain and the project area. The view is natural appearing with moderate to high levels of vividness, unity, and intactness in the foreground, middle ground, and background of the photo. The quality of

the view from this viewpoint was rated moderately high because of the above-average quality and the unity of the man-made and natural features on the landscape.

Viewer Sensitivity. When considering the distance of the project from this viewpoint (greater than 5 miles), the duration of the view (roadway travelers), the portion of the project that is visible from the viewpoint, the viewer types (minimal residential/recreational), and the scenic quality rating, the level of visual sensitivity is considered moderate.

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Viewpoint 4: Ausplund Road and Cook-Underwood Road (Scenic Area KVA)

Scenic Quality. This viewpoint captures the view from the Ausplund Road and Cook-Underwood Road where they meet and provide residential, agricultural, and forest management access to the area. These roads are connector and feeder roads that can be accessed from SR 14. This area is elevated from the Columbia River Gorge National Scenic Area but is within its boundaries. The area has a mix of uses including agriculture, forest management, and some recreation. The foreground from the roadway is an agricultural setting with middle and background views of forest vegetation and forest management areas. The view is natural appearing with moderate levels of vividness, unity, and intactness. The quality of the view from this viewpoint was rated moderate because of the average or typical views of this type in the project area.

Viewer Sensitivity. When considering the distance of the project from this viewpoint (0.5 to 5 miles), the viewer types (roadway travelers), the portion of the project that is visible from the viewpoint, the viewer types (residential/roadway), and the scenic quality rating, the level of visual sensitivity is considered moderate.

Viewpoint 5: Willard

Scenic Quality. This viewpoint captures the view from the small residential community of Willard. This area is accessible by a County road from SR 14 and used by residential and private forest management users. The view looks southeast into the project area and provides a panorama of the longest string of turbines. The foreground is a mixture of mixed conifer second growth stands and the middle ground is of mixed timber harvest openings and a transmission corridor. The background view is similar and the mixture of vertical and horizon lines and formations detracts from the overall vividness and unity of the view. The intactness of the views is moderated by the changes in line and form. The quality of the view from this viewpoint was rated moderately low to moderate.

Viewer Sensitivity. When considering the distance of the project from this viewpoint (0.5 to 5 miles), the duration of the view (foreground screening), the portion of the project that is visible from the viewpoint, the viewer types (minimal residential), and the scenic quality rating, the level of sensitivity is considered moderate.

Viewpoint 7: Mill A

Scenic Quality. This viewpoint captures the view from the old mill property west of the project area. This area is accessible from Willard Road and has a mixture of uses. The view looks northeast into the southern end of the A turbine string. The foreground view is obstructed by the vertical lines of transmission towers. The middle ground view is of transmission corridors and extensive timber harvest openings. Many of the residential views are partially screened from the valley floor. There is a visual discord with the man-made alterations. The vividness, unity, and intactness appear uninviting and of moderate to low visual quality. The scenic quality rating for this viewpoint is moderately low.

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Viewer Sensitivity. When considering the distance of the project from this viewpoint (0.5 to 5 miles), the duration of the view (foreground screening), the portion of the project that is visible from the viewpoint, the viewer types (minimal residential), and the scenic quality rating, the level of sensitivity is considered moderate.

Viewpoint 11: I-84 Westbound (Scenic Area KVA)

Scenic Quality. This viewpoint captures the view from I-84 traveling westbound towards the project area from the east. I-84 travels along the Columbia River Gorge National Scenic Area and views along this portion of the highway are generally directed towards the river and the distant scenery. Beyond the foreground view of the highway and other corresponding structures the view is generally intact with average or above vividness, unity, and intactness. Viewers traveling along this corridor have multiple line-of-sight transitions, and this is considered to be average within those views. The scenic quality rating for this viewpoint was rated moderate.

Viewer Sensitivity. When considering the distance of the project from this viewpoint (8–10 miles), the portion of the project that is visible from the viewpoint, the viewer types (roadway), and the scenic quality rating, the level of sensitivity was rated moderate.

Viewpoint 12: Koberg Park (Within Scenic Area)

Scenic Quality. This viewpoint captures the view across the Columbia River from Koberg Park. The foreground view of the river is a complete composition indicative of the area and the middle and backgrounds have a high level of vividness, unity, and intactness. The railway line that bisects the view in the middle ground tends to blend into the scenery without distraction. This view is considered to be above average for the types of views that are throughout the Scenic Area. The scenic quality rating for this viewpoint was rated moderately high.

Viewer Sensitivity. When considering the distance of the project from this viewpoint (8–10 miles), the portion of the project that is visible from the viewpoint, the viewer types (recreational), and the scenic quality rating, the level of sensitivity was rated moderate.

Viewpoint 13: I-84 Eastbound (Scenic Area KVA)

Scenic Quality. This viewpoint captures the view from I-84 traveling eastbound towards the project area from the west. I-84 travels along the Scenic Area and views along this portion of the highway are generally directed towards the river and the distant scenery. Beyond the foreground view of transmission structures the view is generally intact with average or above-average vividness, unity, and intactness. Viewers traveling along this corridor have multiple line of sight transitions and this view is considered to be above average within the context of those multiple views. The scenic quality rating for this viewpoint was rated moderately high.

Viewer Sensitivity. When considering the distance of the project from this viewpoint (3 to 5 miles), the portion of the project that is visible from the viewpoint, the viewer types (roadway travelers with fleeting views), and the scenic quality rating, the level of sensitivity was rated as moderately low.

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Viewpoint 14: Viento State Park (Within Scenic Area)

Scenic Quality. This viewpoint captures the view from Viento State Park, a popular recreation and rest area along the Columbia River. Landscape features are diverse and intact and the contrasts of the features have a high level of unity. This view is the open waters of the Columbia River in the foreground with rock features and vegetation in the middle ground and a background of mountains that provides an overall pleasing composition that is inviting to the viewer. This view is one of the less common views along the Gorge and has an above average scenic value. The scenic quality rating for this viewpoint was rated moderately high to high.

Viewer Sensitivity. When considering the distance of the project from this viewpoint (greater than 5 miles), the portion of the project that is visible from the viewpoint, the viewer types (recreational), and the scenic quality rating, the level of sensitivity was rated as moderate to high.

Viewpoint 15: Frankton Road (Within Scenic Area)

Scenic Quality. This viewpoint represents the view from the higher-elevation residential areas west of Hood River. The view looks across the Columbia River into the project area. Frankton Road is a local access road and traffic is considered low. Residences in this area have views both north and south. Many of the views are screened to the north and take advantage of the view south into Oregon. The view has residential development in the foreground, which is common along this roadway. The middle ground is vegetation, some agriculture, and some forest management. The background is the ridge along the project area. These types of views are relatively common and of average scenic value when compared to the broader area. Vividness, unity, and intactness are moderate to high levels. The scenic quality rating for these viewpoints is moderate.

Viewer Sensitivity. When considering the distance of the project from this viewpoint (greater than 5 miles), the portion of the project that is visible from the viewpoint, the viewer types (residential), and the scenic quality rating, the level of sensitivity was rated as moderate.

Viewpoint 17: Providence Hospital Hood River (Within Scenic Area)

Scenic Quality. This viewpoint represents the north view of the project from the City of Hood River. The foreground is an urban setting with a middle ground of vegetation that screens the background to some degree, providing a diverse composition of features. The view has a somewhat vivid appeal based mostly on the man-made features; however, the unity and intactness are below average and are visually discordant. This detracts from the background view. Viewers would generally be more focused on the business of the urban environment. The scenic quality of these viewpoints was rated moderately low.

Viewer Sensitivity. When considering the distance of the project from this viewpoint (more than 5 miles), the portion of the project that is visible from the viewpoint, the viewer types (urban/residential), and the scenic quality rating, the level of sensitivity was rated as low.

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Viewpoint 19: Columbia River Highway (Within Scenic Area)

Scenic Quality. This viewpoint represents the view of the roadway traveler on the Columbia River Highway (Highway 30) southeast of the project area. This view has a higher scenic quality and is more representative of the high-quality views within the Columbia Gorge area. The foreground, middle ground, and background all have an above average arrangement of spaces in the landscape. The view appears intact and has a unity with the road and even the transmission line that is visible in the middle ground. The landscape provides diversity but not to the extent of clutter. This view is rated moderately high for scenic quality.

Viewer Sensitivity. When considering the distance of the project from this viewpoint (greater than 5 miles), the portion of the project that is visible from the viewpoint, the viewer types (roadway travelers/sightseers), and the scenic quality rating, the level of sensitivity was rated as moderate.

Viewpoint 23: Ausplund Road End (Within Scenic Area)

Scenic Quality. This viewpoint represents the view from local area roadways at specific intersections where local area travelers might converge. These roads are old logging roads that have been upgraded to meet the local residential use. However, they are still used for logging and would be used in the construction portion of this project. This would include upgrading and in some instances widening the roads, which can affect visual quality. This view is from the end of the Ausplund Road, which would be used to access the area for construction and maintenance. Very few viewers beyond those associated with the project would see this viewshed. Without the vehicles in the foreground, the scenic quality rating assigned to this view is moderate.

Viewer Sensitivity. When considering the distance of the project from this viewpoint (less then 1 mile), the portion of the project that is visible from the viewpoint, the viewer types (local area workers and residence), and the scenic quality rating, the level of sensitivity was rated as low to moderate.

3.9.3 IMPACTS

Visual impacts are a primary consideration for wind power projects. The alteration of the landscape by the introduction of wind turbines, and the visual impacts of wind turbines on the landscape is a complex issue, and factors other than the attributes described above play a major role in the observer's reaction or perception of the visual impacts or change.

Wind turbines are relatively large, and being available to the wind requires the turbines to be in a location that is open and highly visible. Viewers' reaction to the visual impacts of wind turbines on the landscape is a complex issue, and is influenced by the generally positive perception of wind as a renewable energy alternative. However, many supporters of renewable energy projects express a desire that the projects be placed elsewhere. This message was voiced by several people in the public scoping meetings for this Draft EIS. Studies have shown that some negative opinions change once the wind projects are constructed and in operation.

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3.9.3.1 Proposed Action

The appearance of the project is determined by the project facilities that may be seen by the public during operation of the project. Project facilities include turbines, a meteorological tower, the BPA substation, the Operations and Maintenance facility (at one of two alternative locations) and roads. The substation, Operations and Maintenance facility, and project area roads would be difficult to see from outside of the project area, and would be typical of development in this rural area dominated by forest management and large-scale agriculture. The meterological tower is slender and would have no moving parts, and would not be as noticeable as a wind turbine. Consequently, the visual impact assessment focused on the potential impact of the turbines. This section describes project facilities and their visibility from outside the project area.

Comment: Speaking of moving parts—these turbines are machines. Machines make noise. How much noise does each turbine make?

The project facilities are:

• Turbines. The turbines would be the most visible project facilities. Commercial-scale turbines are similar in appearance and are composed of a tower, a nacelle, and turbine blades attached to a rotor. The tower would appear to be a steel pole, tapered from base to hub, with a base diameter of approximately 14 feet. At the top of and perpendicular to the tower, the nacelle would appear to be an elongated metal boxlike structure. Three aerodynamically shaped blades connected to a nose cone attach to the front of the nacelle. Depending on the turbine model chosen, each turbine would be up to approximately 426 feet tall (262-foot hub height and 164-foot radius blades, measured from the ground to the turbine blade tip), and would be mounted on a concrete foundation. Wind turbines would be grouped in "strings," with each turbine spaced approximately 350 to 800 feet from the next (or approximately 1.5 to 2.5 times the diameter of the turbine rotor). Typically, wind turbines are painted white to comply with FAA daytime

lighting requirements. A gravel buffer and crane pad will be maintained at each turbine site, and will not be visible from outside the project area. The tall turbines will introduce vertical lines into the viewshed. Blades will be visible when stationary and moving at low speeds, but will not be visible when moving more quickly. The visibility of the turbines would be affected by the angle of the sun and climate conditions. At low sun angles (morning and evening) sunlight will reflect off a greater surface of the turbine and result in greater visibility. Conversely, when the sun is directly overhead, a relatively small surface of the turbine will reflect. On cloudy days, visibility of the light-colored turbines will be less since the turbines will blend with the background. Available data indicates that on average, there are 145 sunny days per year in Skamania County, Washington, that is, 39.7 percent of days are sunny.19 Therefore, the majority of the time some clouds are present. The turbines will therefore blend with the background the majority of the year.

Comment: This statement "turbines will therefore blend with the background" is an opinion and is not factual. Those of us who live in the NSA and surrounding areas certainly would notice, as I can state from personal experience, 400 foot spinning turbines in the landscape! These suckers are BIG and they do impinge on one's visual area of interest.

• Electrical System. The electrical system would primarily be underground, and would connect the turbines to the BPA substation. The substation would occupy a portion of a

19 http://www.bestplaces.net/County/Skamania-Washington.aspx#.

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fenced 5-acre area at the southwest end of the project site, immediately adjacent to the

BPA 230-kV transmission line. A 50-foot cleared area would be maintained around

substation. The substation would difficult to see from outside the project site.

• Operations and Maintenance Facility. The Operations and Maintenance facility would be a 3,000 square foot metal building approximately 16 feet tall, with a gravel parking lot and surrounding fence and gated entrance. The facility would be built at one of two alternative locations, either on the project site or to the west of the site on West Pit Road. In either location the visual impact of the facility would be minimal, and similar to small utility or agricultural facilities in the area.

• Roads. The project will require 7.9 miles of new permanent gravel roads, and 2.4 miles of improved existing roads. New permanent and improved roads will be visually similar to existing secondary and gravel roads in the project area and most would be difficult to see from outside of the project area.

• Meteorological Tower. The project would include one meteorological tower, approximately 221 to 262 feet tall. The tower height would be the same as the hub height for the selected wind turbine. Because meteorological towers are slender and do not have large components like turbine blades, the meteorological tower would be difficult to see from outside the project area.

The primary visual concern is the potential impacts of the proposed installation of up to 50 wind turbines on existing views and the overall aesthetic character of the project area. The specific turbine type and manufacturer have not been selected; however, it is likely that the turbines would be in the 1.2- to 2.5-MW range, and would measure approximately 426 feet in height (262-foot hub height and 164-foot radius blades). Each turbine would have three rotor blades made of laminated fiberglass. The diameter of the circle swept by each blade would be from 264 to 320 feet, depending on which turbine was selected. Turbine "strings" would include rows of from three to 21 turbines placed at approximately 350 to 500 foot intervals.

For many viewers, the location of the project would minimize visual impacts. Location effects include the limiting effect of topography, tree cover, the relatively long distance to surrounding residences, and the orientation of the project vis-à-vis viewers. Figure 3.9-2 shows the number of turbines visible from residences and a selection of local businesses. The figure does not attempt to show all businesses in the project area; the businesses added are for general reference. The figure shows that the project will not be visible from many of the residences to the southeast of the project, and will be most visible to residences to the west, in and around Mill A. This figure may overstate the visibility of the project somewhat, for two reasons:

• Turbines are judged to be visible if any part of the turbine blades would be visible. In practice, if only the tip of a blade is visible then viewers will not see it when it is not vertical or when the blade is moving.
• The visual simulation is based on topography alone, and does not take into account the masking effect of trees.
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However, public input and comments during EIS scoping indicated that for some viewers, the presence of the wind turbines represents a negative impact because it alters the appearance of the rural landscape over a large area. The flashing of aviation warning lights on the tops of turbines at night would similarly be considered a negative impact.

The visual impact assessment was based on evaluating the changes to the existing visual resources that would result from construction and operation of the project. These changes were assessed, in part, by evaluating the "after" views provided by the computer-generated visual simulations and comparing them to the existing visual environment. Consideration was given to the following factors in determining the extent and implications of the visual changes:

• Changes in the affected visual environment's composition, character, and valued qualities
• The affected visual environment's context, including distance
• The extent to which the affected environment contains places or features that have been designated in plans and policies for protection or special consideration
• The number of viewers, their activities, and the extent to which these activities relate to the aesthetic qualities affected by the changes
• The distance factor was considered in the sensitivity rating for establishment of baseline and therefore becomes a factor in the impact assessment

Levels of impact were classified as high, moderate, and low:

• High. High levels of impact were assigned when turbines would be highly visible in areas with a high number of sensitive viewers, and would greatly alter levels of vividness, unity, and intactness, decreasing the level of visual quality. This is the largest number of viewers from that key viewpoint. The assessment accounts for the number of viewers and would add that into the discussion.
• Moderate. Moderate levels of impacts were assigned in situations when turbines would be visible in areas with moderate levels of visual sensitivity and viewers, where the presence of the turbines would moderately alter levels of landscape vividness, unity, and intactness.
• Low. Low levels of visual impact were found in situations when the project would have relatively small effects on overall landscape level attributes, where existing levels of landscape aesthetic quality are low, or where there are low levels of visual sensitivity and a low number of viewers.

Construction

During construction, large earth-moving equipment, trucks, cranes, and other heavy equipment would be visible from some nearby areas. At times, small, localized clouds of dust created by road building and other grading activities may be visible at the site. Because of construction

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related grading activities, areas of exposed soil and fresh gravel that contrast with the colors of the surrounding undisturbed landscape would be visible.

In close-up views the changes associated with the construction activities would be highly visible and would have a moderate to high visual impact. Close-up views would include those seen by travelers on the segment of the local roads that pass around the project site and those seen from the closest residences. From more distant locations, the visual effects of construction would be relatively minor and would have little or no impact on the quality of views.

Construction impacts would be short-term, lasting no more than the one-year construction period.

Operation

During project operation, the turbines would be visible from some viewpoints. The potential level of visual impacts from key and representative project viewpoints is summarized in Table 3.9-2 and shown on Figures 3.9-3 through 3.9-15. Additional viewpoints are analyzed in Section 4.2-3 of the Application for Site Certification (Appendix A). A more detailed description for each viewpoint follows the summary table and figures. The visual impact analysis showed that the project has the potential to create low to moderate levels of visual impact at key viewpoints.

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Table 3.9-2

Summary of Existing Scenic Quality Assessment and Project Visual Impacts

Viewpoint	Within or Outside of Scenic Areaa	Distance from Nearest Turbine (miles)	Existing Scenic Quality	Anticipated Level of Visual impact	Visual Quality Viewer Sensitivity
Viewpoint 1: State Highway 141/Pucker Huddle (Figure 3.9-3)	SA	3.99	Low Moderate	Low to Moderate	
Viewpoint 3: Husum, Highway 141 north (Figure 3.9-4)	--	4.76	Moderate to Moderately High	Moderate	Moderate
Viewpoint 4: Ausplund Road, Cook-Underwood Road (Figure 3.9-5)	KVA	1.23	Moderate	Moderate	Moderate
Viewpoint 5: Willard (Figure 3.9-6)	--	1.35	Moderately Low to Moderate	Moderate	Moderate
Viewpoint 7: Mill A (Figure 3.9-7)	--	1.62	Moderately Low	Moderate	Low to Moderate
Viewpoint 11: I-84 Westbound (Figure 3.9-8)	KVA	8.39	Moderate	Moderate	Moderate to Low
Viewpoint 12: Koberg Park (Figure 3.99)	SA	6.60	Moderately High	Moderate	Moderate
Viewpoint 13: I-84 Eastbound (Figure 3.9-10)	KVA	3.43	Moderately High	Moderately Low	Moderate to Low
Viewpoint 14: Viento State Park (Figure 3.9-11)	SA	3.99	Moderately High to High	Moderate to High	Moderate to High

Viewpoint 15: Frankton Road (Figure
3.9-12) SA 4.51 Moderate Moderate Moderate
Viewpoint 17: Providence Hospital
(Figure 3.9-13) SA 5.07 Moderately Low Low Low
Viewpoint 19: Columbia River Highway
(Figure 3.9-14) SA 6.46 Moderately High Moderate Low
Viewpoint 23: Ausplund Road End
(Figure 3.9-15) SA 0.64 Moderate Moderate Moderate

a. -- += not in Scenic Area; SA = within Scenic Area; KVA = Key Viewing Area within Scenic Area

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33758687_126.cdr

Source: GeoDataScape.

Figure 3.9-3

Viewpoint 1 - Pucker Huddle

33758687_127.cdr

Source: GeoDataScape.

Figure 3.9-4

Viewpoint 3 - Husum

33758687_128.cdr

Source: GeoDataScape.

Figure 3.9-5

Viewpoint 4 - Ausplund Road and Cook-Underwood Road

33758687_129.cdr

Source: GeoDataScape.

Figure 3.9-6

Viewpoint 5 - Willard

33758687_130.cdr

Source: GeoDataScape.

Figure 3.9-7

Viewpoint 7 - Mill A

33758687_131.cdr

Source: GeoDataScape.

Figure 3.9-8

Viewpoint 11 - I-84 Westbound

33758687_132.cdr

Source: GeoDataScape. Figure 3.9-9

Viewpoint 12 - Koberg Beach State Park

33758687_133.cdr

Source: GeoDataScape. Figure 3.9-10

Viewpoint 13 - I-84 Eastbound

33758687_134.cdr

Source: GeoDataScape. Figure 3.9-11

Viewpoint 14 - Viento State Park

33758687_135.cdr

Source: GeoDataScape. Figure 3.9-12

Viewpoint 15 - Frankton Road

33758687_136.cdr

Source: GeoDataScape. Figure 3.9-13

Viewpoint 17 - Providence Hospital

33758687_137.cdr

Source: GeoDataScape. Figure 3.9-14

Viewpoint 19 - Columbia River Highway

33758687_138.cdr

Source: GeoDataScape. Figure 3.9-15

Viewpoint 23 - Ausplund Road End

Viewpoint 1: Pucker Huddle (Figure 3.9-3)

From Viewpoint 1, approximately 25 turbines would be visible on the ridge tops at distances of approximately 4 miles to the nearest turbines. At the distance depicted in the photo, the visual clutter of more turbines has more impact than the considerable scale of the larger turbines. The composition would be silhouetted against the sky, increasing their visual impact. However, the distance and the line of sight from the residential areas would minimize the contrast. The presence of the turbines would reduce the scene's degree of intactness by introducing a large number of highly visible engineered vertical elements.

The potential visual impact from Viewpoint 1 would range from low to moderate.

Viewpoint 3: Husum (Figure 3.9-4)

From Viewpoint 3, approximately 27 turbines would be visible on the ridge tips at a distance of approximately 4.75 miles to the nearest turbines. Figure 3.9-4 illustrates the simulated views from SR 141 traveling south into the project area. Travelers moving along this highway are generally using the road to access recreation areas or for leisurely drives. Residential viewers would be screened to some degree from the view based on vegetation, landscaping, and the line of sight from the valley floor. Introduction of these vertical structures in the background of this view would decrease the intactness of the landscape, based on the numbers of turbines that would be visible. The composition of the view would be altered with the introduction of these engineered structures and would be apparent on the horizon to the travelers and residence in the area.

Due to the low levels of viewers, duration of the views, and viewer awareness, the visual impact from Viewpoint 3 is considered moderate.

Viewpoint 4: Ausplund Road and Cook-Underwood Road (Figure 3.9-5)

From Viewpoint 4, approximately 14 turbines would be visible looking northwest from the roadway, at a distance of approximately 1.23 miles to the nearest turbines. Figure 3.9-5 illustrates the simulated view from the roadway at the intersections of Ausplund and Cook-

Underwood Roads. Because of the position of this viewpoint (direct line of sight) and its distance from the turbines, the turbines apparent scale would be visible and apparent. The presence of the turbines would likely have a moderate effect on the vividness of the existing view and a moderate impact on the overall sense of unity and intactness by the roadway and residential viewers.

The potential visual impact from Viewpoint 4 would be moderate.

Viewpoint 5: Willard (Figure 3.9-6)

From Viewpoint 5, approximately 24 turbines in turbine strings A and B would be visible from screened views from residences in the area of Willard. Figure 3.9-6 shows the simulated view from Viewpoint 5 in the northern portion of the project looking southeast. These turbines would be located in the ridge tops, with the nearest turbines approximately 1.35 miles away. Because the turbines would be seen against the sky at medium range and screened in many residential views, they would still be visible in the background. This would reduce the visual unity and

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intactness minimally when compared to the existing components in the landscape. The wind turbines would be arrayed uniformly along the ridgeline and would create a moderate change in the setting's existing low to moderate visual quality.

The potential visual impact from Viewpoint 5 would be moderate.

Viewpoint 7: Mill A (Figure 3.9-7)

From Viewpoint 7, approximately 35 turbines in strings A and B would be visible in the foreground, middle ground, and background of this view. The nearest turbines would be located approximately 1.62 miles away. Figure 3.9-7 shows the simulated view. The turbines would be seen against the sky. The presence of the long line of turbines may create a slight increase in the vividness of this view. The unity of the view would be decreased further by the long turbine line and the intactness of the view would be moderately compromised compared to the existing view.

The potential visual impact from Viewpoint 7 is considered to be low to moderate.

Viewpoint 11: I-84 Westbound (Figure 3.9-8)

From Viewpoint 11, approximately 19 turbines would be visible in the distance background to roadway travelers looking west into the project area from I-84. The nearest turbines would be

8.39 miles away. Figure 3.9-8 shows the simulated view. Although the turbines would be visible to travelers on the far horizon, their presence is not expected to decrease the existing quality of this view, because of their relatively small size at this viewing distance. The visible turbines would have a minimal effect on this view's vividness, unity, and intactness.
The potential visual impact from Viewpoint 11 was rated as moderate to low.

Viewpoint 12: Koberg Park (Figure 3.9-9)

From Viewpoint 12, approximately 17 turbines would be visible in the distant background to recreational users of the park and river. The nearest turbines would be approximately 6.60 miles away. The view looks west into the project area. Figure 3.9-9 shows the simulated view. Although the turbines would be visible to the viewers on the far horizon it is not expected to decrease the existing quality of this view to a great degree, because of their relatively small size at this viewing distance. The visible turbines would have a minimal effect on this view's vividness, unity, and intactness.

The potential visual impact from Viewpoint 12 was considered to be moderate.

Viewpoint 13: I-84 Eastbound (Figure 3.9-10)

From Viewpoint 13, approximately eight turbines would be visible in the background to travelers on the roadway looking west into the project area from I-84. The nearest turbines would be approximately 3.43 miles away. Figure 3.9-10 shows the simulated view. This view for travelers would be of short duration. Although the turbines would be visible to travelers on the horizon it is not expected to decrease the existing quality of this view because of the number of turbines visible and the partial screening from the middle ground ridgeline. The visible turbines would have a minimal effect on this view's vividness, unity, and intactness for these reasons.

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The potential visual impact from Viewpoint 13 was rated as moderate to low.

Viewpoint 14: Viento State Park (Figure 3.9-11)

From Viewpoint 14, approximately 20 turbines in the background would be visible to the recreational users of the area. The nearest turbines would be just under four miles away. Figure 3.9-11 shows the simulated view. Although the water-related recreational activities would have the line of sight more related to the water and river banks, the recreational users moving through this area would be affected by this contrast in the view. The vividness of the scenic quality may be positively or negatively affected, depending on the user perception of turbines in the background. The unity and intactness of the existing view would be moderately compromised and the visible turbines would have a moderate effect on the view's scenic quality compared to existing conditions, due to the distance from the park and activities in the foreground and middle ground.

The potential visual impact for Viewpoint 14 was considered to be moderate.

Viewpoint 15: Frankton Road (Figure 3.9-12)

From Viewpoint 15, approximately 10 turbines can be seen, with the nearest turbines approximately 4.51 miles away. Figure 3.9-12 shows the simulated view. At this distance, the

contrast would have a minor effect on the overall visual impact. Consequently, because the prominence of the turbines in the view would be low, the turbines would have a minor effect on the vividness, unity, and intactness from this viewpoint.

The potential visual impact from this viewpoint would be moderate.

Viewpoint 17: Province Hospital Hood River (Figure 3.9-13)

From Viewpoint 17, only two turbines can be seen, and they are diminished by the distance (just over five miles). Figure 3.9-13 shows the simulated view. At this distance, viewers would have to scan the horizon to find the turbines. Consequently, minor effect or negligible effects to the scenic quality is expected.

The potential visual impact from this viewpoint would be low.

Viewpoint 19: Columbia River Highway (Figure 3.9-14)

From Viewpoint 19, approximately nine turbines are visible in the distant background. The nearest turbines would be approximately 6.46 miles away. Figure 3.9-14 shows the simulated view. Although the turbines would be visible in the background the viewer would have to have a focused orientation to see them in the landscape. The amount of turbines and the limited prominence based on the distance is expected to have a minimal effect on the scenic quality from this viewpoint.

The potential visual impact from this viewpoint would be low.

Viewpoint 23: Ausplund Road End (Figure 3.9-15)

From Viewpoint 23, approximately eight turbines can be seen. The nearest turbine would be approximately 0.64 mile away. Figure 3.9-15 shows the simulated view. This area would be

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within one mile of the project and the turbines would be highly visible at the end of this road. However, very minimal use of these roads beyond workers associated with forest management reduces the viewer types. Regardless, the impacts of the turbines on the landscape would affect the scenic quality of the view.

The potential visual impact from this viewpoint would be moderate.

Viewpoint 24: Dog Mountain

Because the project area cannot be seen from the Dog Mountain trail (either during the day or at night), no simulated view was prepared. There would be no impact.

Night Lighting

The project would be required to comply with the Federal Aviation Administration aircraft safety lighting requirements for structures greater than 200 feet tall, which includes turbines and meteorological towers. The exact number of turbines that would require lighting would be specified by the Federal Aviation Administration after final project plan review; however, current guidance requires that warning lights be mounted on the first and last turbines of each string, and from those end turbines, lights should then be positioned such that the next lit turbine is no more than 1/2 mile, or 2640 feet, from the last lit turbine. The lights would be synchronized to flash together to illuminate the full extent of the wind project area (Patterson 2005). These lights would be visible as small blinking points of red light; they would not light up the sky or the surrounding landscape. Aside from any required aircraft warning lights, the turbines would not be illuminated at night. There will be one meteorological tower located within the project site area. Its location will be selected during the micro-siting process. Depending on its proximity to turbine towers, it may or may not require aircraft safety lighting.

The Draft EIS for the Nine Canyon Wind Project contains a generic illustration of night lights and can be found online at http://www.efsec.wa.gov/wildhorse/deis/figures/40%20Fig%203.109%20and%2010.pdf.

Columbia River Gorge National Scenic Area

During scoping, some commenters expressed concern that project operation would impact the Scenic Area adversely since turbines would be visible from some Key Viewing Areas inside the Scenic Area. Analysis of KVAs and viewpoints within the Scenic Area were sought and analyzed. The presence of the project would cause low to moderate visual impact to viewpoints within the Scenic Area,

Congress has determined that the National Scenic Act is not to be used to regulate activities outside of the Scenic Area boundary. The Act states that "no protective perimeters or buffer zones shall be established around the scenic area or each special management area. Activities or uses inconsistent with the management directives for the scenic area or special management areas can be seen or heard from these areas shall not, of itself, preclude such activities or uses up to the boundaries of the scenic area or special management areas" (16 USC § 544O(a)(10). This federal policy and Congressional mandate discourage projecting National Scenic Act policies, regulations and directives beyond the boundary of the Scenic Area.

Comment: "Discourages" does not mean that people and agencies can't speak up when they don't want turbines littering the rural landscape. The NSA is a national treasure. It is also an economic boon to this area. Tourism contributes millions of dollars to the coffers of the counties located in the NSA. SDS Lumber's wind farm will employ 5 people when all is said and done, and maybe contribute a miniscule amount of money to Skamania County's $50,000,000 yearly budget. The visual scenery that thousands of people come to enjoy, and those of us who live here enjoy it all the time, would be destroyed by horizon-topping wind turbines. This is too high a price to pay. Wind farms don't belong in forests and they don't belong on the boundaries of the NSA.

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Mitigation

Project Decommissioning

In compliance with WAC 463-72, Site Restoration and Preservation, the Applicant will provide EFSEC with an initial site restoration plan at least ninety days prior to the beginning of site preparation. The plan will address site restoration that would occur at the conclusion of the project's operating life (estimated to be 30 years), and restoration in the event the project is suspended or terminated during construction or before it has completed its useful operating life. The plan will include or parallel a decommissioning plan for the project. Visual and aesthetic impact from decommissioning would be similar to those expected during the construction phase.

The initial site restoration plan will be prepared in sufficient detail to identify, evaluate, and resolve all major visual resource issues presently anticipated. If impacts to visual resources are anticipated to occur as a result of site restoration and project decommissioning, mitigation measures will be proposed as part of the plan.

3.9.3.2 No Action Alternative

Under the No Action Alternative, turbines would not be built. Existing visual conditions would continue unchanged, and would be influenced primarily by ongoing timber harvest until and unless a different applicant proposed to develop the wind energy potential of the area. In the event the failure to construct this project results in continuation and expansion of fossil fuel energy generation sources, it is foreseeable that air quality, including haze conditions, would continue to be a negative impact to the air quality and scenic resources of the of the Columbia River Gorge National Scenic Area.

3.9.4 MITIGATION MEASURES

The following mitigation measures are identified to avoid, minimize, and compensate for potential visual resource impacts during construction and operation of the propose project to the extent feasible.

Comment: These are not "potential" visual impacts! These are real impacts and they would be very annoying and intrusive in our rural environment.

• Ensure that a non-reflective flat neutral gray or light color is the choice of color for the turbines so that visual impacts would be minimized. The primary mitigation measure available for visual impacts is the choice of color for the turbines. Although a brown turbine color would reduce visual contrast in views where the turbines are seen against the landscape, it would also accentuate the visibility of the turbines where they would be seen against the sky. In addition, the brown color would have a greater contrast when snow is on the ground. Because the turbines are most frequently seen against the sky, particularly in close-range views where visual concerns are the greatest, a non-reflective

flat neutral gray or light color would be ideal.
• Comply with Federal Aviation Administration requirements for safety lighting. Lights typically used to meet Federal Aviation Administration requirements would to some extent be shielded from ground level view due to a constrained (3–5 degree) vertical beam. The Federal Aviation Administration will independently review the lighting of individual turbines during the micrositing process and consult on mitigation. However, the project must comply with the safety lighting requirement.

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3.9.5 UNAVOIDABLE ADVERSE IMPACTS

The project would cause some visual impact to surrounding areas where turbines were visible, including some areas inside the Columbia River Gorge National Scenic Area. However, the visual impact analysis showed that the anticipated level of visual impact would not be higher than low to moderate at any of the viewpoints examined.

3.9.6 REFERENCES

Buhyoff, G.J., P.A. Miller, J.W. Roach, D. Zhou, and L.G. Fuller. 1994. An AI Methodology for Landscape Visual Assessments. AI Applications 8, no. 1: 1-13.

European Wind Energy Association (EWEA). 2003. Focus On Public Opinion: A Summary of Opinion Surveys on Wind Power. Accessed at:

http://www.ewea.org/fileadmin/ewea_documents/documents/publications/WD/WD22vi_public.pdf.

Federal Highway Administration (FHWA). 1988. Visual Impact Assessment for Highway Projects.

Patterson, James W. 2005. Development of Obstruction Lighting Standards for Wind Turbine Farms. FAA Technical Note DOT/FAA/AR-TN05/50. November.

US Forest Service (USFS). 1995. Landscape Aesthetics, A Handbook for Scenery Management.

3.10 HISTORICAL AND CULTURAL RESOURCES

This section describes existing historical and cultural resources in the project vicinity and identifies potential impacts to these resources from construction and operation of the proposed project. Cultural resources include buildings, sites, structures, and objects, each of which may have historical, architectural, archaeological, cultural, or scientific importance. Artifacts, records, and material remains associated with these properties, and traditional cultural properties, which can include archaeological, traditional procurement, and religious sites and landscapes, are types of cultural resources.

The primary source of information for this section is the Cultural Resources Inventory Report

prepared in support of the Application for Site Certification by URS (2009), as supplemented by fieldwork done by URS in December 2009 (URS 2010). The Cultural Resources Inventory Report was designed to identify, evaluate, and record pre-contact and historic cultural resources in accordance with Chapter 36 CFR §800 of the National Historic Preservation Act (NHPA). The survey objectives include identifying archaeological resources and historic properties that might be considered eligible for the National Register of Historic Places (NRHP) located within the direct area of potential effects (APE) for the proposed project.

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3.10.1 REGULATORY SETTING

3.10.1.1 Laws and Regulations

Several federal and state laws protect cultural resources, including NEPA and SEPA, which require that impacts of federal and state actions on cultural resources be identified and assessed in environmental documents, as well as the NHPA, which establishes a national policy of historical preservation and requires that the effects of Federal actions (such as BPA's interconnection with the project) on significant cultural resources be determined. Collectively, these regulations and guidelines establish a comprehensive program for the identification, evaluation, and treatment of cultural resources.

To be eligible for the NRHP, properties must be 50 years old (unless they have special significance) and have national, state, or local significance in American history, architecture, archaeology, engineering, or culture. They also must possess integrity of location, design, setting, materials, workmanship, feeling, and association, and meet at least one of four criteria:

- Criterion A: be associated with important historical events or trends
- Criterion B: be associated with important people
- Criterion C: have important characteristics of style, type, or have artistic value
- Criterion D: have yielded or have potential to yield important information

If a resource is determined eligible for the NRHP, then Section 106 of the NHPA (80 Stat. 915; 16 USC 470) and its implementing regulations (36 CFR 800) require that effects of the proposed project to that resource be assessed. If a property eligible for the NRHP would be adversely affected by the proposed action, the action agency must evaluate alternatives or modifications to the proposed action that would avoid, minimize or mitigate adverse effects.

3.10.1.2 Area of Potential Effect

The NHPA requires that the APE for the project area be determined. The APE for direct effects to cultural resources is considered to be the footprint for potential ground-disturbing activities that are anticipated to occur during construction and long-term maintenance of the project. For the Project, ground disturbance could take place in the turbine string corridors, road corridors inside the project site, the West Pit Road outside the project area, overhead and underground transmission corridors inside the project site, the Operation and Maintenance facility (two alternative sites), and the substation and lay-down areas. These activities have a total footprint

of approximately 384 acres (Figure 3.10-1) and constitute the APE for direct effects to cultural resources. The indirect APE is the area outside of the project boundary where the project may have, for instance, a visual impact on significant cultural resources. On February 1, 2010, the Washington Department of Archeological and Historic Preservation (DAHP) sent a letter to EFSEC concurring with the definition of the APE. See Appendix E.

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Figure 3.10-1
Job No. 33758687 Area of Potential Effects

3.10.2 AFFECTED ENVIRONMENT
3.10.2.1 Cultural Context
Pre-Contact Background

The archaeological record of the Columbia Plateau documents the prehistory of a region that is distinguished by local adaptations to a unique set of resources and its inland maritime environment (Chatters and Pokotylo 1998). Archaeological research near the site has focused principally within the Columbia River corridor, and models for the Portland Basin of the Northwest Coast culture area (Pettigrew 1981), the Columbia Plateau culture area (e.g., Galm et al. 1981), and the White Salmon and Klickitat rivers specifically (Masten and Galm 1989) can be applied. An overview of archaeological research within the Columbia River Gorge has been summarized by Beckham et al. (1988). Recently, Griffin and Churchill (2001) synthesized the multiple cultural chronologies that have been posited for the region; the following discussion is based on their synthesis.

The Early period dates from 11,000 to 4,500 years BP, though recent studies at Paisley Caves in Oregon suggest an even earlier date of regional occupation at least by about 14,300 BP (Jenkins 2009). A mobile lifestyle focused on intensive riverine resources with periodic use of uplands is inferred. Subsistence shifted from reliance on large game to an increase in the importance of fish, root, and vegetable resources by the end of the period. Permanent structures are not found in association with the earliest sites, but semi-subterranean house settlements appeared along major rivers at the latter stage, reflecting an increase in sedentism. Sites dating to this period have mostly been found around The Dalles at the eastern end of the Columbia River Gorge (Griffin and Churchill 2001).

The Middle period occurred from approximately 4,500 BP to 250 years BP and is characterized by increased occurrences of semi-subterranean houses and the appearance of food storage facilities, indicative of further sedentism and decreased mobility. Concurrently, there was intensification of use of fish, roots, and vegetable resources during the first half of the period, with hunting of secondary importance. The pattern of winter sedentism was apparently established during this period. There are more archaeological sites, including villages, fishing camps, and hunting camps that date to this period and that are found in the area between the Cascade Mountain Range and the town of Lyle, as well as The Dalles area (Griffin and Churchill

2001).

The Late period, dating from 250 to 100 years BP, is defined by the appearance of the horse on the Columbia River Plateau (circa 1730s), which increased the mobility and resource acquisition patterns of local groups. The period is also marked by the introduction of trade goods and the devastating effects of introduced diseases on the local populations, as well as the arrival of Euro-Americans. There is an increase in the quantity and distribution of sites dating to this period, with most being located along the confluences of major rivers and the Columbia River, though several sites are found on sandy terraces as well as within the islands. A large number of historic villages were noted by Lewis and Clark between Beacon Rock and The Dalles during their 1805–1806 travels (Griffin and Churchill 2001).

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Along the lower White Salmon River, Middle and Late period projectile point styles are common. Recorded site types in this area include housepit villages, temporary camps, petroglyph sites, and cemetery sites (Griffin and Churchill 2001).

Ethnographic and Ethnohistoric Background

The proposed project site is located near the boundary between two ethnographic culture areas of the Pacific Northwest, the Northwest Coast, and the Columbia Plateau. Local groups living in the Columbia River Gorge at the time of historic contact are known from the languages they spoke as the Upper Chinookans and the Echeesh-Keens (Sahaptins)20 (Beckham et al. 1988; Griffin and Churchill 2001). In the general area of the project, the Columbia River Gorge was used by the Eastern Chinookan-speaking Wishram, White Salmon, and Cascades people, as well as the Echeesh-Keen-speaking Yakama and Klickitat (Griffin and Churchill 2001).

The Upper Chinookans occupied the Gorge from the vicinity of the mouths of the Sandy and Washougal rivers east to the Deschutes River. Various Echeesh-Keen speaking groups lived to the east, including the Tenino, Klickitat, Yakama, and Umatilla. The Yakama primarily occupied territory north of the Tenino, while the Klickitat occupied inland regions to the northwest, extending to the Columbia River in the vicinity of the Klickitat River, along with Wishram peoples (Beckham et al. 1988, French and French 1998). Of these groups, the project area falls within territory that would have probably been used most intensively by the White Salmon, who comprised several small bands residing primarily in an area extending from about ten miles below The Dalles to the White Salmon River area, especially at the mouth of this river, although they lived away from the river as well (Ruby and Brown 1992).

During the nineteenth century, White Salmon usage most notably overlapped with the Klickitat, the Echeesh-Keen-speaking group primarily occupying the upper drainages of the Klickitat and White Salmon rivers. Several villages were found at the mouth of the White Salmon River, including at least one that was shared with the Klickitat (French and French 1998, Ruby and Brown 1992, Spier and Sapir 1930). White Salmon winter villages were found upriver along the White Salmon near the contemporary communities of Husum and BZ Corner, and along Rattlesnake Creek to the north (Griffin and Churchill 2001). Use of Namnit (45SA22), an

important ethnohistoric period fishing village at the mouth of the White Salmon River, continues into the present.

Less information appears to be available in the historic record regarding traditional use of the Little White Salmon River west of the White Salmon River. Another important village site was situated at the mouth of the Little White Salmon River: Skatxlmmax, or 'eating place,' and sqtdalpt, or 'it keeps tearing out', both refer to the village located at modern-day Cook along the Columbia River (French and French 1998). Salmon came to spawn here, and in winter whitefish could be taken from the spawning pools (Nielsen 1959). A trail from Drano Lake traversed the east side of the river into the upper valley. Two main huckleberry fields, including Big

20 Griffin and Churchill (2001) note that the Yakama Nation prefers the use of "Echeesh-Keen" over the term
"Sahaptin."

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Huckleberry Mountain on the south side of the lava beds and Little Huckleberry Mountain towards the headwaters of the Little White Salmon River, were frequented. Bark was peeled from many cedar trees along this trail for use in basket making. The racetrack near Red Mountain was the location of a big annual social event held in conjunction with the berry picking and drying (Nielsen 1959).

The Upper Chinookan and Echeesh-Keen peoples followed a similar seasonal pattern of subsistence activities, except that the former relied more heavily on fish than the latter (Griffin and Churchill 2001). In winter, limited hunting and fishing took place but subsistence was based on stored foods. With the arrival of the spring Chinook salmon, people would gather roots in the nearby hillsides. After the snow packs melted away, movement into the uplands occurred since fishing sites were usually inundated. Dried roots would then be hauled to the winter villages for storage in semi-subterranean cellars. Important spring gathering areas included Camas and Panakanic prairies, Deadhorse Meadow, and the Snowden area. Following the spring root gathering, people returned to the fishing areas along the major rivers to fish for blueback and Chinook salmon, and women would gather golden currant, gooseberry, dogwood, service berry, and choke cherry from the river and nearby uplands. A type of tobacco was planted and harvested by Chinookans (French and French 1998). In late summer and early fall, huckleberries were picked in the uplands near Mt. Adams, and hunting for deer and elk occurred. Toward late fall, the winter villages would be reoccupied. The White Salmon River was a focal area for tule salmon harvested in the fall that attracted many families to the region (Griffin and Churchill 2001, Norton et al. 1983, Schuster 1998, Winthrop and Meninick 1996). The fishing village at the mouth of the White Salmon River also functioned as a minor trading center (Griffin 2001).

In sum, the ethnographic and ethnohistoric context indicates that the project area is situated along a high-elevation ridgeline about two to three miles from two ethnographic riverine village sites, and within approximately one mile of the Little Salmon River valley, which would have formed a natural travel corridor providing access from the Columbia River to upland regions to the north, such as the popular berry picking grounds in the Mount Adams country. No specific

reference to the promontories that are in or near the project area, now known as Chemawa Hill or Underwood Mountain, were encountered in the reviewed literature, but proximity to known village sites suggests these high places and the adjacent ridgelines composing the project area could have been visited occasionally for non-residential, transient uses such as for spiritual activities, burials, or resource acquisition activities related to hunting, cedar peeling, plant gathering, and berry picking.

Historic Background

The first white pioneers to settle the section of the Columbia River between the Cascades and the confluence of the Snake River were reportedly the Joslyn family, who arrived at the White Salmon flats in 1852 and attempted to purchase their lands from the local Klickitats, in addition to filing a Donation Land Claim (McCoy 1987). Increased settlement by whites led to the creation of reservations throughout the region during the 1850s. Fourteen tribes and bands were signatories to the Yakama Treaty of June 9, 1855, when the Yakama ceded around 11 million acres to the US Government, while retaining rights for hunting, fishing, and gathering at traditional locations, and agreed to the establishment of the 1.3 million-acre Yakima Reservation.

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The White Salmon Reservation was temporarily established at the mouth of the White Salmon River at the Joslyn claim in 1856 for around 800 Native peoples who were not active in the Yakima War of 1855–1856, during which time a coalition of interior tribes led by Kamiakin fought against the US Army and local settlers. At the end of the war two years later, the White Salmon Reservation was closed and residents were removed to the Yakama Reservation. Some avoided relocation and claimed lands their families had traditionally used, including around Northwestern Lake and along the area's minor drainages such as Buck Creek. Although a few took up farming, most continued to practice traditional subsistence activities at traditional places such as the Underwood In Lieu Site (Griffin and Churchill 2001).

The Underwood town site, located about six miles southeast of the project area and along the Columbia River, was among the earliest of the pioneer settlements in this portion of the Columbia River Gorge. Amos Underwood was a contemporary of the Joslyns who arrived in the region in 1852 and married Chief Chenowith's daughter, Ellen. In 1861, Amos and Ellen Underwood built a log house at the site of the present town bearing their name, as well as a dock and pier to accommodate sternwheelers. Amos' brother Edward Underwood also settled here and his house reportedly served as an Indian gathering place, especially in the fall during the salmon runs on the White Salmon River (Thun 1959). The Underwood brothers platted a town site in 1904, in anticipation of growth related to the construction of the Spokane, Portland, & Seattle Railway beginning the following year (McCoy 2003).

The upper drainage of the Little White Salmon River Valley, including the location of the proposed alternate site for the Operations and Maintenance facility along Willard Road, was not homesteaded until the 1880s and 1890s, when the more desirable lower-elevation lands had already been taken (Thun 1959). There were a reported 35 homesteads from Cooks to the present day Oklahoma park at the head of the river (Nielsen 1959). A review of late-nineteenth

century General Land Office maps (BLM 2009a) dated 1876 does not depict any settlement or other features of historic interest in or near the project area.

The history of the White Salmon and Little White Salmon region has a long association with the logging industry. Initially, the Menominee Lumber Company cut the easily-accessible timber into logs that could be floated down the White Salmon River. Oxen and horses were used to drag the timber, which traveled across several constructed rollaway dams before reaching the Columbia River, where they were rafted for towing to the Hood River mill (McCoy 1987). Wind River Lumber Company succeeded Menominee, using their dams along the White Salmon as they removed virgin timber from the Buck Creek, Mill Creek and Underwood Mountain areas (McCoy 1987). It was at this time that the upland forests of the project area were probably first harvested.

As of 1896, there were seven sawmills operating in Skamania County, the most notable of these being the Oregon Lumber Company's along the Little White Salmon River (Price 1896). After the logging of Underwood Mountain was complete, the Oregon Lumber Company established the Mill A sawmill and headquarters along the west side of the Little White Salmon River, and another sawmill at Chenowith Flat on the east side of the Little White Salmon River at what was known as Mill B (less than one mile to the south of the proposed Maintenance Yard Alternative Location at Willard Road) (Attwell 1975, McCoy 1987). There were flumes on both sides of the

river that carried the lumber to the Columbia (Atwell 1975). When the supply of timber became more difficult to access, the company closed the mill in 1907, and moved it to Oregon (McCoy 1987, Nielsen 1959, Thun 1959).

Broughton Lumber Company was established around 1916 by Harold Broughton and D.M. Stevenson, who operated a mill at Willard along the Little White Salmon River. Using water diverted from the Little White Salmon River, Broughton Lumber Company transported the timber via a flume connecting the mill at Willard to the Columbia River, and then rafted the logs across the river to Oregon for railroad transport. The flume originally consisted of a 4.5-mile long segment from Willard to Drano Lake, and was constructed by the Drano Flume Company around 1913. In 1923, Broughton purchased the Drano Flume Company and expanded their operation by building an additional 4.5 miles of flume from Drano Lake eastward along the Columbia River to a new resaw and planing mill located along the railroad near Underwood (McCoy 1987, Thomas 2007). Following its completion, boards could travel the nine -mile long flume to the planning mill in less than an hour.

From 1923 to about 1940, Broughton Lumber Company constructed and operated a railroad for transport of logs to the primary mill. Two steam engines were used and a maximum of nine miles of track that were laid to haul timber from the woods to the mill at Willard, but the tracks had no permanent location, as they were moved and re-laid as necessary. The Broughton Lumber Company operation closed in 1986, and portions of the flume from Willard to the Columbia River were dismantled by the company shortly thereafter (Thomas 2007).

The logging activity that cleared extensive areas on Underwood Mountain in the early-twentieth century opened up these lands for orchard use at the same time. Settlement occurred quickly as a result of the "Apple Boom," the period between 1905 and 1920 when vast orchards were planted along the White Salmon Valley, on Underwood Mountain, and elsewhere throughout the region. In 1908, the completion of the railway across the north shore of the Columbia River contributed to this influx of residents. White Salmon emerged as a main trading center by 1910, and fruit packing plants were established along the railway (McCoy 1987 and 2003).

Land patents were filed relatively late, from 1905 to 1910, for the high elevation ridgelines that characterize most of the project area (BLM 2009b). The correlation of the land patent dates with the regional orchard boom and railroad completion date in the project area is suggestive of prospective claims either for orchards or as investments for lumber resources. It has not been determined how many of the early-twentieth century claimants actually resided on their parcels. A 1929 USGS Hood River topographic quadrangle depicts the presence of one residential structure, an access road, and a trail within the project area.

Orchard growers at Underwood initially attempted to irrigate their crops with water pumped from the White Salmon River, but when the pump house was washed away by a flood, they attempted to take water out of Little Buck Creek using a gravity flume until the flume burned. Irrigation was not restored, and some orchard growers and farmers lost their land by foreclosure due to inability to pay taxes. A hard freeze in 1919 killed many apple trees, and several growers switched to winter pear crops (Thun 1959). Commercial orchards generally failed in the White Salmon Valley due to dry land and lack of organized irrigation, severe winters, and a short

growing season at higher elevations. Many orchards were simply abandoned and reclaimed by second-growth timber (McCoy 1987 and 2003).

Improvements in transportation along the north shore of the Columbia River occurred after the 1919 opening of the North Bank Highway, especially when the five tunnels west of Underwood were completed in 1937. The Hood River to White Salmon Bridge was opened in 1924 (McCoy 2003), further connecting the economies of the two towns.

3.10.2.2 Cultural Resources Overview

Tribal Consultation and Traditional Cultural Resources

Based on the archival review, no specific traditional cultural properties or sacred sites are documented within the project area. Given that this information is culturally sensitive, however, the reviewed records are not likely to contain specific references to traditional or sacred sites that could occur within the project area and tribal consultation is required to address their potential presence (Parker 1993). BPA will conduct the government-to-government tribal consultation for this project as per Section 106 of the NHPA.

To incorporate tribal involvement at an early stage in the process, the Applicant has initiated

contact with the Confederated Tribes and Bands of the Yakama Nation. The Applicant invited the participation of both the Yakama Nation Cultural Resources Department and two local resident tribal members to assist with the identification of potential sensitive, traditional, and/or sacred resources.

Through the Yakama Nation's Cultural Resources Department, the Applicant has requested participation of tribal members for the archaeological field inventory, has sponsored a field trip to the project area, and has attempted to solicit concerns with regard to potential cultural resources of importance to the tribe. The Applicant contacted the Yakama Nation Cultural Resources Department to review their confidential data sources and to report any potential areas of sensitivity, as appropriate, so that these areas can be avoided and protected early in the planning process. A field investigation by Yakama Nation cultural resources specialists occurred in December 2009. The Yakama Nation's findings, currently in preparation, will supplement the information contained in this EIS.

Separate from Yakama Nation Cultural Resources Department, the Applicant has invited the participation of two local residents, also members of the Yakama Nation, who have long-standing ties to the area. Chief Wilbur Slockish of the Klickitat Tribe and Chief Johnny Jackson of the Cascades Tribe met with URS archaeologists prior to the November 2009 field inventory and jointly toured the project site. Both individuals stated that based on their knowledge of this area, the project area was not specifically used by their ancestors or contemporary Indians. Neither individual identified any traditional cultural properties or other sensitive or sacred sites within the project site.

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Previously-Recorded Cultural Resources in the Project Vicinity

The DAHP maintains a state-wide database of previously-recorded cultural resource sites, historic register properties, and completed inventories. The locations of the cultural resource sites (e.g., archaeological sites) are managed as restricted access information. The locations of historic register properties (e.g., buildings and structures listed on the state or national register) are non-restricted information.

The DAHP database does not have any record of previous inventories within the project area. Prior inventory coverage in the general vicinity depicts a few small, scattered inventories in upland areas near Underwood Mountain, mostly related to development review projects in the Columbia River Gorge National Scenic Area. A limited linear inventory for a proposed timber sale occurred adjacent to and north of the APE and did not identify any resources (Stilson 2005). In general, few inventories have been completed in the vicinity; those that have been completed are limited in scope and do not allow for comparisons or predictions to be made about the types of resources that could be found in the project area. Intensive inventory coverage has only occurred along the White Salmon River drainage several miles to the east of the project area, where numerous pre-contact and historic period sites have been identified.

One cultural resource was previously-recorded within the project area, consisting of the

Broughton Lumber Company flume (45GP596). The flume formerly paralleled Willard Road at the western boundary of the alternative location for the Maintenance and Operations facility. The flume was dismantled and removed from this area following the 1986 closure of the mill along the Columbia River. Although sections of the historic flume are still present elsewhere, none remain in the project area. This site therefore reflects a former alignment rather than extant physical remains.

Within a one-mile radius of the project area are two additional sites: a mortar and peeled cedar found about 0.5 mile west of the Maintenance Yard at Willard, and an early-twentieth century debris scatter associated with an old homesite, found about one mile north of the APE within a similar forested, upland setting. No historic register properties (e.g., buildings and structures) are found within the project area or within 1.5 miles of the project area based on the DAHP database.

In general, the density of cultural resources is greatest along the White Salmon River to the east, with scattered resources also found along the north shore of the Columbia River. Most archaeological research in the area has focused on riverine sites found along the Columbia River, and, more recently, along the lower White Salmon River. Fewer non-riverine archaeological sites have been documented in the general area, with several archaeological sites, mostly historic period, found in the Underwood Heights vicinity, several miles from the project area. It is unclear whether the higher site density documented along the White Salmon River is reflective of more intensive survey coverage, more intensive use of this area, or both, as compared to the Little White Salmon River. However, it appears unlikely that the higher elevation project area would have the same density of sites as the riverine areas along the Columbia and White Salmon rivers.

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3.10.2.3 Project Site Inventory

A preliminary cultural resources inventory of the project site was conducted in 2003, based on the project design at that time (Ballentyne 2003). Because the proposed project area was subsequently revised and expanded, a new survey was completed in 2009 (URS 2010). A wider survey corridor of 650 feet for the turbine strings necessarily overlapped the 2003 inventory's 300-foot wide survey corridor. Much of the project area was therefore inventoried on two separate occasions, six years apart. The two survey areas are shown on Figure 3.10-2.

The 2009 URS inventory of the project area consisted of a pedestrian survey of the 384-acre APE where direct impacts to cultural resources could occur. Prior to the field inventory, oral interviews were conducted with the landowner and local tribal informants, and historic maps and historic and modern aerial photos were reviewed to identify potential resources within the project area.

Field Methods

An intensive pedestrian survey of the APE was conducted for this project in November 2009 for

the cumulative 384-acre APE. Transects were spaced no greater than 100 feet (30 meters); most were at 65-foot (20-meter) intervals or less. Survey methods depended on the project component being surveyed and the steepness of the slopes, as well as the presence of any hazards such as burning slash piles. Slopes greater than 30 percent were usually not inventoried. In several areas, survey coverage extended beyond the APE, depending on the topography. Ground visibility at the time of the inventory was variable; areas that had been most recently harvested provided excellent visibility, while forested areas were found to have dense accumulations of duff, slash, and dense vegetation that obscured the ground surface. Soil exposures provided by animal burrows, cut banks, roadways, and root casts were inspected closely.

Promontories associated with the proposed turbine strings were examined for potential rock cairns, rings, walls, or other alignments that could indicate sensitivity. Large old-growth stumps were examined for evidence of scarification, and large boulders were examined for evidence of petroglyphs, pictographs, or processing activities. The inventory was especially vigilant in looking for historic features such as residences, camps, roads, railroad alignments, flumes, or other evidence of historic logging and homesteading activities.

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Figure 3.10-2
Job No. 33758687 Cultural Resources Survey Locations

Limited subsurface probing was conducted for this project at the location of an historic period archaeological resource, referred to as the Haran Farmstead, recorded at the time of the 2009 field inventory. This resource is located within one of the turbine strings, and is characterized by several rock features and a small artifact scatter related to an abandoned early-twentieth century residence and fruit orchard. The subsurface probing investigation employed close-interval systematic, as well as intuitive, sampling methods. Shovel probes were placed at close intervals around each of the recorded rock features to determine whether any associated archaeological deposits could be identified. Wider-spaced, systematic (20 to 30-meter interval) probes were placed within the lower-probability former orchard fields and within expansive areas found between several the rock features, where no surface artifacts were observed, to determine the presence or absence of buried resources.

A total of 52 shovel probes were excavated. The probes measured 30-cm in diameter and were generally excavated at 5 to 30-meter intervals to an average depth of 50 cm. Sediment was passed through alternating screen mesh sizes, both 1/4-inch and 1/8-inch mesh sizes were utilized. All artifacts were replaced within the excavated probe after documentation; none were collected.

Prior to subsurface probing, a metal detector was used to aid in the identification of metal artifacts obscured by the layer of duff that is present across much of the site due to its forested setting. The metal detector was used intensively around each of the recorded rock features. Systematic transects of 10 to 30 meters were walked in lower probability areas such as the

former orchard field. Shovel scrapes, or simple removal of snow and duff to expose the ground surface soil, were utilized as an additional method to improve surface visibility. Shovel scrapes were placed at 30-meter intervals within the former orchard lands, where probability is considered low, in order to provide additional validity to the surface reconnaissance.

Beyond the Haran Farmstead, no additional exploratory probing was conducted elsewhere in the project area. The majority of the potentially higher sensitivity landforms such as the ridgelines and promontories either had excellent ground surface visibility due to recent timber harvesting activities, and/or had exposed basalt rock with little potential for subsurface soils. Much of the project area is characterized by steep topography where exploratory subsurface testing is neither warranted nor practicable. Although Little Buck Creek crosses the project area within a proposed Overhead Transmission Line corridor, this area was found to be a small stream crossing surrounded by steep terrain with no areas likely to contain potential cultural resources.

Inventory Results

The 2003 draft survey report, which was never finalized or submitted for agency review, preliminarily noted two separate resources, including an historic rock wall feature and a small, disturbed historic artifact scatter of glass, ceramics, and tin cans within a roadway (Ballentyne 2003). As part of the 2009 inventory, one historic period archaeological site, the Haran Farmstead, was identified within one of the turbine string corridors, and incorporates the rock wall feature identified in 2003. The historic artifact scatter previously documented in 2003 was not relocated during the 2009 inventory, and appeared to have been buried or obliterated by later road improvements in this same area (URS 2010).

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The Haran Farmstead, documented in 2009, consists of several rock features and a sparse historic artifact scatter associated with a former rural homesite related to James A. Haran, who had a small plum orchard here around the 1920s. A total of nine archaeological features were recorded, including two rock walls21 (probable property or field clearing boundaries), two structural rock foundations (probable residence and milking parlor), and several rock features of indeterminate function but possibly remnants of appurtenances such as privy, pump house or food storage structures. One small concentration of fewer than 20 historic artifacts, including aqua and colorless glass fragments, galvanized metal water pipes, crockery and porcelain fragments, and tin cans, also was observed. Approximately 100 to 150 artifacts, mostly metal fragments and tin cans, were found scattered across the site during a pedestrian survey supplemented by use of a metal detector.

In December 2009, URS archaeologists conducted exploratory subsurface sampling across the site to define the site boundaries and to determine the presence or absence of associated buried deposits. About 20 artifacts were encountered during the subsurface probing investigation, limited to wire nails, a water pipe, several small colorless glass fragments, and metal can or non-diagnostic metal fragments.

The NRHP eligibility of the Haran Farmstead is addressed in the Cultural Resources Inventory

Report. Each of the four criteria of eligibility is applied, and aspects of integrity are addressed. The Haran Farmstead is recommended as ineligible for the NRHP, due primarily to insufficient association and altered key aspects of integrity, which limit its potential to be considered under Criterion A (association with important events), Criterion B (association with important people), and Criterion C (having important characteristics of style). For Criterion D (information potential), the results of the inventory and exploratory subsurface probing indicate there is inadequate data potential to warrant eligibility. URS's recommendation for ineligibility is pending agency review and concurrence.

Summary

One historic period cultural resource was recorded within the APE: the Haran Farmstead archaeological site, which consists of rock features and a sparse artifact scatter related to a circa 1920s orchard and residence. Systematic subsurface probes were placed within this site and did not identify significant, buried deposits. The site is recommended as ineligible for the NRHP.

Additional historic farmsteads or other sites within the project area are not indicated by the results of archival research, which included review of historic maps and aerial photos. Field inventory confirmed that no aboveground resources, such as buildings, railroads, or flumes, are found in the project area.

A preliminary review of the ethnographic and ethnohistoric literature did not document this area as having any specific association for traditional resources, though uplands such as these could

21 The Haran Farmstead as recorded in 2009 incorporates the rock wall observed during the 2003 inventory. The other resource identified during the 2003 inventory, a small concentration of historic artifacts found within an existing access road, was not located in 2009.

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have been used at least transiently, for example, for plant resource gathering or spiritual purposes. The Applicant has initiated participation of the Confederated Tribes and Bands of the Yakama Nation in order to identify any potentially sensitive resources or traditional cultural properties in the project area. Two local tribal members with long-standing ties to the area toured the project area and did not identify any cultural resources or concerns. A review by Cultural Resources Department of the Yakama Nation is pending. The 2003 and 2009 inventories did not observe any pre-contact Native American site types, such as lithic scatters, petroglyphs, or peeled cedars during the inventory.

Only one water source was observed during the field inventory: the outlet of Little Buck Creek, downstream of the earthen dam that was constructed in 1947 to create the "Cedar Swamp" fire pond (located outside the APE). This small watercourse is surrounded by steep terrain and is not likely to have significant, associated archaeological resources.

Promontories associated with the proposed turbine string, especially Chemawa Hill and others with panoramic views of the surrounding area, were inspected closely for potential rock cairns,

rings, walls, or other alignments that could indicate sensitivity. No such features were observed. It appears that even if such resources had been present, the historic and modern logging practices would have obscured this type of resource.

Although the project area was logged at least 100 years ago, no features such as camps, historic roads, railroad features, or other evidence clearly related to the historic use of the area was observed. Large old-growth stumps are occasionally encountered, but most are in an advanced state of decay and springboard notches were not observed. No evidence for historic road alignments was observed during the inventory; existing roadways are mechanically-graded, usually rocked and graveled, modern-use alignments that lack historic distinction. As no old-growth forest remains in this area, potential sensitivity for scarified, peeled trees is not indicated.

Much of the current APE examined in the Cultural Resources Inventory Report conducted in 2009 was surveyed in 2003. This overlapping of inventory coverage, nearly six years apart, at different times of the year, and with the surrounding forest in different stages of harvest, provides additional support for a general absence of cultural resources to be found in the APE.

3.10.3 IMPACTS
3.10.3.1 Proposed Action
Construction

The proposed project has the potential to affect one historic period archaeological site, the Haran Farmstead, through ground disturbance during construction of the new project road and turbine and transformer pads. The degree of impact would depend on the final location of the road and turbines. The Cultural Resources Inventory Report recommended this site as ineligible for the NRHP subject to agency review and concurrence. If the Haran Farmstead is determined through agency concurrence to be ineligible for the NRHP, then no further management would be required and the project would not be considered to have an impact on significant cultural resources. If the Haran Farmstead is determined to be eligible for the NRHP, then the Applicant

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would consider avoidance and/or mitigation alternatives so that a finding of no effect or no adverse effect would be achieved.

Construction also would have the potential to impact other, currently undiscovered cultural or historic resources. Based on the extensive inventories conducted, the likelihood of encountering additional sites is low.

Effects on traditional cultural properties or other sensitive or sacred resources that might be of concern cannot be determined until consultation with the tribes is concluded. This consultation is not expected to be completed until after the Draft EIS is issued.

Operation

The ongoing maintenance of the access road or emergency procedures such as fire suppression

activities have the potential to cause additional impact to the Haran Farmstead or other, currently undiscovered resources.

Project Decommissioning

Project decommissioning could have impacts similar to those during initial construction, including ground disturbance from turbine, transformer and pad removal. As with construction, the degree of impact would depend on the final location of the road and turbines, and on the determination of NRHP eligibility for the Haran Farmstead.

3.10.3.2 No Action Alternative

Under the No Action Alternative the project would not be built, and no impacts to historic or cultural resources would take place.

3.10.4 MITIGATION MEASURES

The following mitigation measures are identified to avoid, minimize, and compensate for potential cultural resource impacts during construction and operation of the propose project to the extent feasible.

• Implement avoidance and data recovery if the Haran Farmstead (a historic period cultural resource recorded within the APE) is determined to be eligible for nomination to the NRHP. The Haran Farmstead archaeological site, which consists of rock features and a sparse artifact scatter related to a circa 1920s orchard and residence. If the Haran Farmstead is determined to be eligible for nomination to the NRHP, then avoidance and mitigation measures such as data recovery would be considered to achieve a finding of no adverse effect for the project. Though none have been identified to date within the project area, properties considered as significant for reasons other than research potential, such as traditional cultural properties, may require mitigation measures other than data recovery that would be determined in consultation with the Tribe and agencies.

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• Utilize BMPs to minimize impacts to any additional cultural or historic resources that may be encountered during construction of the proposed project. These BMPs include preparation and use of an Inadvertent Discovery Plan, which would establish procedures to deal with unanticipated discovery of cultural resources before and during construction. The plan, among other provisions, will require immediate work stoppage and appropriate notification in the event of discovery of previously unknown cultural materials. The plan also will specify protocols for the treatment of human remains that fulfill the requirements of the Native American Graves Protection and Repatriation Act in the event that human remains and/or funerary items are encountered during construction or operation of the project.
• Design the locations of road, turbine, and transformer to avoid and minimize impacts during construction regular maintenance operations.

3.10.5 UNAVOIDABLE ADVERSE IMPACTS

With the use of appropriate mitigation measures, the proposed project is not expected to produce any unavoidable impacts to historic or cultural resources.

3.10.6 REFERENCES

Attwell. 1975. Columbia River Gorge History: Volume 2. Tahlkie Books, Stevenson, Washington.

Ballantyne, Raena. 2003. PPM Energy Saddleback Wind Project Cultural Resource Assessment. Prepared for PPM Energy by CH2M Hill, Portland, Oregon. November 3.

Beckham, Stephen Dow, Rick Minor, Kathryn Anne Toepel, and Jo Reese. 1988. Prehistory and History of the Columbia River Gorge National Scenic Area, Oregon and Washington. Submitted to USDA Forest Service, Columbia River Gorge National Scenic Area, Hood River, Oregon.

Bureau of Land Management (BLM). 2009a. Survey Plats and Field Note Records. Online database accessed November 2, at: http://www.blm.gov/or/landrecords/survey/ySrvy1.php.

———. 2009b. Land Patent Search. Online database accessed November 2, at: http://www.glorecords.blm.gov/PatentSearch/Default.asp?.

Chatters, James C., and David L. Pokotylo. 1998. Prehistory: Introduction. In Plateau, Vol. 12, Handbook of North American Indians, edited by Deward E. Walker. pp. 73-102. Smithsonian Institution, Washington, D.C.

French, David H. and Catherine S. French. 1998. Wasco, Wishram, and Cascades. In Plateau, Vol. 12, Handbook of North American Indians, edited by Deward E. Walker. pp. 360

377. Smithsonian Institution, Washington, D.C. 3-212

Galm, Jerry R., Glen D. Hartmann, Ruth A. Masten, and Garry O. Stephenson. 1981. Cultural Resource Overview of Bonneville Power Administration's Mid-Columbia River Project, Central Washington. Eastern Washington University, Archaeological and Historical Services, Reports in Archaeology and History 100-66.

Griffin, Dennis and Thomas E. Churchill. 2001. Cultural Resource Survey and Traditional Cultural Property Study of the Lower White Salmon River, Klickitat/Skamania Counties, Washington. Archaeological Frontiers Report No. 19. Prepared for Yakama Nation, Toppenish, Washington, and Pacificorp, Portland, Oregon. Eugene, Oregon. October 15.

Jenkins, Dennis. 2009. NGBPP Research at Paisley Caves. Accessed November 3, 2009 at: http://www.uorgeon.edu/~ftrock/paisley_caves_description.php.

Masten, Ruth A. and Jerry R. Galm. 1989. An Overview of Cultural Resources in the Wild and Scenic Areas of the White Salmon and Klickitat Rivers, Klickitat and Skamania Counties, Washington, Vols. 1 and 2. Eastern Washington University Reports in Archaeology and History 100-69.

McCoy, Keith. 1987. The Mt. Adams Country: Forgotten Corner of the Columbia River Gorge. Pahto Publications, White Salmon, Washington.

———. 2003. Mid-Columbia North Shore: Odds and Ends. Trafford Publishing, Victoria,

B.C. Nielsen, Carl. 1959. Little White Salmon. In Skamania County History, Volume 1. Reprinted in 2007 by the Columbia River Gorge Interpretive Center Museum, Stevenson, Washington, as printed by the Original History Committee of 1959. p. 96-97.

Norton, Helen H., Robert Boyd and Eugene S. Hunn. 1983. The Klickitat Trail of South-Central Washington: A Reconstruction of Seasonally Used Resource Sites. In Prehistoric Places in the Southern Northwest Coast, Robert Greengo, editor. Thomas Burke Memorial Museum Research Report No.4., University of Washington, Seattle.

Parker, P.L., ed. 1993. Traditional Cultural Properties: What You Do and How We Think. CRM Volume 16 Special Issue. National Park Service, Washington, D.C.

Pettigrew, Richard M. 1981. A Prehistoric Culture Sequence in the Portland Basin of the Lower Columbia Valley. University of Oregon Anthropological Papers No. 22. University of Oregon, Eugene, Oregon.

Price, J.H. 1896. Bureau of Statistics, Agriculture and Immigration on the Agricultural, Industrial, and Commercial Conditions of the State. State of Washington First Annual Report, Olympia. Accessed: http://books.google.com/books.

Ruby, Robert H. and John A. Brown. 1992. A Guide to the Indian Tribes of the Pacific Northwest. Revised edition. University of Oklahoma Press, Norman.

3-213

Schuster, Helen. 1998. Yakima and Neighboring Groups. In Plateau, Vol. 12, Handbook of North American Indians, edited by Deward E. Walker. pp. 327-351. Smithsonian Institution, Washington, D.C.

Spier, Leslie, and Edward Sapir. 1930. Wishram Ethnography. University of Washington Publications in Anthropology 3(3):151-300. Seattle.

Stilson, M. Leland. 2005. Whistling Ridge Timber Sale Cultural Resource Survey. Washington Department of Natural Resources, land and Resources Division. Washington State Department of Archaeology and Historic Preservation, Olympia.

Thomas, Cam. 2007. The Story of the Flume: One common in the Northwest, the Broughton Lumber Company flume was America's last. Twentieth anniversary special edition DVD. Original 60-minute documentary. Cam Thomas Productions.

Thun, Louis. 1959. Early History Report. In Skamania County History, Volume 1. Reprinted in 2007 by the Columbia River Gorge Interpretive Center Museum, Stevenson, Washington, as printed by the Original History Committee of 1959. p. 108-110.

URS 2009. URS Corporation. Draft Cultural Resources Inventory Report for the Project. December 4.

URS 2010. URS Corporation. Revised Draft Cultural Resources Inventory Report for the Project. In preparation.

Winthrop, Robert, Johnson Meninick, and Staff. 1996. Inventory and Evaluation of Traditional Cultural Properties Associated with the Condit Hydroelectric Project, FERC Project No. 2342. Draft report to PacifiCorp and the Yakama Nation. Cultural Solutions, Ashland, Oregon.

3.11 TRANSPORTATION

This section discusses the existing network of roadways and rail, river, and air transportation in the project vicinity, as well as the potential impact of the proposed project on transportation.

3.11.1 AFFECTED ENVIRONMENT

3.11.1.1 Roadway Transportation

Existing Roadways

In the Columbia River Gorge, the two major roadways extending generally from east to west along the Columbia River are State Route (SR) 14 on the Washington side of the Columbia River and Interstate 84 on the Oregon side of the Columbia River. Other major roadways, such as State Routes 141 and 142 in Washington and State Routes 35 and 197 in Oregon, intersect these two highways generally in the vicinity of cities and communities located in the Gorge.

SR 14 between Interstate 5 in the Vancouver, Washington area and the project site is generally very narrow with 12-foot lanes and 2- to 4-foot paved shoulders. It also has many hills, and curves with tight corners in several places. East of the project site on SR 14, there is one low and very narrow tunnel east of the town of Lyle, Washington, and also a very narrow bridge east of The Dalles at approximately milepost (MP) 86. Between Cook-Underwood Road and SR 97 (Goldendale), SR 14 is generally narrow with 12-foot lanes and 2- to 4-foot paved shoulders. It also has some tight low-recommended-speed corners and a number of hills. Between SR 97 and the junction with SR 395/I-82, SR 14 is generally narrow with 12-foot lanes and 2- to 4-foot paved shoulders.

Existing access to the project site is provided by various county roads that extend northward from SR 14, along with existing private logging roads (see Figures 3.11-1 and 3.11-2). Key roads in the immediate project vicinity include:

• Cook-Underwood Road. Cook-Underwood Road has two 12-foot lanes and paved shoulders that are 1 foot or less in width. In general, the side slope begins at the fog line. This road is under the jurisdiction of Skamania County and generally is in good condition. There are currently no over-size or over-weight load restrictions in force. The Skamania County Comprehensive Plan lists Cook-Underwood Road as Federal Functional Classification "Major Rural Collector."
•Willard Road. Willard Road has two 12-foot lanes and paved shoulders that are 1 foot or less in width. This road is under the jurisdiction of Skamania County and generally is in good condition. There are currently no over-size or over-weight load restrictions in force. The Skamania County Comprehensive Plan lists Willard Road as Federal Functional Classification "Rural Local Access."
• West Pit Road. West Pit Road is a private logging road that connects to a network of existing private logging roads located on S.D.S. Co., LLC and Broughton Lumber Company property. West Pit Road varies in width from 20 to 26 feet. It is a dirt road covered in light pit run. This road has portions that generally are in poor condition; however, during summer 2009, various roadway improvements were made and segments of the road were widened for logging purposes.

Existing Traffic Volumes

Average annual daily traffic (AADT) values for SR 14 are shown in Table 3.11-1. Peak hour directional volumes were developed based on typical rural highway traffic patterns and proximity of business centers. Typical rural highway traffic patterns conservatively assume AM peak hour volumes to be approximately 7 percent of the total daily volumes, and PM peak hour volumes to be approximately 10 percent of the total daily volumes, with a directional split of 70/30. PM peak hour volumes are traditionally considered to by the highest during a given day. Since no current traffic data is available for Cook-Underwood Road at either the west or east junctions with SR 14, existing traffic volumes are based on typical patterns for small rural towns. Estimated 2009, 2011, and 2012 peak hour traffic volumes at the west and the east junctions of Cook-Underwood Road with SR 14 are presented in Table 3.11-2. Traffic volumes for 2011 and

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Figure 3.11-1 Project Roadway Access from the East

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Figure 3.11-2
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Figure 3.11-2
Project Roadway Access from the West 2012 were based on an expected average weighted growth rate of approximately one percent per year.

Table 3.11-1
Annual Daily Traffic at West and East Junctions of SR 14 and Cook-Underwood Road

Location
Average Annual Daily Traffic (all vehicles)
2008 2009 (est)a
SR 14 – west junction w Cook-Underwood Road 3,000 3,100
SR 14 east junction w Cook-Underwood Road 3,300 3,400

Source: WSDOT (2008)

a. A growth rate was developed for the project vicinity using historic data from annual traffic reports between 1996 and 2008. During several years between 1996 and 2008, there was no recorded historical growth in this area. Using this data, an average weighted growth rate of approximately 1 percent per year was determined.

Table 3.11-2
Estimated 2009, 2011, and 2012 Peak Hour Traffic Volumes
at West and East Junctions of SR 14 and Cook-Underwood Road

Location
West Junction of Cook-Underwood
Road with SR 14
East Junction of Cook-Underwood
Road with SR 14
2009 2009
AM Peak PM Peak AM Peak PM Peak
Eastbound SR 14 160 90 170 100
Westbound SR 14 70 220 70 240
Southbound Cook-
Underwood Road 10 10 10 10
2011 2011
AM Peak PM Peak AM Peak PM Peak
Eastbound SR 14 160 100 180 110
Westbound SR 14 70 230 80 260
Southbound Cook-
Underwood Road 10 10 10 10
2012 2012
AM Peak PM Peak AM Peak PM Peak
Eastbound SR 14 170 100 180 110
Westbound SR 14 70 240 80 260
Southbound Cook-
Underwood Road 10 10 10 10

AM Peak Hour is 7:00 AM to 8:00 AM

PM Peak Hour if 4:00 PM to 5:00 PM

Existing Level of Service

Level of service (LOS) is an estimate of operational performance based on delay to motor vehicles. The Highway Capacity Manual (TRB 2000), which is generally used when determining LOS, defines LOS using a letter scale from A to F. LOS A is defined as minimal or no delay to vehicles and LOS F is defined as extreme delays to vehicles. LOS C or better is

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typically considered acceptable for rural intersections and is the LOS threshold of acceptable traffic flow for Skamania County. Table 3.11-3 presents the LOS delay criteria for two-waystop-control intersections.

Table 3.11-3
Level of Service Criteria for Two-Way-Stop-Control Intersections

Level of Service Expected Traffic Delay
A < 10 seconds
B > 10 - 15 seconds
C > 15 - 25 seconds
D > 25 - 35 seconds
E > 35 - 50 seconds
F > 50 seconds

Source: TRB (2000)

Existing LOS was estimated for SR 14 and Cook-Underwood Road, using estimated 2009 traffic volumes and the software package Highway Capacity Software Plus, which uses algorithms based on the Highway Capacity Manual (TRB 2000). Based on this analysis, the longest delays occur at Cook-Underwood Road during the PM peak hour; however, these delays are relatively short (see Table 3.11-4). Up to approximately 10 seconds of delay is experienced by some vehicles at the west junction of Cook-Underwood Road with SR 14 during the PM peak hour. Slightly more than 10 seconds of delay is experienced by some vehicles at the east junction of Cook-Underwood Road with SR 14 during the PM peak hour. These delays translate to LOS A conditions at the west junction and LOS B at the east junction. Delays during the AM peak hour at Cook-Underwood Road and during both peak hours at SR 14 are all less than 10 seconds, which translates to LOS A.

Table 3.11-4
2009 Level of Service Summary at West and East Junctions of
SR 14 and Cook-Underwood Road

Roadway and
Turning Movement Peak Hour

West Junction East Junction
Delay (sec/veh) LOS Delay (sec/veh) LOS
SR 14 AM 7.6 A 7.6 A
Eastbound Left Turn PM 7.9 A 8.0 A
Cook-Underwood Road AM 9.4 A 9.4 A
Southbound Left/Right
Turn PM 10.0 A 10.2 B

Delay = Average per vehicle

Existing Traffic Safety

Traffic safety was analyzed along SR 14 between the towns of Stevenson and Bingen for 2006 to 2008. Collision Data Summaries were obtained from WSDOT. SR 14 is functionally classified as a rural collector roadway. SR 14 between Stevenson and Bingen is located within the Southwest Region of the state of Washington. During this three-year period, a total of 158 collisions occurred between the west city limits of Stevenson at MP 43.91, and the east city limits of Bingen at MP 66.88.

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Between 2006 and 2008, a total of 17 collisions occurred within the Stevenson city limits, and another 17 occurred within the Bingen city limits. Only one collision occurred at the west junction of Cook-Underwood Road and SR 14 (MP 56.28), and three collisions occurred at the east junction of Cook-Underwood Road and SR 14 (MP 63.32). Four collisions occurred at the intersection of Maple Street and SR 14 within the city of Bingen (MP 66.47). The majority of collisions occurred within Skamania County between MP 44.66 and MP 63.48. Several collisions also occurred within Klickitat County between MP 63.48 and MP 64.71, and within the White Salmon city limits between MP 64.71 and MP 65.50.

The number of collisions that occur along a given roadway is generally expressed in terms of a rate, where collision occurrence is indexed to the number of vehicles traveling on a particular length of the given roadway. The collision rate is based on the number of collisions per millionvehicle-miles (MVM) traveled. Table 3.11-5 shows collision rates for each year as well as multi-year rates for the three year period for SR 14 between Stevenson and Bingen, in addition to collision rates for the city of Bingen.

The multi-year collision rate along SR 14 between Stevenson and Bingen is 1.43 collisions per MVM. The 2007 average collision rate for all Washington state rural collector roadways was

1.65 collisions per MVM and for 2008, 1.63 collisions per MVM. The average collision rate for all Washington rural collector roadways within the Southwest Region during 2007 was 1.72 collisions per MVM, and during 2008, 1.87 collisions per MVM. The multi-year collision rate on SR 14 between Stevenson and Bingen is lower than both the 2007 and 2008 average Washington State and Southwest Region collision rates.

Table 3.11-5
Collision Numbers and Rates for Years 2006 through 2008

Number of Segment LengthAADT Collision Rate
Location Collisions MP Range (miles) (veh/day) (Collisions/MVM)
2006 Data

Stevenson to Bingen
Bingen City Limits
48
5
43.91 to 66.88
66.50 to 66.88
2007 Data
22.97
1.38
4,500
7,600
1.27
1.31
Stevenson to Bingen
Bingen City Limits
61
4
43.91 to 66.88
66.50 to 66.88
2008 Data
22.97
1.38
4,400
6,700
1.65
1.19
Stevenson to Bingen
Bingen City Limits
49
8
43.91 to 66.88
66.50 to 66.88
Multi-Year Data
22.97
1.38
4,200
6,300
1.39
2.52

Stevenson to Bingen
Bingen City Limits
158
17
43.91 to 66.88
66.50 to 66.88
22.97
1.38
4,400
6,900
1.43
1.63

AADT – average annual daily traffic
MVM million-vehicle-miles

The multi-year collision rate for the city of Bingen is 1.63 collisions per MVM. The multi-year collision rate for the city of Bingen is equal to or close to both the 2007 and 2008 Washington State collision rates and is lower than both the 2007 and 2008 average Southwest Region collision rates. No average collision rate data is available for year 2006.

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Transportation Plans and Programmed Transportation Improvements

Skamania County. The Transportation Element of the Comprehensive Plan represents the County's policy plan for the next 20 years and specifically considers the location and condition of the existing traffic circulation system, the projected transportation needs, and plans to address future transportation needs while maintaining established LOS standards. This plan is implemented through the Six-Year Transportation Improvement Program and Annual Construction Program. The most recent Six Year Transportation Improvement Program was approved in April 2009, and lists one improvement to Cook-Underwood Road: a resurfacing project between MP 0 and MP 3. This improvement is listed for years 4–6 of the program, or between 2012 and 2014.

Washington State Department of Transportation Statewide Transportation Improvement Program. This is a list of funded transportation improvement projects. The Transportation Improvement Program for 2009–2012 presents a list of regionally significant projects for the upcoming three years (WSDOT 2009a). A search of the project database for Clark, Skamania and Klickitat Counties showed no projects scheduled for any of the roads in the immediate project vicinity. The only planned transportation improvement project near the project site is resurfacing 1.0 mile of Wind River Road.

WSDOT also is planning to improve SR 14 between Camas and Washougal, east of Vancouver. The project will widen SR 14 from two lanes to four lanes from the end of the West Camas Slough Bridge to Union Street (SR 500). Included in the project will be construction of a new

bridge parallel to the existing bridge on the east end of Lady Island, and construction of a split-diamond interchange at Union Street and 2nd Street. The project is planned to go to bid in 2010, and construction is scheduled to be completed in 2012 (WSDOT 2009b).

Skamania County and Klickitat County Regional Transportation Plans. These Regional Transportation Plans were developed by the Southwest Washington Regional Transportation Council, in coordination with other jurisdictions and WSDOT (SWRTC 2009a and 2009b). Regional transportation plans are intended to develop regional solutions to transportation needs. Both plans emphasize maintenance and preservation as priorities. Improvements are recommended to address identified deficiencies. Recommended improvements in these plans include several projects to upgrade portions of SR 14. However, funding is not provided through this planning process and these projects are not currently included in the Statewide Transportation Improvement Program.

3.11.1.2 Rail Transportation

The Burlington Northern Santa Fe Railway operates a rail mainline that runs parallel to SR 14 to the south of the project site. This line is a major link that ties the important industrial areas of Vancouver, BC; Portland, Oregon; and Seattle/Tacoma, Washington to the north-central states of the United States and eastern railroads via Chicago. In the project vicinity, SDS currently has two rail spurs from the Burlington Northern Santa Fe mainline to an existing SDS facility located along the Columbia River in Bingen, Washington. One spur terminates near Maple Street and is approximately 800 feet long. The second spur terminates at a plywood facility in the area and is approximately 2,000 feet long.
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3.11.1.3 River Transportation

River transportation in the project vicinity includes barge and boat shipping transport on the Columbia River, which is located about two miles south of the project site and runs predominantly east to west towards the Pacific Ocean. The Columbia River is a major throughway used for transporting commodities such as grain, wheat, and lumber down river from the interior Pacific Northwest to ports such as the Ports of Longview and Vancouver for shipping to various U.S. and international destinations. The Columbia River also is used to ship goods upriver to destinations in the interior Pacific Northwest. Although there are many hydroelectric dams and associated lockage facilities along the Columbia River, the only such facility between the Pacific Ocean and the project site is Bonneville Dam, at about river mile 146 on the Columbia River.

Barges moving upriver from the Ports of Longview or Vancouver are transported to the Bonneville Dam using tug boats. The barges and tugs bypass the Bonneville Dam via the lockage facility at the Dam. The Bonneville lockage facility accommodates commercial, government, and recreational vessels. The heaviest lockage traffic on average occurs during the month of August. Vessel traffic is typically heaviest on Thursdays, Fridays, Saturdays, and Sundays. River vessels then continue upriver past the SDS facility in Bingen. At this SDS facility, there is a dock and crane suitable for unloading heavy materials and other equipment.

3.11.1.4 Air Transportation

Air transportation in the regional area includes the Portland International Airport approximately 60 miles southwest of the proposed project site, and several other smaller public and private local airports within a 10-mile radius.

3.11.2 IMPACTS

To determine potential transportation impacts, the Skamania County Public Works Department Manager, the County Engineer, and the Maintenance Superintendent were consulted. Potential impacts to potential project access routes were considered, and levels of service were estimated for the construction and operation periods. Impacts were considered high if they would result in a decrease in LOS to below the Skamania County standard of LOS C at a given intersection after mitigation. Impacts would be moderate if the project would result in a modest change to traffic volumes, patterns, or LOS. Impacts would be low if the project would result in no noticeable change to traffic volumes, patterns, or LOS. Potential impacts to rail, river, and air transportation also were evaluated to determine whether there would be significant increases in uses or interference with their operations.

3.11.2.1 Proposed Action
Construction

Impacts to Project Vicinity Roadways

During project construction, various types of construction vehicles would access the project site. Most project construction vehicles would be expected to travel to the general project vicinity via

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SR 14 since it is the most convenient major highway leading to the area. From SR 14, the construction access route would follow Cook-Underwood Road to Willard Road, and then use a short segment of newly-constructed roadway to access West Pit Road (see Figure 3.11-2). From West Pit Road, construction vehicles would use a network of existing, improved, and new private logging roads at the site to access areas where project facilities would be built (see Figure 3.11-3).

Project construction would last for approximately one year, and would involve transport of large wind energy components, such as the tower sections, the nacelle and turbines, and blades, to the project site during a two to three month period. All wind energy components initially would be delivered from their manufacturing points to one of two ports in Washington state – either the Port of Longview or the Port of Vancouver. From these Ports, the project components would be transported to the project site. Potential methods for transporting these materials to the project site include:

• Using specialized trucks that would use existing State, County, City, and private

roadways to deliver the components directly to the project site;
• By train via the existing Burlington Northern Santa Fe rail lines that run parallel to SR 14 to deliver the components to an existing SDS facility in Bingen, Washington, and then using specialized trucks to deliver these components to the project site; and
• By barge and tug boat up the Columbia River and through the lockage facility at the Bonneville Dam to SDS's existing facility in Bingen and then via specialized trucks to the project site.

Potential impacts associated with specialized trucks are discussed in this subsection of the analysis; the rail and river transport options are discussed later in this section. The specialized trucks used for transporting wind energy components could have loads as high as 17.5 feet tall measured from the ground to the highest point of the load, as wide as 14.5 feet, and/or as long as 150 feet. While most of these trucks would not exceed the WSDOT legal load limit, some trucks could have a gross vehicle weight in excess of 105,500 pounds. Trucks with loads in excess of the legal load limit could degrade the condition of the existing roadways along the proposed haul route, and may require additional axles in order to distribute the weight of the load. Permits would be required for all oversized and overweight vehicles.

Most specialized trucks delivering components directly from either of the Ports to the project site would be expected to use SR 14 to the west junction of Cook-Underwood Road with SR 14 at MP 56.28 (see Figure 3.11-2). These trucks would encounter restrictions on SR 14 that are summarized in Table 3.11-6, and could require additional traffic control measures. However, SR 14 would not require improvements to accommodate the trucks the transport of wind energy components.
Comments: These "specialized trucks" would be traveling in the National Scenic Area, on two lane roads that are used by a lot of tourists. Of course there would be impacts to local, tourist, and other truck traffic! What we don't know from this DEIS is how horrible these impacts would actually be. And, we don't know how they would degrade the roads and who would be responsible for fixing these roads.

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Figure 3.11-3

Source: GeoDataScape. Project Site Roadway Network

Due to the road constraints discussed in Section 3.11.1.1 and identified in Table 3.11-6, the use of specialized trucks on SR 14 may not be physically possible for some extremely large or wide loads. An alternate route would be for trucks to use I-84 through Oregon to the Boardman junction, then along SR 730 to the junction of I-82 with SR 395, across the Columbia River back into Washington State and then to SR 14. Trucks traveling on SR 14 in this direction, between the junction of I-82/SR 395 and Cook-Underwood Road, would be constrained by one very narrow tunnel with a height restriction of 13 feet 3 inches measured vertically from the edge of the roadway. There also are several additional Columbia River crossings west of the I-82/SR

395 crossing, but each has weight restrictions that would prohibit the transport of wind energy components. These crossings include the Bridge of the Gods, the Hood River Bridge, SR 197, and SR 97.

Table 3.11-6 Road and Bridge Restrictions for Oversize Motor Vehicles on SR 14 (all restrictions apply in both directions)

Milepost	Height[a]	Width	Length
18.89 to 34.68 (west of project)	Loads over 10' wide require 1 front and 1 rear pilot cars		
19 to 56 (west of project)	Loads over 14' wide require 2 front and 1 rear pilot cars		
19 to 83.53 (west and east of project)			Loads over 125' – trailer/load length prohibited
56.28 to 63.25 (west of project)	All over-height (14') loads must contact WSDOT Goldendale Office		
Detour via Cook-Underwood Road	must be approved by Skamania County		
		No loads over 12' wide allowed	
		Loads between 8.5 and 10' wide require 2 front and 1 rear pilot cars	
65 to 65 Hood River Bridge Crossing (east of project)		No over-width loads allowed	
76.77 to 76.91 (east of project)	All over-height (14') loads must contact WSDOT Goldendale Office		
	Loads over 10' wide require 2 front and 1 rear pilot cars		

a. Heights are measured from the ground to the highest point on the load.
For wind energy components transported either by rail or barge as discussed below, these

components would be delivered from either of the Ports to the existing SDS facility in Bingen, Washington, and then loaded onto specialized trucks at this facility. The trucks would then transport the components to the project site. The route for these trucks would include approximately 0.25 mile of Maple Street in Bingen, Washington. Maple Street was recently constructed and is in good condition. Maple Street has two 12-foot lanes, a wide concrete sidewalk on the east side, and a paved shoulder on the west side. There are currently no oversize or overweight restrictions for this road.

Specialized trucks leaving the SDS facility would then follow SR 14 to the east junction of SR 14 and Cook-Underwood Road at MP 63.32. This portion of SR 14 has a restriction on loads over 125 feet in length. Special provisions and/or permitting may be required to transport the turbine blades (the longest components) to the junction of SR 14 and Cook-Underwood Road at MP 63.32 from the junction of SR 197 (MP 83.50).

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Improvements to County and private roads between SR 14 and the project site would be necessary to support the long and heavy loads that would be required for the delivery of the wind energy components. These improvements would include widening and rebuilding sections of the existing roadway network, as well as placing asphalt on some roads that would be used for hauling equipment and project components to the project site. All existing county roadways requiring improvements prior to hauling would be designed and constructed in accordance with the WSDOT Design Manual (WSDOT 2007) and A Policy on Geometric Design of Highways and Streets (AASHTO 2004).

Cook-Underwood Road contains a bridge that crosses the Little White Salmon River near its northernmost point at approximate MP 5.5. Specialized trucks would be required to meet Skamania County provisions for oversized and overweight loads. Cook-Underwood Road would require no improvements to accommodate the transport of wind energy components. However, specialized trucks transporting wind energy blades, the longest single wind energy component, eastbound on SR 14 onto Cook-Underwood Road at MP 56.28 or westbound onto Cook-Underwood Road at MP 63.32 would require a 135-foot inside turning radius, and a 20-foot allowance for "tip swing."

In addition, temporary widening of the intersection of Cook-Underwood Road and Willard Road would be required to accommodate the required truck turning radii for westbound trucks transporting wind energy blades to the project site. Widening could include removal of some trees and vegetation, and engineered fill sections and embankment cut sections. The engineered fill and embankment cut sections would not require paving, but would require an all-weather driving surface. The exact amount of right of way or easement that might be required from adjacent property owners would depend on the turbines chosen, and would be determined during final design. Following construction, the area would be re-vegetated. No other improvements would be required along Willard Road to accommodate the transport of wind energy components

A new direct connection across property owned by SDS would be required between Willard Road and West Pit Road for transport of larger project components to the project site. The

intersection of Willard Road and West Pit Road would be designed to accommodate the required truck turning radii. In addition, West Pit Road would require additional permanent widening to accommodate transport of wind energy components to the project site. West Pit Road would be improved to provide a minimum drivable section width of 25 feet (width of finished road), with an additional 5 feet of shoulder on either side, with allowance for side slope and drainage. The one existing culvert, which was upgraded during the summer of 2009, may need some additional lengthening if the roadway is widened over the culvert. Widening could include removal of trees and vegetation, and engineered fill sections and embankment cut sections. The engineered fill and embankment cut sections would not require paving, but would require an all-weather driving surface.

Roadway Construction at the Project Site

To provide access to all of the proposed wind tower locations, approximately 7.9 miles of existing roads would be improved and about 2.4 miles of new private access roads would be constructed at the project site (see Figure 3.11-3). All roadway improvements and new construction at the proposed project site would be designed and constructed in accordance with

the standards for the applicable road classifications as set forth in the Skamania County Private Road Guidelines and Development Assistance Manual, as adopted by the County Resolution in 2008.

New gravel roadways would extend toward and run along the turbine strings. Roads extending towards the turbine strings would be designed for a minimum drivable section width of 25 feet with allowance for side slope and drainage. Roads running along or between the turbine strings would be designed for a minimum drivable section width of 25 feet with an additional 5-foot section on both sides to accommodate drainage and clearance for the project crane that would be on site to assemble the tower sections, the nacelles, and blades. All newly constructed roads would be constructed with an all-weather driving surface.

During construction, parking would be located at the construction staging area and along the proposed project site access roads. Parking along turbine string roads would be primarily for those employees working on foundations, electrical infrastructure, and turbines. Vehicles would park in areas that would be already temporarily or permanently disturbed from other construction activities. No additional ground disturbance would occur solely for construction parking requirements.

Impacts to Traffic Volumes and LOS

During project construction, there would be an increase in traffic activity in and around the project site due to the construction workforce, equipment deliveries, and empty trucks returning to SR 14. Traffic delays could occur on project area roads due to the maneuvering of large vehicles carrying heavy and/or long loads. In addition, it is expected that approximately 265 personnel would be on site at the same time while multiple construction disciplines conduct work

concurrently. Between 65 and 75 percent of the construction labor force would most likely be hired from the cities of Portland and Vancouver; of these, most are expected to commute daily to and from the project site. The remaining 25 to 35 percent of the work force would most likely be residents of Skamania, Klickitat, and Hood River counties.

Traffic volumes during construction were estimated for the west and east junctions of Cook-Underwood Road with SR 14. The estimated traffic volumes assume that all construction vehicles related to project construction would travel through either the east or the west junction Cook-Underwood Road with SR 14; if other routes were used, the actual impacts to these junctions would be less.

Table 3.11-7 compares estimated traffic volumes without the proposed project to estimated traffic volumes with the proposed project during the peak construction period. As shown in this table, it is expected that at the peak of construction (a period of three to five months) during the AM peak hour, approximately 210 construction vehicles would travel through either junction of SR 14 and Cook-Underwood Road. During the PM peak hour, approximately 10 construction vehicles would be expected to travel through this same junction. Also during this construction peak, an increase of up to 275 vehicles total would be southbound on Cook-Underwood Road from the project site during the PM peak hour.

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Table 3.11-7
Estimated 2011 Traffic Volumes
during Peak Construction Period

Location West Junction of Cook-Underwood Road
with SR 14
East Junction of Cook-Underwood Road
with SR 14
2011 Without Project 2011 With Project 2011 Without Project 2011 With Project
AM Peak PM Peak AM Peak PM Peak AM Peak PM Peak AM Peak PM Peak
Eastbound
SR 14 160 100 370 105 180 110 390 115
Westbound
SR 14 70 230 160 240 80 260 170 270
Southbound
Cook-
Underwood
Road
10 10 20 285 10 10 20 285

AM Peak Hour is 7:00 AM to 8:00 AM

PM Peak Hour if 4:00 PM to 5:00 PM

Peak-hour LOS analyses were completed for both the west and east junctions of SR 14 and Cook-Underwood Road using estimated 2011 traffic volumes, including non-project traffic and traffic related to construction. The analysis assumed that 65 to 75 percent of construction traffic trips would travel to and from west of the project site on SR 14, and 25 to 35 percent of construction traffic trips would travel to and from east of the project site on SR 14. Many of these trips would occur outside of the peak periods, depending on their origin location and start time. Analyses results are presented in Table 3.11-8.

Table 3.11-8
Level of Service during Construction

Location Peak Hour
Estimated 2009
LOS
Estimated 2011 LOS
Without Project With Project
Delay
(sec/veh) LOS
Delay
(sec/veh) LOS
Delay
(sec/veh) LOS
West Junction of Cook-Underwood Road
SR 14
Eastbound Left Turn
AM 7.6 A 7.6 A 8.4 A
PM 7.9 A 8.0 A 8.0 A
Cook-Underwood Road
Southbound Left/Right Turn
AM 9.4 A 9.4 A 14.7 B
PM 10.0 A 10.1 B 14.1 B
East Junction of Cook-Underwood Road
SR 14
Eastbound Left Turn
AM 7.6 A 7.6 A 8.4 A
PM 8.0 A 8.0 A 8.1 A
Cook-Underwood Road
Southbound Left/Right Turn
AM 9.4 A 9.5 A 15.1 B
PM 10.2 B 10.3 B 14.7 B

Delay = Average per vehicle

Based on this analysis, estimated 2011 traffic volumes, including construction vehicles, would have minimal impact on the LOS at either junction of SR 14, which would maintain LOS A. For vehicles turning left or right from Cook-Underwood Road at either the west or the east junctions

of Cook-Underwood Road with SR 14, delays would increase up to approximately six seconds per vehicle over estimated 2011 conditions. The southbound approach on Cook-Underwood

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Road at the west junction with SR 14 would experience degradation in LOS from A to B during the AM hour over estimated 2011 operations. The southbound approach on Cook-Underwood Road at the east junction with SR 14 would experience degradation in LOS from A to B during the AM peak hour over estimated 2011 operations. LOS B operations would be maintained at both the west and east junctions of Cook-Underwood Road with SR 14 during the PM peak hour with no change in LOS over year 2011.

Traffic Hazards

Traffic hazards associated with construction projects generally relate to accidents. Construction of the project would require that many construction vehicles, including trucks with oversized and overweight loads, share the existing roadway network with the general public. As a result, some accidents could occur that would be directly attributable to construction traffic. This increase is expected to be temporary and minimal. Prior to project construction, coordination would be required between the owner, contractor, the Cities of Bingen and White Salmon, Skamania County, and WSDOT to ensure the highest level of safety possible for both the traveling public and the construction vehicles. This coordination would be particularly important during the summer months when the cities of Bingen and White Salmon experience an increase in traffic volume from recreational activities in the surrounding area.

SR 14 in the vicinity of the proposed project site is a two-lane undivided rural highway with limited access. Access points in the proposed project vicinity do not include roadway channelization for turning movements. PM peak traffic volumes at both the east and west intersections of SR 14 with Cook-Underwood Road would increase from an estimated 10 vehicles without the project to an estimated 285 vehicles with the project (see Table 3.11-7). While traffic delay would increase by approximately four seconds (see Table 3.11-8), LOS at both intersections in the PM peak would remain at LOS B. Construction worker traffic (workers travelling to and from the job site) is anticipated to have minor effects on traffic safety. Potential moderate impacts to travel safety could occur due to the turning movements of oversized and overweight trucks onto and off of Cook-Underwood Road during the peak construction period.

Impacts to Railroad Transportation

Some wind energy components also may be transported from either the Port of Longview or Port of Vancouver by rail to the existing SDS facility in Bingen, Washington. Wind energy components on rail cars can be up to 14.5 feet in width, up to approximately 15 feet in height, and as long as 150 feet. The wind energy components likely would be transported on standard or heavy-duty 89-foot long flat rail cars. These components would be off-loaded at the SDS facility to a staging location to be determined and loaded onto specialized trucks for transport to the project site.

Although the Burlington Northern Santa Fe rail line between Vancouver, Washington and the SDS facility could accommodate most wind energy components, this rail line may not be able to accommodate loads with widths in excess of 14 feet. This may preclude transport by rail of the wide bottom sections of the wind turbine towers; however, the nacelles, turbines, blades, and upper sections of the wind turbine towers still could be transported by rail. Because rail transport would only be used for components that could safely be transported by rail and would

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be accomplished within existing railroad schedules, impacts to rail transportation are expected to be minimal to low.

Impacts to River Transportation

Potential impacts to river transportation would occur only if wind energy components were transported by barge from either the Port of Longview or Port of Vancouver to the SDS facility in Bingen, Washington. The wind energy components would be transported from the Ports upriver to the Bonneville Dam using by barges and tugboats. The barges and tugboats would bypass the Bonneville Dam via the lockage facility, and continue upriver to the existing SDS facility in Bingen, Washington. The wind energy components would be off-loaded at the SDS facility to a staging location to be determined and loaded onto specialized trucks for transport to the proposed project site.

Comment: What types of "specialized trucks" are we talking about here? How much do they weigh? What is this "staging location" and where is it located? Surely SDS knows where they can or cannot off-load any barged equipment!

There would be no oversized or overweight restrictions using barges at either of the Ports, on the Columbia River, or at the lockage facility at the Bonneville Dam. Coordination with the Bonneville Dam Project Office would be required to determine optimal times for lockage use. Because there would be no interference with river operations and shipping of project materials would be accomplished within existing lockage schedules, construction impacts to river transportation are expected to be minimal to low.

Impacts to Air Transportation

Temporary construction equipment such as cranes and derricks that would be used for the construction of the proposed towers could pose a hazard to aviation safety during the construction period, depending on their height. A "Determination of No Hazard to Air Navigation" likely would need to be obtained for certain taller wind energy components, such as the wind turbines, that would be constructed at the project site. It is not expected that local or regional airports would be used for transporting construction equipment or material, and no air transportation impacts would be anticipated.

Operation

Project operation would generate small volumes of additional traffic associated with workers commuting to the project and occasional service delivery trips. Project operation workers would generate approximately 30 daily trips, with service delivery trips ranging from zero to usually no more than four daily trips. Although the project will operate 24 hours a day, seven days a week, using an automated system, the operations crew would typically work eight-hour days Monday through Friday. The distribution of operational traffic trips is expected to be the same as for construction trips.

Impacts to Project Vicinity Roadways

Vehicles trips generated during project operation would consist primarily of employees commuting to and from the site in their personal vehicles. The number of additional trips, and the types of vehicles used, are not expected to exceed State or County roadway legal load limits. These vehicles would not contribute to roadway degradation.

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Impacts to Traffic Volumes and LOS

Peak-hour traffic volumes were estimated for operations at both the west and east junctions of SR 14 and Cook-Underwood Road. These estimates include 2012 baseline traffic volumes and the project-generated traffic volumes. Like the analysis of traffic volumes during construction, the estimated traffic volumes assume that all vehicles during project operation would travel through either the east or the west junction Cook-Underwood Road with SR 14; if other routes were used, the actual impacts to these junctions would be less. Table 3.11-9 compares estimated traffic volumes without the proposed project to estimated traffic volumes with the proposed project during full operation of the project.

Table 3.11-9
Estimated 2012 Traffic Volumes during Operation
at Junctions of Cook-Underwood Road and SR 14

Location
West Junction of Cook-Underwood Road
with SR 14
East Junction of Cook-Underwood Road
with SR 14
2012 Without Project 2012 With Project 2012 Without Project 2012 With Project
AM Peak PM Peak AM Peak PM Peak AM Peak PM Peak AM Peak PM Peak
Eastbound
SR 14 170 100 180 100 180 110 190 110
Westbound
SR 14 70 240 75 240 80 260 85 260
Southbound
Cook-
Underwood

Road
10 10 10 25 10 10 10 25

AM Peak Hour is 7:00 AM to 8:00 AM

PM Peak Hour if 4:00 PM to 5:00 PM

Peak-hour LOS analyses were completed for both the west and east junctions of SR 14 and Cook-Underwood Road, based on the estimated 2012 traffic volumes. The results indicate that operations would have a minimal impact on the LOS for either the west or the east junctions of Cook-Underwood Road with SR 14. Delays would increase slightly—less than one second per vehicle—for vehicles turning left or right from Cook-Underwood Road at either the west or the east junctions of Cook-Underwood Road with SR 14 over estimated 2012 operations. LOS A and B operations would be maintained during the AM and PM peak hours at both the west and east junctions of Cook-Underwood Road with SR 14 with no change in LOS over year 2012. Analyses results are presented in Table 3.11-10.

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Table 3.11-10
Level of Service during Operation

Location Peak Hour
Estimated 2009
LOS
Estimated 2012 LOS
Without Project With Project
Delay(sec/veh) LOS
Delay(sec/veh) LOS
Delay(sec/veh) LOS
West Junction of Cook-Underwood Road
SR 14
Eastbound Left Turn
AM 7.6 A 7.6 A 7.6 A
PM 7.9 A 8.0 A 8.0 A
Cook-Underwood Road
Southbound Left/Right Turn
AM 9.4 A 9.4 A 9.7 A
PM 10.0 A 10.2 B 10.4 B
East Junction of Cook-Underwood Road
SR 14
Eastbound Left Turn
AM 7.6 A 7.6 A 7.6 A
PM 8.0 A 8.0 A 8.0 A
Cook-Underwood Road
Southbound Left/Right Turn

AM 9.4 A 9.5 A 9.8 A
PM 10.2 B 10.3 B 10.6 B

Delay = Average per vehicle

During operations, employees would park at the Operations and Maintenance facility parking lot. There would be approximately 10 vehicles each day, including employee and delivery vehicles. A maximum of approximately 20 vehicles are expected to be parked in the Operations and Maintenance facility parking lot at any one time. A visitor kiosk is also planned at the Operations and Maintenance facility that would provide tourists with a safe place to view and learn about wind turbines. The parking lot would be sized to accommodate these uses.

Traffic Hazards

Because of the low volumes and infrequent trips, project operation is not expected to increase traffic hazards or accident occurrences.

Impacts to Railroad and River Transportation

Once construction is complete and the project is operational, it is expected that there would not be any use of railroad or river transportation for the proposed project. Because there thus would be no interference with railroad or river operations, there would be no expected impacts to railroad and river transportation during project operation.

Impacts to Air Transportation

The proposed wind turbines would not be expected to conflict with arriving or departing aircraft from either the public or private airports within the project vicinity. All towers would meet Federal Aviation Administration regulations regarding lighting. A "Determination of No Hazard to Air Navigation" would be obtained for the proposed project. The Federal Aviation Administration would need to be notified of any alterations to the wind turbine towers that could affect air space.

Project Decommissioning

In compliance with WAC 463-72, Site Restoration and Preservation, the Applicant will provide EFSEC with an initial site restoration plan at least ninety days prior to the beginning of site

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preparation. The plan will address site restoration that would occur at the conclusion of the project's operating life (estimated to be 30 years), and restoration in the event the project is suspended or terminated during construction or before it has completed its useful operating life. The plan will include or parallel a decommissioning plan for the project.

The initial site restoration plan will be prepared in sufficient detail to identify, evaluate, and

resolve all major transportation issues presently anticipated, including impacts to traffic volumes and LOS standards. If impacts to transportation are anticipated to occur as a result of site restoration and project decommissioning, mitigation measures will be proposed as part of the plan.

3.11.2.2 No Action Alternative

Under the No Action Alternative, the project would not be constructed and therefore no additional auto or truck trips would be added due to the project. No impacts upon any type of transportation (road, rail, air, or river) would occur.

3.11.3 MITIGATION MEASURES

The following mitigation measures are identified to avoid, reduce, or compensate for potential project impacts to transportation.

• Prepare and implement a Transportation Management Plan to direct and obligate the contractor to implement procedures to minimize traffic impacts in consultation with both WSDOT and Skamania County. The plan should be submitted to EFSEC for approval
and include requirements for coordination of project-related construction traffic and WSDOT planned construction projects, along with requirements for coordination of project-related construction traffic and Skamania County, City of Bingen, and City of White Salmon summer recreational traffic.
• Comply with State and County permitting requirements for over-size and over-weight vehicles.
• Notify land owners in the project vicinity prior to construction of transportation routes that would be used for construction equipment and labor.
• Place approved State and/or County advanced warning construction signs prior to and during construction.
• Use certified flaggers when necessary to direct traffic when over-size and over-weight trucks either enter or exit public roads, to minimize risk of accidents.
• Avoid restricting traffic flow for more than 20 minutes during the construction phase.
• Use pilot cars both in front of and behind all trucks transporting over-size or over-weight loads on all public roadways. For all loads over 10 feet wide traveling on SR 14 from east of the proposed project site between MP 76.77 and MP 76.91, use three pilot cars, two in

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front and one in the rear. The two front pilot cars would be required to maintain a minimum 500 feet of separation. The lead pilot car would warn oncoming traffic of the over-size load, and the pilot car immediately in front of the over-size load would be responsible for stopping all oncoming traffic.
• Design and build all access road improvements or new construction according to WSDOT and Washington State access management standards.
• Conduct pre- and post-haul construction visual assessments of roadway surface conditions to identify weak or deteriorated areas along the haul route that may require repair as a result of

project-related traffic. Following the end of construction, repair all pavement sections affected by project-related traffic as needed to pre-construction conditions or better.
• Perform all snow removal from project access roads in a safe manner that does not degrade roadway conditions.

3.11.4 UNAVOIDABLE ADVERSE IMPACTS

No major unavoidable adverse impacts to traffic and transportation have been identified. Construction of the project is anticipated to have very minor impacts to LOS standards, and to have a potential very minor impact on traffic safety. Operation of the project is anticipated to have little to no impact to transportation.

3.11.5 REFERENCES

American Association of State Highway and Transportation Officials (AASHTO). 2004. A Policy on Geometric Design of Highways and Streets.

Transportation Research Board (TRB). 2000. Highway Capacity Manual.

Southwest Washington Regional Transportation Council (SWRTC). 2009a. Skamania County Regional Transportation Plan. May. Accessed October 2009 at: http://www.rtc.wa.gov/reports/mtp/Rtp2009Skamania.pdf.

———. 2009b. Klickitat County Regional Transportation Plan. May. Accessed October 2009 at: http://www.rtc.wa.gov/reports/mtp/Rtp2009Klickitat.pdf.

Washington State Department of Transportation (WSDOT). 2007. Design Manual. Publication M 22-01.

———. 2008. 2008 Annual Traffic Report.

———. 2009a. Statewide Transportation Improvement Plan (on-line project database). Accessed October 2009 at:

http://eefmapps.wsdot.wa.gov/fmi/xsl/STIP/search_agency.xsl?-db=STIP&lay=websearch&-view.

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———. 2009b. SR 14 Project Camas-Washougal Widening and Interchange Web Page. Accessed October 2009 at: http://www.wsdot.wa.gov/projects/sr14/camaswashougal/.

3.12 PUBLIC SERVICES AND UTILITIES

This section describes impacts to public services and utilities. The project area and site are served by a variety of public services and utilities. Public services discussed include fire

protection, law enforcement, emergency medical services and schools. Utilities discussed include telephone, electric, sewer, water and solid waste disposal.

3.12.1 AFFECTED ENVIRONMENT

3.12.1.1 Public Services
Fire Protection

As discussed in Section 3.6.1.2, Public Health and Safety, fire protection services are provided by two city fire departments (North Bonneville and Stevenson) and seven Skamania County fire districts provide fire protection to Skamania County residents. DNR also provides fire suppression services to forested areas in Skamania County, and would be the first responder to a fire emergency at the project site (J. Weeks, personal communication).

Law Enforcement

As discussed in Section 3.6.1.3, Public Health and Safety, the Skamania County Sheriff's Office would provide law enforcement services to the project. Sheriff's Office headquarters are located in Stevenson, approximately 15 miles southwest of the project site. The response time from Sheriff's Office headquarters to the project site is approximately 20 minutes.

Additionally, the Washington State Patrol patrols SR 14, which is south of the site. Construction and equipment delivery vehicles would travel on SR 14. Roads extending north of SR 14 are county roads, and are patrolled by the Sheriff's Office.

Emergency Medical Services

As discussed in Section 3.6.1.4, Public Health and Safety, two ambulance companies would respond to an emergency at the Project site: Skamania County Emergency Medical Service and Skyline Ambulance. Skamania County Emergency Medical Services is the functioning entity of Skamania County Hospital District No. 1, which provides ambulance service to the residents of Skamania County. Skyline Ambulance is based at Skyline Hospital in White Salmon, and is equipped with three ambulance vehicles.

The two hospitals closest to the project are Skyline Hospital in White Salmon (7 miles southeast of the project) and Providence Hood River Memorial Hospital in the City of Hood River (8 miles southeast of the project).

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Schools

The public school closest to the project site is the Mill A School, which is approximately 2 miles southwest of the site. The next closest public schools are in the community of Carson, approximately 10 miles west of the site. School buses may drive through neighborhoods near the project site, including Willard and Mill A, which are located approximately 2.25 and 1.5 miles

respectively from the site.

Mill A School District No. 31 provides public educational services to the population in the district (ESD 2008). Mill A School currently enrolls 81 students in grades K through 8 in the southeastern corner of Skamania County adjacent to the project site. High school students living within the boundaries of the Mill A School District attend Stevenson High School in the Stevenson-Carson School District No. 303, which borders Mill A School District No. 31 on the west. Table 3.12-4 shows that over the last few years, enrollment in these five districts has not changed more than five percentage points, on average.

Table 3.12-1
Enrollment Trends
in the Whistling Ridge Energy Project Vicinity

Mill A School District
Mount Pleasant School District
Skamania School District
Stevenson-Carson School District
Washougal School District
Fall 2004 79 65 64 1,049 2,870
Fall 2005 76 63 72 1,069 3,015
Fall 2006 66 56 70 1,058 3,057
Fall 2007 69 56 68 1,020 3,054
Annual Average
Rate of Growth,
2004-2007
-4.4% -4.8% 2.0% -0.9% 2.1%

Source: Washington State OSPI (2008).

There are no higher education facilities near the project area. The higher education facilities closest to the site are located in Vancouver, Washington.

3.12.1.2 Utilities

The site area is served by the following utilities:

- Telephone: Embarq
- Electric: Skamania County Public Utility District (PUD)
- Sewer: Individual septic systems
- Water: Individual wells
- Solid Waste Pickup: Skamania County

Embarq provides telephone service to the area surrounding the site (D. Cox, personal communication). The Skamania County Public Utility District (PUD) is a customer-owned utility that provides electricity service to Skamania County. The PUD's primary source of power is obtained from BPA, which markets power generated by the federal hydroelectric facilities along the Columbia River. The PUD's backup power source is the Condit Dam. The PUD has expressed interest in using the project as a source of backup power when the Condit Dam is removed.

The homes and businesses in Mill A and Willard do not have sewer service or water service, and are served by individual wells and septic systems.

Skamania County provides solid waste pick-up service to residences and businesses in the County, including those near the project site (Skamania County PUD office staff, personal communication). The majority of solid waste from Skamania County is delivered to the Roosevelt Regional Landfill in Klickitat County (WSSWIC 2009). The landfill began operations in 1990, and as of 2000 had in excess of 140 million tons of remaining permitted capacity. The landfill site contains more than 2,000 acres in which additional capacity could likely be permitted (Klickitat County 2000).

3.12.2 IMPACTS
3.12.2.1 Proposed Action

The potential impacts of the proposed project on public services and utilities include those from construction and operation.

Construction

The use of construction workers from outside the immediate area could result in a minor and temporary increase in the demand for public services including police departments, providers of emergency medical services, and local fire departments.

The impact of project construction on local schools would be at most minor and temporary, as few out-of-area construction workers are likely to be accompanied by families for this temporary construction project.

Construction-related impacts to local utilities providing telephone, electric or solid waste pickup are also expected to be minor and temporary. Most workers would not be in the area for long enough to obtain these services; those who stayed in temporary housing in the area would not remain for more than a few months.

The presence of construction vehicles on area roads would not impact the response times for emergency providers. Construction trucks would represent additional volume on area roads, but transportation LOS would remain at LOS A or B (delays of less than 15 seconds), and thus would not cause substantial delays to emergency response vehicles. Construction activities themselves would take place entirely within land managed for commercial forestry by the Applicant, and would not impact local emergency providers.

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Fire Protection

The project site is generally forest land. The only structures proposed on the forest lands are the towers, associated transformers and substation, and the Operations and Maintenance facility. Project construction could temporarily increase the risk of fire at the project site and in the broader project area. As the landowner, S.D.S Co., LLC has the ability to respond to fires on their forest land with dozers and water trucks.

Fire response on forest lands is provided by DNR. They have resources in the area and respond to all wildland fires. DNR would likely respond to a structure fire in the woods, as would Underwood Fire District and Mill A Volunteers. Mill A Volunteers is not a recognized fire district with a tax base but a volunteer fire company; the group has joint responder agreements with Underwood and DNR.

Underwood Fire District is the nearest local fire district and has submitted a comment (scoping comment #108) to EFSEC regarding their ability to respond to fires and provide services. The Underwood fire chief commented:

"The area designated for the energy project is outside our district; DNR is the official service provider for these areas. The Project may have a generally positive impact on the ability of our department and DNR to offer fire protection
services to the area because new roads, extensions, and improved existing roads will provide better access for all first responders. If necessary, Fire District 3 can provide service coverage to the Project area without any reduction in service capacity to our constituency. We do not have a contract to provide service to the area. The project does not present any challenges or requirements for which we are not already prepared to respond."

There are two potential locations for the Operations and Maintenance facility site, one on-site next to the substation and the alternative site along West Pit Road near the intersection with Willard Road. The alternative site would have a shorter emergency response time than the on-site option.

Law Enforcement

Construction activities associated with the project would increase traffic volume on roadways surrounding the project site, as a result of both commuting construction workers and the transportation of materials. This increased volume would likely occur in mid-summer to fall when vacationers use the roadways. It is possible that the number of accidents and calls for service along major roadways (e.g., SR 14 and I-84) would increase for approximately six months, after which most of the on-site work would be done.

The demand for traffic enforcement activities would peak when construction employment peaks at approximately 265 employees for approximately one month. Out-of-area workers are not

expected to move their families into the project area because each construction phase requiring workers with specialized skills would be completed within three and one-half months or less. They would likely either commute (from the Portland-Vancouver area) or stay in temporary housing for the period of time needed to complete their tasks. As described in Section 4.4

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Socioeconomics of the Application for Site Certification, this analysis assumes that as many as 40 non-local workers could be employed at the project site during the peak construction month (this includes potential out-of-state workers) and would likely stay in temporary housing. There likely would be additional calls for response during the construction phase, primarily because of increased traffic and accident potential. However, because the construction period is short (approximately one year), the increased service calls are not anticipated to be sufficient in number to require additional law enforcement staff resources in the project area. See Section 3.11, Transportation, for further discussion of traffic safety hazards.

Comment: There is no real, data-based socio-economic analysis in the DEIS. SDS and BPA have failed to do any analysis on the socio-economic cumulative impacts to Skamania County as a result of this proposed project. During the public scoping period, SDS Lumber presented that a total of FIVE permanent jobs (some technical and others as watch personnel) would result from this project. As far as I can determine, pillaging 1000+ acres for five jobs is not a good return on our environmental investment!!

Emergency Medical Services

During project construction, the local demand for emergency medical services could increase slightly due to construction accidents that could occur at the project site or project vicinity. Project construction workers would be exposed to hazards caused by equipment failure, natural disaster, or human mistake that would require the services of local emergency response units to provide initial treatment and transportation to a local medical facility and the services of emergency rooms in the receiving facility. The specific level of demand for emergency medical service response is unknown.

With adequate safety measures in place, and considering the size of the construction workforce (which would temporarily reach a peak of 265 workers for one month) it is expected that project construction would generate few serious injury accidents requiring emergency medical services response. The two local hospitals (Skyline Hospital in White Salmon and Providence Hood River Memorial Hospital in Hood River) have capacity for additional patients and there are ambulances available to service the project site.

It is expected that an average of 31 and a peak of 40 construction workers would temporarily migrate to the local labor market from either outside the immediate tri-county area of Skamania, Klickitat and Hood River region or from out of state. However, because the duration of their stay in the project area would be short (approximately four months), it is unlikely that these temporary workers would create a noticeable increase in demand for emergency medical services during project construction.

Schools

An average of 21 (40 at peak) specialized non-local construction workers from out of the area would work on the project. However, the anticipated maximum duration of employment for each craft is three to three and one-half months, and few workers are anticipated to move their families to the area. Further, much of the construction will take place during the summer months when school is not in session. Consequently, construction is expected to cause little to no additional enrollment. The Mill A and White Salmon School Districts have the capacity to handle any influx. The White Salmon Valley School District commented during scoping:

"Economically this project has the potential to benefit the community and the school district by adding revenues without creating additional demands for services or impacts on the school system."

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Construction traffic is not expected to lower transportation LOS below LOS A or B (delay less than 15 seconds), and consequently there would be little or no impact on school busses in the area.

Utilities

Water Supply. During the approximately one-year construction period, approximately 1.7 million gallons of water would be consumed for road compaction, dust control, wetting concrete, and other construction purposes. The construction contractor would supply water used during construction. Water would be delivered to the project site via water trucks and obtained from a local source with a valid water right. This impact would be negligible considering the temporary nature of the impact and the availability of adequate water supplies.

Wastewater. No impacts to community wastewater disposal systems are anticipated because the project would not be connected to a sewer system during construction. Sanitary wastes would be collected in portable toilets during construction. Disposal of sanitary wastes would be managed through a contract with a portable toilet vendor. The contractor would incorporate applicable state capacity requirements based on the construction worker population on the project site at any given time. Collected wastes would be managed and disposed of by the contracted vendor.

Solid Waste. During construction, the primary wastes generated would be solid construction debris such as scrap metal, cable, wire, wood pallets, plastic packaging materials and cardboard. The total volume of construction wastes is expected to be less than ten tons. This waste would be accumulated on site in drop boxes until hauled away to a licensed transfer station or landfill by either the construction contractor or the Skamania County Solid Waste Division.

The majority of solid waste from Skamania County is delivered to the Roosevelt Regional Landfill in Klickitat County (WSSWIC 2009). The landfill began operations in 1990, and as of 2000 had in excess of 140 million tons of remaining permitted capacity. The landfill site

contains more than 2,000 acres, in which additional capacity could likely be permitted (Klickitat County 2000).

Operation

Project operation would create a potential positive impact on public services and utilities. The project's assessed value could be as much as $87.5 million, and this would generate approximately $731,500 per year in property tax revenue and $50,000 in sales tax revenue. Assuming that an annual tax revenue of $731,500 would be distributed in the same manner as current property tax distributions, funds receiving the most revenue would be the State School Fund ($185,281), School District 405 Maintenance and Operations ($149,461), the County Road fund ($115,035), and the Current Expense fund ($111,086). The sales tax revenue would be split between Washington State (approximately $46,000) and Washington Counties, primarily Skamania and Klickitat Counties ($4,000). Section 3.13.2 Impacts provides additional information on revenue. Although impacts are expected to be minimal, a portion of these funds could nevertheless be used to upgrade existing public services and utilities in Klickitat County.

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The project would have eight to nine on-site employees during operation. Given this small number, and considering the use of on-site services and emergency response plans, the project is expected to have minimal adverse impact on local public services and utilities.

Fire Protection

Fire protection would continue to be provided by S.D.S. Co., LLC, DNR, Underwood Fire District and Mill A Volunteers. Potential for fire during operations would be lower than during the construction period, and the remaining fire risk could be mitigated through appropriate operational practices. DNR has stated that resources for fire protection and suppression services are adequate to serve the project during construction and operation (J. Weeks, personal communication).

Wildfires in the project area are relatively rare, and DNR continually monitors fire conditions.

Turbine fires are possible; however, with the types of modern wind turbines proposed for the project, turbine malfunctions leading to fires in the nacelle are extremely rare. The turbine control system detects overheating in turbine machinery, and internal fires would be detected by these sensors, causing the machine to shut down immediately and send an alarm signal to the central supervisory control and data acquisition system, which would notify operators of the alarm by cell phone or pager.

Law Enforcement

The Sheriff's Office resources are generally adequate to serve the project during construction and operation, given that on-site security is provided by a separate party (D. Cox, personal communication). Whistling Ridge Energy LLC would likely contract locally for private security.

Emergency Services

The project would not result in a decrease in response times for area service providers during operation. The project's eight to nine permanent employees would not represent a substantial increase in traffic volumes on area roads that would impact emergency response, nor would project facilities result in additional traffic controls.

Schools

The addition of eight to nine employees, even if all were from outside the local area and had families, would represent a minimal impact to local schools, especially since they would likely live in more than one school district.

Utilities

Upon completion, the project and either of the proposed sites for the Operations and Maintenance Facility would be served by the following utility systems:

• Telephone. Embarq and Sprint. Both providers have adequate capacity to serve the site.
• Electric service. Skamania County PUD/BPA connection. Electricity would be used at the Operations and Maintenance building. The PUD has adequate capacity to serve the site. The impact would be the same at either alternative location for the facility;

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however, the alternative site at West Pit Road would be closer to existing PUD lines. No new BPA infrastructure would be needed for the electrical transmission interconnection system beyond the proposed interconnection and substation.
• Drinking water. Estimated water use during operation would be less than 5,000 gallons per day, primarily for showers, kitchen, and bathroom for Operations and Maintenance staff. Since the staff would work eight-hour shifts Monday through Friday, total water use is likely to be equivalent or less than a single-family home. Water would be supplied by an on-site well. A well using less than 5,000 gallons of water a day would be exempt from permit requirements in RCW 90.44.040. The well would be installed by a well contractor licensed pursuant to Chapter 173-162 WAC, and in compliance with the requirements and standards of Chapter 173-160 WAC. The well would be installed consistent with Skamania County Community Development Department and Ecology requirements for the new wells.
• Wastewater. Sewer service would be provided through an on-site septic system. The Operations and Maintenance facility would use less than 5,000 gallons per day of water, and since sewer flows are determined by indoor water use, total sewer flow is also likely to be equivalent or less than a single-family home. There is adequate space on either the project site or the alternative Operations and Maintenance site for construction of a septic field of sufficient size to serve this demand. The septic system would be built by a septic tank installer licensed by Skamania County, in accordance with all requirements of the

Washington Department of Health and the Skamania County Community Development Department Environmental Health Division.
• Non-hazardous waste. Solid waste pickup would be provided by Skamania County through Allied Waste, which has one of three garbage collection franchises for the County. The Roosevelt Regional Land Fill has adequate space for any routine nonhazardous waste from the project. .

Project Decommissioning

In compliance with WAC 463-72, Site Restoration and Preservation, the Applicant will provide EFSEC with an initial site restoration plan at least ninety days prior to the beginning of site preparation. The plan will address site restoration that would occur at the conclusion of the project's operating life (estimated to be 30 years), and restoration in the event the project is suspended or terminated during construction or before it has completed its useful operating life. The plan will include or parallel a decommissioning plan for the project.

The initial site restoration plan will be prepared in sufficient detail to identify, evaluate, and resolve all major environmental and public health and safety issues presently anticipated, including potential impacts on public services and utilities. If impacts to public services or utilities are anticipated to occur as a result of site restoration and project decommissioning, mitigation measures will be proposed as part of the plan.

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3.12.2.2 No Action Alternative

Under the No Action Alternative the project would not be built. There would be no impacts to public services and utilities.

3.12.3 MITIGATION MEASURES

The following mitigation measures are identified to avoid, reduce, or compensate for potential project impacts to public services and utilities during construction or operation of the proposed project.

• Mitigate potential impacts to public services and utilities by using tax revenues generated by the project.
• Provide all local police, fire, and emergency medical agencies with emergency response information for the project, including employee contact information, procedures for rescue operations to the nacelles, and location of rescue basket. The Applicant would provide applicable emergency response information to local agencies prior to project construction and would review and update employee contact information annually and provide any changes to the appropriate agencies.
• Utilize fire precautions for staying abreast of fire conditions in the project area by contacting DNR. A Fire Protection and Prevention Plan would be developed for EFSEC approval and implemented, in coordination with the Skamania County Fire Marshall and

appropriate agencies. Both the wind turbine generators and the substation would be equipped with lightning protection systems. As seen in Table 3.6-5, Public Health and Safety, sources for potential fire and explosion along with measures to mitigate the risk of either occurring, are outlined.
• Maintain the use of a full-time security plan during project construction to reduce the potential need for increased police services to the project site. These law enforcement mitigation measures are outlined in Section 3.6.3, Public Health and Safety.
• Prepare emergency plans to protect the public health, safety, and environment on and off the project site in the case of a major natural disaster or industrial accident relating to or affecting the project. The construction specifications would require that the contractors prepare and implement a Construction Health and Safety Program that included an emergency plan. The Construction Health and Safety Program would include the following provisions:
- Construction Injury and Illness Prevention Plan
- Construction Written Safety Program
- Construction Personnel Protective Devices
- Construction On-Site Fire Suppression Prevention

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- Construction Off-Site Fire Suppression Support
• Install the well supplying the Operations and Maintenance facility, at either of the two sites under consideration, by a well contractor licensed pursuant to Chapter 173-162 WAC, and in compliance with the requirements and standards of Chapter 173-160 WAC. The well would be installed consistent with Skamania County Community Development Department and Ecology requirements for the new wells.
• Coordinate and comply with the Skamania County Community Development Department Environmental Health Division, and would comply with all County and State septic tank and subsurface disposal field design, installation, and maintenance requirements

3.12.4 UNAVOIDABLE ADVERSE IMPACTS

The project would have no unavoidable adverse impacts to public services and utilities. The small amount of additional services and utilities that would be needed would be offset by the increased tax revenue.

Comment: When SDS first proposed this project, Mr. Jason Spadaro, SDS's president held a couple of community meetings in the area. I attended one of these meetings and took notes. These are my notes from the Mill-A meeting held on Aug. 11th, 2007: **My notes from the SDS August 11th, 2007 presentation on the Mill-A Wind Generation project called "Saddleback":** ***Audience questions are italicized.***

Jason Spadaro, SDS president gave the presentation and he had a representative from Puget Sound Energy, Brian Lentz (sp?) their partner in this project.

Jason/Skamania County has too much federal land base so it won't benefit from wind energy as much as other counties. [Why can't wind turbines be on Federal lands? There are cattle, sheep, miners, etc., using Federal lands! Why not wind turbines?]

Some questions that came to my mind as he spoke:

? What about migration routes for animals? Danger from blades? (Wasco just this week, of 27 August, had a fatality from a broken blade.)

? View shed? Visibility?

? Water issues?

? Transmission lines—how will the generated electricity get to market? Power stations?

Jamie Tolfree, Skamania County Commission for District 3, said that the county will get less timber dollars in the next 5 years; down by 30% by 2011.

Jason/We want to keep the power local. But he makes no promises. Jason said that tax rates for Mill-A residents could be lower. Jobs would be produced.

? But, would tax rates actually go down for Mill-A residents only? Or would the tax rate decline (if there is one) be spread out over the whole county and its residents?

? Costs to public?

? Are there any EPA regs for wind turbine noise?

? Are there tax credits given to start up wind energy companies?

Jason spoke of "turbine flicker" where sunlight flickers as it the sun shines through the blades. [It can be very annoying as anyone who has ever had outside branches "flickering" in the afternoon sun, can attest to!]

? FAA requirements?

? Affect on bats, owls, night-flying animals?

Jason has 4 years of data on sensitive, threatened, or endangered species for the project area. According to him, this is not an area where they would be in great numbers. [I think the Jason's survey may not be accurate!] The turbines are 80 meters tall (approx. 240 feet.)

Jason stated that BPA's transmission lines go through the property and that they would hook up with those lines. There are two types of transmission lines up there, 115 KV and 230 KV. Clyde Leach, one of three Skamania County Public Utility District

Commissioners, said that he would like to see SDS's project connect to the 115 KV line in order to improve PUD's service. [There are, apparently, transmission problems on the 115 KV line and there are power fluctuations.] Leach also said that the demand for turbines for wind energy production has created a backlog of in turbine production. Jason said that they are working on a 2010 timeline.

Roads/Jason—will necessitate year-round roads. Some will have to be upgraded. County roads may require upgrades and "we've talked to the county about this." (Too bad the county hasn't talked to the rest of us!)

? Who would pay for these upgrades? Environmental reviews? SEPA?

***Johanna asked about lightning strikes and possible fires.* Jason/The towers are grounded and there is a 50 foot radius gravel area around each tower. [The fire issue is a very big concern for residents in Mill-A.]**

***Mildred Boucher asked if the view shed from I-84 would be affected.* Jason/The turbines could possibly be seen from Mosier.**

***LeeLynn asked how much would the local schools get. What would be the benefit to the county?* Jason/State schools would get $171,000. We want economic benefit for Willard and Mill-A, but there's no tax mechanism to benefit these schools directly. The project area is actually in the White Salmon school district.**

? How are utilities taxed? What basis?

One member of the public suggested that SDS subdivide their land around Mill-A and Underwood so people could build more houses. Lots of loud disagreement from the group!!

Jason/We could help you form a fire district and then we could pay into your fire district. BUT everybody else would also have to pay into the fire district—which they don't do now. ***A fireman in the audience spoke up: Could expand Underwood fire district except that Underwood has hit their levy limit.***

***Johanna/What kind of people are you going to need to upkeep the towers?* Jason/This is specialized work. A concrete 50 - 60 jobs during construction and 5 – 10 people to keep things going once the project is done. In Dayton, there are 83 towers and it takes 15 people to upkeep them. The technicians have to have knowledge about hydraulics and not be afraid of heights, etc.**

? Can SDS provide scholarships for trainees? Apparently there is a college program in The Dalles specifically geared toward wind power work.

? What is the guarantee that those 50 – 60 jobs will be local?

? How much of your project is being subsidized? **Jason/We would get a production credit of 1.98 cents/kwh for ten years. [This is a pretty good subsidy considering we pay less than 5 cents/kwh!]**

Jason/The substation and a maintenance building would be within a fenced area and would not be visible.

Neal/What type of permitting process do you have to do? **Jason/We have a pre-application conference with the county at the end of this month and next month. This project may require an EIS. May have to have scoping meetings. We estimate that the talks with the county could last 2 – 3 months. We're looking at 6 – 8 months on the low end and at least two public meetings. There might already be a record of certain environmental studies and we might not need to do a SEPA or NEPA.**

Jason is delusional if he thinks that this project would not require a SEPA or an EIS! It is interesting that Jason has been talking to Skamania county but there has been no public record of any meetings and this subject has not been on the commissioners' agendas.

Comment continued: There are no indications in this presentation that Skamania schools would get any benefits from this proposal. The $171,000 that Jason Spadaro talks about would go to the STATE school system to be distributed to all the school systems; the project area is actually in the White Salmon-Bingen, WA school district. There would not be, apparently, any benefits for the local fire district, either. Also, Jason did not speak to the amount of tax revenue that Skamania County would actually get from this proposal. The county's yearly budget is approximately $50,000,000, with less than $3,000,000 coming from property taxes. Since we don't have the data as to how much property tax this proposed wind farm would generate, there can really be no data-based cost-benefit analysis done on this proposal and any assumed benefits to Skamania County.

3.12.5 REFERENCES

Carlson, John. Skamania County Emergency Management. Phone conversation with Katie Carroz, Carroz Consulting LLC. December 30, 2008.

Cox, Dave. Undersheriff, Skamania County Sheriff's Office. Phone conversation with Katie Carroz, Carroz Consulting LLC. December 17, 2008.

Educational Service District 112 (ESD). 2008. School Districts, Skamania County. Accessed December 15 and 17, 2008 at http://www.esd112.org/schooldistricts/skamania_county.html.

Fullerton, Gail A. and Ole Helgerson. 2008. Underwood Community Wildfire Protection Plan. Accessed December 12, 2008 at:

http://www.skamaniacounty.org/Wildfire/UnderwoodCWPP/Underwood%20CWPP%20Draft.pdf.

Hovey, Russ. Department of Natural Resources. Phone conversation with Katie Carroz, Carroz Consulting LLC. January 13, 2009.

Klickitat County. 2000. 2000 Klickitat County Comprehensive Solid Waste Management Plan Update. Section 10.2.2. Accessed October 2009 at: http://www.klickitatcounty.org/SolidWaste/FilesHtml/SWMP/10-0.pdf.

Municipal Research and Services Center of Washington (MRSC). 2008. MRSC Website. Accessed December 17, 2008 at http://www.mrsc.org/Subjects/PubSafe/Fire/fireservice.aspx#Skamania.

Skamania County Public Utility District Office Staff. Phone conversation with Katie Carroz, Carroz Consulting LLC. December 30, 2008.

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Skinner, Tracy. Washington Survey and Ratings Bureau. Email communications with Katie Carroz, Carroz Consulting LLC, December 12 through December 23, 2008.

Skyline Hospital. 2008. Skyline Hospital Website. Accessed December 19, 2008 at http://www.skylinehospital.com/index.html.

Washington Association of Sheriffs and Police Chiefs (WASPC). 2008. Criminal Justice Information: Crime in Washington. Accessed December 19, 2008 at http://www.waspc.org/index.php?c=Criminal%20Justice%20Information%20Support.

Washington State Office of the Superintendent of Public Instruction (OSPI). 2008. Data and Reports. Accessed December 15, 2008 at http://www.k12.wa.us/dataadmin/default.aspx.

Washington State Patrol. District 5 Public Information Contact, Phone conversation with Katie Carroz, Carroz Consulting LLC. January 26, 2009.

Washington State Solid Waste Information Clearinghouse (WSSWIC). 2009. Solid Waste Facilities for County. Accessed October 2009 at: https://fortress.wa.gov/ecy/swicpublic/UIProfiles/Profile.aspx?profileID=30#haulers.

Weeks, Joe. Southeast (Ellensburg) Region of the Washington State Department of Natural Resources Fire Service. Phone conversation and email with Katie Carroz, Carroz Consulting LLC. February 5, 2009

3.13 SOCIOECONOMICS

This section describes the potential impact of the proposed project on local socioeconomic resources. For the purpose of this analysis, the region is defined as the tri-county area that includes Skamania and Klickitat Counties in Washington State and Hood River County in Oregon State. The project area is defined as the area within approximately three miles of the

project site.

3.13.1 AFFECTED ENVIRONMENT
3.13.1.1 Demographics
Region

Table 3.13-1 shows the April 1, 2009 population for Skamania and Klickitat Counties, and the July 1, 2008 population for Hood River, Oregon. A greater percentage of all three counties live outside of incorporated areas. The incorporated cities closest to the project site are White Salmon, Washington, with 2,200 residents, and Hood River, Oregon, with 6,865 residents. The metropolitan area closest to the project site is the Portland-Vancouver-Beaverton metropolitan area, with a population of 2.2 million people. Table 3.13-1 also shows the population distribution for the region and the surrounding communities.

Minority residents represent 23 percent of the White Salmon population and 31 percent of the Hood River population. The minority population is primarily Hispanic/Latino. The tri-county

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area including Skamania, Klickitat, and Hood River Counties is predominantly white, non-Hispanic. Hood River County has the highest minority percentage (31 percent) of population, followed by Klickitat County (16 percent) and Skamania County (11 percent). The State of Washington population includes 24 percent minority residents. Oregon's population includes 20 percent minority.

In 2000, 17 percent of the population of White Salmon and Hood River were living below the poverty22 level. This same measure was 13 percent for Skamania County, 17 percent for Klickitat County, and 14 percent for Hood River County the same year. These percentages are higher than statewide averages for Washington and Oregon.

Comment: This information on minority populations shows a need for a full Environmental Justice portion to this DEIS. BPA, as a Federal agency is certainly required to prepare a environmental justice analysis for this DEIS. Why hasn't it been done? Just talking about environmental justice is not doing the research to see how rural communities and residents are being impacted by the proliferation of wind farms in the West; it is not analyzing the cumulative impacts of transmission lines and other energy production facilities on the health and welfare of these rural communities. Environmental justice must also apply to the environment and the flora and fauna that occupy it. What are the environmental cumulative impacts to flora and fauna? This is another fatal flaw of this inadequate DEIS. I will address Environmental Justice in a separate comment memo.

Table 3-13-1 Population Distribution in the Project Vicinity

Jurisdiction Population, April 1, 2000 Population, 2009
Skamania County 9,872 10,800
Unincorporated 8,079 8,465

Incorporated 1,793 2,335
North Bonneville 593 880
Stevenson 1,200 1,455
Klickitat County 19,161 20,200
Unincorporated 12,536 13,550
Incorporated 6,625 6,650
Bingen 672 685
Goldendale 3,760 3,745
White Salmon 2,193 2,200
Hood River County (Oregon) 20,411 21,725
Unincorporated 13,465 13,745
Incorporated 6,946 7,980
Cascade Locks 1,115 1,055
Hood River 5,831 6,925
Washington State 5,894,143 6,668,200
Unincorporated 2,374,593 2,552,500
Incorporated 3,519,550 4,115,700
Oregon State 3,421,399 3,823,465
Unincorporated 1,141,038 1,158,198
Incorporated 2,280,361 2,665,267

Notes: 2000 estimates are April 1 estimates; 2009 estimates are April 1 for Washington State and counties, and July
1 for Oregon state and Hood River County.
Sources: WOFM (2009), PSUPRC (2009).

Skamania County's population is expected to grow from 10,800 in 2009 to 11,720 in 2015, an annual average growth rate of 1.4 percent. Klickitat County's population is expected to grow from 20,200 in 2009 to 23,049 in 2015, an annual average growth rate of 2.2 percent. The

22 The Census Bureau uses a set of income thresholds that vary by family size and composition to determine who is in poverty. If a family's total income is less than the family's threshold, then that family and every individual in it is considered in poverty. The official poverty thresholds do not vary geographically, but are updated annually for inflation. The poverty threshold in 2000 for a family of four with two related children under age 18 was $17,463 (US Census 2009).

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growth rates for both Skamania County and Washington State are expected to slow by 0.3–0.4 percentage points during 2015 to 2025. The population growth rate for Klickitat County is expected to slow from 2.2 to 1.1 percent for 2015 to 2025. Skamania County is expected to have 12,915 residents by 2025 and Klickitat County is expected to have 25,831 residents by 2025. Hood River County is expected to grow 1.3 percent annually on average, during 2009–2015 and 2015–2025.

Project Area

In 2008 the three census block groups within 3 miles of the project site had 3,347 residents. Approximately 12 percent were minority. Nine percent lived below the poverty level in 2000; fewer than for the region generally.

3.13.1.2 Housing
Region

In 2008 there were 5,409 housing units in Skamania County, 9,985 housing units in Klickitat County and 3,050 housing units in Hood River County. Occupancy rates in 2008 were 83 percent in Skamania County, 89 percent in Klickitat County and 90 percent in Hood River County, representing 909 vacant units in Skamania County, 1,078 vacant units in Klickitat County and 892 vacant units in Hood River County. In 2000, median gross rents were 13 percent lower in Skamania County and 25 percent lower in Klickitat County than for Washington as a whole. Median gross rent in Hood River County was 13 percent lower than in Oregon as a whole in 2000.

Project Area

The existing residences closest to the project site are approximately 0.48 mile and 0.8 mile from the proposed turbine locations. A new homesite location has been applied for, which would be located approximately 2,000 feet (0.38 mile) from the site's south property line. It is unknown if the applicant for this permit has secured all approvals or has proceeded with construction plans. One of two alternative Operations and Maintenance facility sites is located approximately 0.9 mile west of the project site on West Pit Road. The nearest residence to this potential site is approximately 0.25 mile away. The other alternative Operations and Maintenance facility site is located on the project site adjacent to and north of the substation, farther from residential areas.

The unincorporated community of Willard is located approximately 2.25 miles northwest of the project site. The unincorporated community of Mill A also is located near the project site, approximately 1.5 miles west of the site. The homes near the project site are in a rural setting, primarily single family and between 30 and 50 years old.

Temporary Housing

Over 1,000 hotel rooms and 39 recreational vehicle (RV) or tent campsites exist within 25 miles of the project site (Table 3.13-2). Assuming an average occupancy rates of 70 percent, a minimum of 325 hotels rooms or RV/tent campsites are available at any one time.

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Table 3.13-2
Temporary Lodging Units

Type of Lodging Units within 25 Miles of Project Site
Hotel or Motel 1,043

RV Camping 21
Tent Camping 16
Cabin or RV 2
Total Units 1,082
Units Available Assuming 70% Occupancy 325

Source: Woodall (2008), TravelWashington (2008).

3.13.1.3 Employment
Region

In Skamania County, there were approximately 3,254 jobs in 2007 (BEA 2009), representing a gain of 138 jobs over 2006 levels. The principal sources of employment in Skamania County were local government, accommodation and food services, federal government, and manufacturing (Golubcow 2006a and 2006b). "Place of work earnings" (wages, salaries and proprietors' earnings) accounted for only one-quarter of total personal income in the county, with income from property (dividends, interest and rent) and transfer payments (mainly Social Security) making up the balance. The annual unemployment rate in Skamania County was 6.6 percent in 2007 and 8.4 percent in 2008, higher than for Washington State (4.5 percent in 2007 and 5.5 percent in 2008).

In Klickitat County, there were approximately 9,839 jobs in 2007 (BEA 2009). Of these jobs, SDS and Broughton Lumber Company employ a work force of up to 325 employees during their busiest production times, which is equivalent to three percent of total jobs in Klickitat County.23 The principal sources of employment were local government, retail trade, and professional and technical services. Place of work earnings accounted for about 46 percent of total personal income in the county, with income from property and transfer payments making up the balance. The unemployment rate in 2007 was 6.7 percent, and in 2008 was 8.2 percent. These unemployment rates were higher than for Washington State as a whole.

There were 15,787 jobs in Hood River County in 2007 (BEA 2009), representing the highest employment of the three counties in the region. Place of work earnings accounted for 59 percent of total personal income in the county, with income from property and transfer payments making up the balance. The principal sources of employment were manufacturing, health care and social assistance, local government, and retail trade. The unemployment rate in Hood River County was 4.6 percent in 2007. In comparison, the annual unemployment rate for Oregon as a whole was 5.1 percent in 2000 and 5.2 percent in 2007.

Table 3.13-3 shows unemployment rates in the region for 2000, 2007 and 2008. Hood River County has the lowest unemployment rate of the three counties in the region. The most recent

23 Located in Bingen, SDS jobs are reported as part of Klickitat County statistics even though logging operations occur in both Skamania and Klickitat Counties.

available annual unemployment rate in Hood River County (2007) is roughly two percentage points lower than the same measures for Klickitat and Skamania Counties and 0.6 percentage point lower than for Oregon as a whole.

Table 3.13-3
Unemployment Trends

Geographic Area	Unemployed					
	2000 Annual		2007 Annual		Annual 2008 (Washington areas) and December 2008 (Oregon Areasa	
	No.	Percent	No.	Percent	No.	Percent
Skamania County	290	6.0	340	6.6	450	8.4
Klickitat County	700	7.5	650	6.7	820	8.2
Hood River County	757	6.6	592	4.6	712	5.7
Washington State	151,340	5.0	154,720	4.5	192,000	5.5
Oregon State	93,196	5.1	100,517	5.2	158,369	8.0

Sources: WESD (2008), OED (2009).

a. The most recent annual statistics for Washington are for 2008 and are shown in this column. The most recent annual statistics for Oregon are for 2007. This column shows (for the Oregon areas) the most recent unemployment rate available for both Oregon and Hood River County, which is the December 2008 monthly unemployment rate. The annual rates, however, do not show the impact of the economic recession, which began to be felt at the end of 2008. These effects can be partially seen by comparing monthly unemployment rates between 2008 and 2009 (through August, the latest month available) which are shown in Table 3.13-4. Table 3.13-4 shows that in August 2009, Skamania County's unemployment rate was 3.1 percentage points higher than for the same month in 2008. The comparable figures are 2.9 percentage points for Klickitat County and 3.3 percent for Hood River County.

Table 3.13-4 Monthly Unemployment Rates, 2008 and 2009

	Skamania County		Klickitat County		Hood River County	
Month	2008	2009	2008	2009	2008	2009
January	8.9	14.5	9.2	12.7	5.5	8.5
February	9.5	14.2	8.9	12.3	5.2	8.9
March	8.5	15.1	7.0	12.9	5.0	9.6
April	7.8	14.2	7.3	12.1	4.6	9.6
May	7.1	11.9	7.2	9.9	5.1	10.6
June	7.8	12.0	6.5	10.3	5.6	9.2
July	7.4	11.7	7.2	8.2	5.4	7.9
August	8.3	11.4	6.2	9.1	6.2	9.5
September	6.2	N/A	5.4	N/A	4.7	N/A

October 7.0 N/A 5.9 N/A 4.2 N/A
November 9.0 N/A 7.3 N/A 5.4 N/A
December 11.7 N/A 9.6 N/A 6.3 N/A

Source: BLS (2009).

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Project Area

The project site is used for long-term timber production. Although the number of jobs in the project area is unknown, approximately 400 homes or businesses exist within three miles of the project site, and approximately one-third of these homes or businesses are located in Willard.

Minority and Low-Income Populations

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, states that each federal agency shall identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low income populations. The Order further stipulates that the agencies conduct their programs and activities in a manner that does not have the effect of excluding persons from participation in, denying persons the benefits of, or subjecting persons to discrimination because of their race, color, or national origin.

As stated above, the 2000 Census indicated that Skamania County had a minority population that consisted primarily of Hispanic/Latino persons which accounted for only 11 percent of the total population in that county. Additionally, of the total population make-up for Skamania County, 13 percent were living below the poverty level as indicated by the 2000 Census.

Comment: So, where is the Environmental Justice analysis for the region and the cumulative impacts to the region from the energy production activities of BPA and SDS Lumber and all the other energy producers in the region? Environmental Justice not only addresses impacts to populations but it addresses environmental impacts. Why are wind farms being located in low population, rural areas when the energy they produce mainly benefits large, urban areas that are not even located in the region? Where is the environmental justice in using and abusing rural areas that produce food, clean water, and other resources for energy production for urban areas? There is no environmental justice in this!

3.13.1.4 Public Finance and Fiscal Conditions

Due to the location of the proposed project within Skamania County and Washington State, these two jurisdictions would be the primary beneficiaries of tax revenues related to project construction and operation. Washington State and Skamania County collect several types of taxes:

• Payroll taxes. Washington State collects payroll taxes for workers' industrial insurance,

unemployment compensation, and other purposes. While Counties do not directly benefit from payroll taxes, these revenues have a direct beneficial impact to Skamania County residents.
• Business and occupation taxes. Business and occupation taxes, which are paid on the gross receipts of business activities, are the second-largest revenue source for Washington State. Skamania County does not levy a business tax, so although it does not benefit directly from Business and occupation taxes paid by businesses within Skamania County, the state as a whole would benefit.
• Retail sales and use tax. In Washington State, the first 0.5 percent of retail sales tax goes to the local county.
• Property tax. Skamania County collects property taxes for taxing districts within the County. The project site is within Taxing District 109, for which the total assessment rate is $8.026839/$1,000 assessed value. This revenue is split between the County, Washington State, and the local taxing district.

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In 2008, Skamania County started with a beginning fund balance of $25.6 million, and accrued revenues of $13.7 million that year. The largest revenue fund categories were intergovernmental revenues (43 percent), general property taxes (21 percent) and charges and fees for services (10 percent). Expenditures in 2008 were $19.4 million. The largest expenditure categories were law and justice services (26 percent), general government (20 percent), transportation (19 percent) and natural resource (10 percent) (Table 3.13-5).

Dollars in each of the revenue and expenditure categories are distributed among the General Fund, Special Revenue Fund, Debt Service Fund, Capital Project Fund and Enterprise Fund. Approximately 54 percent of all revenue dollars are in the General Fund, and 39 percent of the revenue dollars are in the Special Revenue Fund. Most of the expenditure dollars were in the General Fund (57 percent) and the Special Revenue Fund (37 percent).

The project site is within Taxing District 109, for which the total millage rate24 is $8.026839/$1,000 assessed value. The millage rate is broken down in Table 3.13-6.

Table 3.13-5 Skamania County Revenues and Expenditures, 2008

Category Amount
General Property Taxes 2,814,374
Sales & Use Taxes 362,938
Other Local Taxes 614,543
Licenses & Permits 182,553
Charges & Fees for Services 1,331,765
Interest & Investment Earnings 1,228,335
Fines & Forfeits 478,440
Rents, Insurance Premium, Internal Contributions, Miscellaneous 840,764
Intergovernmental Revenues 5,855,309
Total Revenues 13,709,021

Beginning Fund Balance 25,623,475
Law & Justice Services 5,081,012
Fire & Emergency Services 764,603
Health & Human Services 1,649,067
Transportation 3,612,827
Natural Resources 1,858,521
General Government 3,933,882
Utilities 744,672
Capital 1,744,959
Debt Service-Interest 25,000
Total Expenditures 19,414,543

Source: WSA (2009).

24The millage rate is the amount per $1,000 of property assessed value that is used to calculate taxes on
property.

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Table 3.13-6
Breakdown of Taxing District No. 109 Millage Rate

Category Amount
Current Expense 1.218965
Mental Health 0.012500
Developmental 0.012500
Veteran's Relief 0.011250
County Road 1.262288
Hospital and EMS District 0.643625
State Treasurer (State School Fund) 2.033112
Cemetery District 0.074757
Library District 0.338660
Excess Levy: School District 405 (Klickitat County), Maintenance and Operations 1.640058
Excess Levy: School District 405 (Klickitat County), Capital Projects 0.163270
Excess Levy: School District 405 (Klickitat County), Bond 0.281641
Public Utility District 0.334213
Total 8.026839

Source: L. Moore (personal communication).

3.13.2 IMPACTS
3.13.2.1 Proposed Action
Impacts of the proposed project are divided between construction and operation.

Construction

Business and Economic Impacts

Design and construction of the proposed project is expected to begin in 2011. Operation is expected to commence by 2012. During the estimated one-year construction period (excluding engineering, design, specifications, and survey), approximately 330 full-time and part-time workers would be employed at some point during construction. Some of these jobs would not last the entire construction period. The on-site construction work force would peak at approximately 265 workers over the construction period and average 143 workers over the 12 months (Table 3.13-7).

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Table 3.13-7
Estimated Quarterly Construction Personnel

Month Before Commercial Operation
Estimated Number of
Construction Personnel On Site
14 15
13 15
12 90
11 90
10 190
9 190
8 265
7 215
6 165
5 190
4 100
3 100
2 100
1 25
0 25
Cleanup 25
Average (months 1 – 12) 143
Peak (months 1 – 12) 265

Source: A. Barkley (personal communication)

An estimated 65 to 75 percent of the construction labor force would likely be hired from outside the tri-county area, and 25 to 35 percent would be residents of the tri-county area including Skamania, Klickitat, and Hood River counties (A. Barkley, personal communication).25 (This estimate is based on the relative size of the labor force in the tri-county area compared to larger labor forces in metropolitan areas that are farther away.) This would translate to 66 to 93 (peak) and 36 to 50 (average) workers from the tri-county area and 172 to 199 (peak) and 93 to 107

(average) workers from outside the tri-county area, primarily the Portland-Vancouver metropolitan area. At peak, the construction workforce would represent 32 to 45 percent of the estimate size of the construction workforce in Skamania County in 2007 (BEA 2009).

The total cost of construction is $150 million. Total payroll costs, including fringe benefits and other labor overhead costs, are projected to be approximately $18 million, of which approximately $4.5 million (25 percent) is expected to be earned in the tri-county area (A. Barkley, personal communication), based on the assumption by the Applicant that approximately one-quarter of the construction workforce would already live in the tri-county area.

Non-labor costs are estimated to be $132 million. Construction materials, services and equipment leasing associated with construction are projected to total approximately $13.2 million (10 percent of total non-labor costs) (A. Barkley, personal communication). The Applicant estimates that most of this spending would take place in the tri-county area.

25This information, along with estimated average and peak workforce size and number of full-time and part-time jobs related directly to project construction, are project-specific estimates provided by the Applicant.

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Spending by suppliers, local project workers and households would benefit the retail trade and services sector, as well as other sectors of the local economy. To estimate the value of these indirect and induced impacts, assumptions specific to project construction were provided by the proposed project owner (A. Barkley, personal communication), and were used as inputs to the IMPLAN regional input/output model. These assumptions are as follows and were also mentioned above:

- Local non-labor construction expenditures would be approximately $13.2 million
- Labor income earned by local residents would be approximately $4.5 million
- Approximately one-quarter of the workforce (36 workers, taken as a percentage of the average workforce size of 143 workers) would be current residents of the local area

Based on these assumptions and using IMPLAN modeling software, indirect and induced value added from construction is estimated to be approximately $3.9 million.26 Project construction would result in 71 indirect and induced jobs (Table 3.13-8). Total direct, indirect and induced value added would be an estimated $8.5 million. Total employment (direct, indirect and induced) would be an estimated 107 full-time and part-time jobs. These effects would continue throughout the construction period.

Table 3.13-8
Employment Impacts of Construction

Sector
Number of
Direct Jobs

Number of
Indirect
Jobs
Number of
Induced
Jobs
Total Number
of Jobs
Agriculture, Forestry, Fish & Hunting 0 1 0 2
Mining 0 0 0 0
Utilities 0 0 0 0
Construction 35 1 0 36
Manufacturing 0 35 11 46
Wholesale Trade 0 0 0 0
Transportation & Warehousing 0 0 6 6
Retail trade 0 1 2 3
Information 0 5 5 10
Finance & insurance 0 1 2 3
Real estate & rental 0 1 0 1
Totala 35 45 26 107

Source: IMPLAN (2008).
North American Industry Classification System categories that are 0 are not shown.

a. Totals may not add due to rounding.
26 Value added is the difference between the proposed project's total output and the cost of the proposed
project's inputs. For the construction industry in the tri-county area, value added is comprised primarily of
employee compensation (IMPLAN 2008). Value added is a measure of the contribution to output in the
tri-county area made by project construction.

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Economic effects would occur beyond the tri-county area in the form of jobs, income and spending. These effects would occur due to spending (attributable to project construction) that would occur outside the tri-county area. Although these effects were not quantified as part of this analysis, 65 percent to 75 percent of the construction workforce would live in areas outside the tri-county area; therefore, spending would likely increase in the areas where these employees reside. Also, non-labor construction procurements that occur in areas outside the tri-county area (estimated to be approximately $119 million) would result in economic benefits. Areas that benefit could include the metropolitan area closest to the proposed project (Portland-Vancouver) as well as other areas in the Northwest and the nation as a whole.

Comment: So, Skamania County wouldn't really benefit. It's the metro areas that would get the lions share of benefit. What are these "other areas in the Northwest"? How would the nation benefit from wind turbines scattered along the NSA? SDS cannot make such a blanket statement about the nation benefiting, without a lot of supporting environmental and economic data—data that is not included in the DEIS.

Population and Housing Impacts

Up to an estimated 15 percent of the construction workforce would be specialized craftsmen originating outside of Washington and Oregon (A. Barkley, personal communication). These workers would likely have relatively short assignments, and few would be expected to bring their families to the area. The remaining 85 percent of non-local workers would likely come from the Portland-Vancouver area. Assuming as a worst-case scenario that one-third of the workers from the Portland-Vancouver metropolitan area would stay in temporary lodging near the project site Monday through Friday, and the specialized, temporary staff also would require lodging, the population that would require housing in the tri-county area is expected to range from 75 workers to 85 workers during peak construction. These construction workers would be expected to seek temporary accommodation in the general vicinity of the project site, and to use motels, trailers, campers, and other forms of transient housing. Given that 325 of the approximately 1,082 hotel rooms or RV campsites within 25 miles of the project site would be available at any one time, the out-of-area workers would not cause a substantial impact to the availability of transient accommodation in the project vicinity. The construction phase of the proposed project is not expected to affect median housing values, median gross rents, or new housing construction.

Fiscal Impacts

Overall fiscal impacts of project construction are expected to be positive, based primarily on increased employment and spending in the local economy.

Sales Tax Revenue. The total cost of construction is estimated to be approximately $150 million. Non-local procurements would include wind power generation equipment purchased from various domestic and foreign suppliers. Depending on legislation currently under consideration in the state legislature, state sales and use tax may be levied only on procurements that are not directly related to electricity generation. Should the state sales tax exemption for wind power be extended, capital equipment such as turbines, transformers, transmission cables, and substation equipment would not be taxable.

Local procurements are estimated to be 10 percent of total procurements ($13.2 million) (A. Barkley, personal communication). An estimated 90 percent of local procurements would be directly related to electricity generation, and would not be subject to sales tax should the state sales tax exemption for wind power be extended. Taxable sales due to project construction is therefore estimated to be approximately $1.32 million, resulting in $92,400 in sales and use tax

revenue using the sales tax rate (7.0 percent) for the project site, which is located in unincorporated Skamania County.

Most of the sales tax revenue due to project construction would accrue to Skamania County because the project site is located in Skamania County. However, if taxable construction supplies are purchased in another Washington State county (Klickitat County, for example), and not shipped to the project site, the county in which the purchase occurred would receive the county portion of the sales tax revenue on that purchase. Of the total estimated $92,400 in sales tax revenue, Washington State would receive $85,800 and Skamania County (or the counties where materials or supplies are purchased and not shipped to the site) would receive $6,600.

If a portion of taxable construction materials or supplies are purchased in Hood River County, the owner must pay use tax to Washington State, in which case the tax would go to Washington State (6.5 percent) and Skamania County (0.5 percent). Sales tax revenue would not accrue to Hood River County. Klickitat County could receive a portion of the sales tax revenue, but as stated above, the majority of the county portion is expected to go to Skamania County.

In addition to the $92,400, the proposed project would result in modest increases in sales tax revenues due to local purchases by construction workers.

Property Values and Property Tax Revenue. Construction activities are not likely to adversely affect property values in residential and commercial areas near the project site because the construction period would be relatively short. Construction of the proposed project would not affect property tax revenues.

County Expenditures. Construction of the proposed project would require that many construction vehicles, including trucks with over-size and over-weight loads, share the existing roadway network with the general public. Skamania County could experience a small increase in traffic-related costs due to the need for permitting and control measures related to these vehicles, particularly for the over-size loads. Some accidents could occur that would be directly attributable to construction traffic, but any increase is expected to be minimal.

The County could experience minor to negligible increases in the cost of public services such as fire suppression, law enforcement, governmental services, parks and recreation, and hospital costs during construction due to the additional traffic and the temporary population. These are not expected to be significant in the context of the County as a whole.

Operation

Business and Economic Impacts

Operation of the proposed project would result in a positive economic impact to Skamania County, the tri-county area, and the State of Washington due to increased tax revenues, employment, and local expenditures.

Project operation would require eight to nine full-time or part-time Operations and Maintenance

employees. Approximately 75 percent of employees (7 employees) would originate from the tricounty area (A. Barkley, personal communication). An additional temporary workforce with

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appropriate skills would be utilized during major maintenance or other non-routine operational work. Efforts would be made to hire local individuals to staff the proposed project as much as practicable.

The estimated gross payroll, including fringe benefits and other payroll overhead for the operational workforce would be $1.5 million, or an average annual labor cost of $167,000 to $188,000 per employee. Subtracting approximately 25 percent to estimate benefits and overhead, the implicit wage would be within 10 percentage points of the 2007 standard industrial wage for construction workers in Skamania County (IMPLAN 2009).

In addition to the direct employees, project operation would result in indirect and induced employment, for an estimated total of 12 permanent jobs resulting from the proposed project (Table 3.13-9).

Table 3.13-9
Employment Impacts of Operation

Sector
Number of Jobs
Direct Indirect Induced Total
Ag, Forestry, Fish &
Hunting 0 0 0 0
Mining 0 0 0 0
Utilities 7 0 0 7
Construction 0 0 0 0
Manufacturing 0 0 2 2
Wholesale Trade 0 0 0 0
Transportation &
Warehousing 0 0 1 1
Retail trade 0 0 0 0
Information 0 0 1 1
Finance & insurance 0 0 0 0
Real estate & rental 0 0 0 0
Totala 7 1 4 11

Source: IMPLAN (2009).
North American Industry Classification System categories that are 0 are not shown.

a. Totals may not add due to rounding
Using IMPLAN regional economic modeling software for the power generation and supply industry in Skamania, Klickitat, and Hood River Counties, a wind power facility employing nine

full-time workers would have a gross annual operating cost valued at approximately $3.75 million. This would include direct purchases from suppliers (including fuels, maintenance supplies and services, retail goods and professional services).

An alternative methodology for calculating job impacts is used by the Renewable Energy Policy Project, which estimates that every megawatt of installed wind capacity creates about 4.8 job-years of employment, including both direct and indirect jobs (REPP 2009). Using this methodology, the proposed project, which would produce approximately 75 MW of electricity, would result in 360 job-years or 12 jobs per year for the 30 year life of the proposed project.

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As stated in Chapter 1, the purpose of the Project is to help meet the future need for energy resources while at the same time enabling SDS to further diversify its business through a technically and economically feasible project. When SDS started in 1946, there were 26 employees in its original crew. This number grew to a high of 450 employees during the 1970s when logging and lumber production were at a peak. Production has since slowed tremendously, as the supply of timber from national forests has sharply declined due to environmental legislation. For this reason, many of the mills in Skamania County have closed down. SDS was able to survive the crises and changes of the last 30 years and no longer relies on timber from national forests. SDS has scaled back operations, yet today SDS is one of the largest employers in Klickitat County, employing 325 people during busiest production times.

SDS has remained viable during changes in the market through expanding and diversifying its enterprises to include marine in 1984 and power produced in its steam-operated power plant, which creates energy from wood waste, a renewable, organic resource. The the Project is intended to provide another means of diversifying the holdings of SDS to ensure a continuation of a resource-based work force in Skamania County, and to create new construction and operation jobs at a time when jobs in Washington State are being lost. As shown in Table 3.139, the proposed project would create twelve new full-time jobs in Skamania County,

Comment: It is not EFSEC's job to "provide another means of diversifying the holdings of SDS" by condoning or approving this proposed wind farm! Throughout this DEIS, SDS has inserted the economic benefits to itself and its business model. There is very short shrift given to the environmental impacts and cumulative impacts from this proposal and all the other energy production actions that are ongoing in the region. This does not make for an adequate DEIS!

Population and Housing Effects

Of the nine permanent employees for the proposed project, seven are assumed to originate from the tri-county area, and two would be assumed to migrate to the area from other locations. Assuming an average household size of 2.6 persons, the population in the area could increase by approximately five people, and two households. At the most recent average housing vacancy rate available for Skamania County (16.8 percent), more than 900 housing units would be available in Skamania County alone. Thus operation of the proposed project would not impact

housing availability or cost.

The proposed project would not displace any minority or low-income populations. The proposed project would be constructed on private land currently used for forest production, and no residents would be displaced.

Fiscal Impacts

Property Values. Local communities near proposed wind turbine locations have expressed concern that constructing wind turbines would detract from views, which would in turn decrease their property values. A number of studies have been performed to determine the impact of wind power projects on property values. These include the following:

• The Lawrence Berkeley National Laboratory prepared The Impact of Wind Power Projects on Residential Property Values in the United States: A Multi-Site Hedonic Analysis in December 2009 (Hoen et al. 2009). Researchers collected data on almost 7,500 sales of single-family homes within 10 miles of 24 existing wind facilities in nine different US states. None of the models uncovered conclusive evidence of the existence of any widespread property value effects that might be present in communities surrounding wind energy facilities. Neither the view of the wind facilities nor the

distance of homes to those facilities was found to have any consistent, measurable, and

significant effect on the selling prices of those homes (Hoen et al. 2009).
• In 2006, ECONorthwest prepared Economic Impacts of the Kittitas Valley Wind Project (the Kittitas Study) for the Economic Development Group of Kittitas County, Washington. This report involved a survey of tax assessors in counties (other than Kittitas County) with wind projects to determine the potential effects of wind farms on property values. The Kittitas Study also conducted a review of the available academic literature for additional information on property value effects. The finding was that views of wind turbines will not negatively impact property values (ECONorthwest 2006).
• The Renewable Energy Policy Project prepared The Effect of Wind Development on Local Properties (REPP 2003). For this study, the project compiled a database that included every wind development that came on-line after 1998 with 10 MW installed capacity or greater. For all projects for which sufficient data was available, REPP conducted a statistical analysis to determine how property values changed over time in the viewshed and in the comparable community. The statistical analysis provided no evidence that wind development has harmed property values within the viewshed (REPP 2003).
• Responses to comments published as part of the 2009 Desert Claim Wind Power Project Final Supplemental Environmental Impact Statement state "the Final EIS referenced a 2003 report published by Kittitas County that summarized the existing literature on the effect of wind power projects on property values." The response states that the study, which was prepared by Huckell/Weinman Associates, concluded that wind power facilities have not diminished the value of surrounding properties (EFSEC 2009).

• A literature review to assess the question of whether wind turbines in rural communities have the potential to affect residential property values was completed as part of the Lower Snake River Wind Energy Project Draft EIS (Ecology & Environment 2009). The Draft EIS reported that in 2008 Hoen and Wiser found (1) no statistical evidence that homes near wind facilities are stigmatized by those facilities, (2) no statistical evidence that homes with a view of wind turbines have different values than homes without such views, and (3) no statistical evidence that homes within 0.25, 0.5 and 1 mile of the turbines sell for different values than those located further away. In 2006, while assessing the impacts of a 20 turbine, 30 MW windfarm's visibility on residential property values in Madison County, New York, Hoen found no statistically significant relationship between either proximity to or visibility of the windfarm and the sale price of homes (Ecology & Environment 2009, Hoen 2006).

In summary, the results of these studies and literature reviews are that no statistical evidence exists that wind development has a harmful effect on property values within the viewshed. Therefore, property value impacts are not expected as a result of the proposed project.

Sales Tax Revenues. Sales, use and other indirect business taxes to state and local governments attributable to project operation are estimated at approximately $50,000 per year. This estimate

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is the sum of the estimated sales and use tax revenue from (1) the procurement of supplies and materials for the purpose of project operations, and (2) new employee spending in the area. The sales tax revenue would be split between Washington State (approximately $46,000) and Washington counties, primarily Skamania and Klickitat counties ($4,000).

The portion of non-labor annual operating cost that is not directly related to electricity production (10 percent of $2.3 million, or approximately $230,000) would be taxable (A. Barkley, personal communication). Applying the Skamania County sales and use tax rate (7.0 percent) to this amount results in an estimated $15,800 in tax revenue.

New employee spending is estimating by taking the total labor income (direct, indirect and induced) from the IMPLAN operations model (approximately $977,000 per year) and assuming that 70 percent of this amount is disposable income and 70 percent of disposable income is spent in local Washington counties. Based on these assumptions, related sales and use tax revenue would be approximately $34,000.

With the proposed project, the project site would continue to be managed as commercial forest, excluding the area containing the turbine strings and roads. The project site covers 1,152 acres. Table 1-1 shows that the maximum area developed for the wind turbine foundations, connecting roadways and transmission lines would be 384 acres (approximately 33 percent of the 1,152-acre site). As specific locations are determined for turbines and other project components, the 384acre area would be reduced. The areas that would experience permanent impacts and temporary construction impacts of the proposed project total approximately 108 acres (approximately nine percent of the 1,152-acre site). The 56-acre area that would be removed from timber production for the life of the proposed project is approximately five percent of the total project site. The

opportunity cost of taking this land out of timber production would include tax revenues for Skamania County and Washington State, and would be countered by the sales tax revenues resulting from wind energy sales.

Property Tax Revenue. The proposed project would have an estimated value of $87.5 million, which would represent an increase of 6.5 percent in assessed value in the County. Using the average 2008 property tax rate for Skamania County of $8.36/$1,000 assessed value (WDOR 2009), the increase in property tax revenue to the County would be $731,500. This would represent an annual revenue increase of 7.6 percent compared to the $9.6 million in property tax collected in calendar year 2007. Although Washington State limits property tax increases to one percent of the previous year's levy, new construction does not apply, and would be added on after the one percent is added, using the previous year's property tax rate (V. Torres, personal communication). The increase in property tax revenue would begin one year after construction is complete, and continue for the life of the proposed project. However, to the extent the wind turbines depreciate over time, the assessed value of the turbines and therefore the property tax revenue also would decrease.

Comment: Skamania County collects less than $3,000,000 per year in property tax. What does the $9.6 million in property tax, above, refer to? What is the turbine depreciation over time? How much would the property tax revenue decrease over the 30 year predicted lifespan of the turbines and the project?

Additional property tax revenue would be distributed to a variety of County departments. Assuming that annual tax revenues of $731,500 would be distributed in the same manner as current property tax distributions, funds receiving the most revenue would be the State School Fund ($185,281), School District 405 Maintenance and Operations ($149,461), the County Road

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Comment: Skamania County's school districts are #2 and 303. Whose district are they talking about when they talk about School District 405? Is that White Salmon and Binger, in Klickitat?

fund ($115,035), and the Current Expense fund ($111,086). A portion of the State School Fund would be returned to Skamania County for Skamania County schools.

Property tax revenues would be higher to the extent that increased wages and economic activity in the County resulted in higher valued properties.

A different methodology was used by the National Wind Coordinating Committee, which estimates an increase of $10 to $14 in property taxes for each $1,000 investment (NWCC 2009). Using this approach, the $17.7 million dollars spent locally (labor and non-labor cost) would result in approximately $177,000 to $250,000 in additional property taxes. This estimate is lower than the forecast given above; however, the NWCC estimate is based on industry averages, while the first estimate is based on project-specific data.

County Services. The addition of five residents would cause a negligible increase in demand for and cost of public services. These would also be outweighed by the substantial economic benefits of the proposed project to the County.

Comment: Although a previous table purports to show 12 permanent jobs resulting from this proposed wind farm, in the statement above "the addition of five residents" would appear to support the number of permanent jobs as just FIVE, as stated by Mr. Spadaro, SDS's president and chief proponer for this project, in several meetings. Which number is correct? Why the discrepancy?

Minority and Low-Income Populations. Environmental justice addresses whether the Proposed Action would disproportionately impact disadvantaged populations such as low-income and minority residents. The population in the study area (Skamania and Klickitat Counties, Washington; and Hood River County, Oregon) is predominantly white (non-Hispanic/Latino) and a review of data from the 2000 Census did not identify any specific geographic concentrations of minority groups. The Proposed Action would not be expected to disproportionately affect any low-income populations, based on per capita income information at the Census Tract level. Therefore, there would be no disproportionately high or adverse effects to minority or low income groups.

Project Decommissioning

In compliance with WAC 463-72, Site Restoration and Preservation, the Applicant will provide EFSEC with an initial site restoration plan at least ninety days prior to the beginning of site preparation. The plan will address site restoration that would occur at the conclusion of the proposed project's operating life (estimated to be 30 years), and restoration in the event the proposed project is suspended or terminated during construction or before it has completed its useful operating life. The plan will include or parallel a decommissioning plan for the proposed project.

The initial site restoration plan will be prepared in sufficient detail to identify, evaluate, and resolve all major socioeconomic issues presently anticipated, including potential impacts to population, housing and employment. If socioeconomic impacts are anticipated to occur as a result of site restoration and project decommissioning, mitigation measures will be proposed as part of the plan.

3.13.2.2 No Action Alternative
Under the No Action Alternative, the wind power project would not be built. Socioeconomic conditions in the area would continue in their present condition.

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3.13.3 MITIGATION MEASURES

The following mitigation measures are identified to avoid, reduce, or compensate for potential project impacts to any socioeconomic factors during construction or operation of the proposed

project.

• Impact to the local economy and social structure of the proposed project is expected to be beneficial, in the form of additional jobs, increased sales, and increased tax revenues. Temporary increases in population during construction are likely to be minor in view of the availability of housing, transient accommodations, and other public services in the region.
• Ensure that the applicant uses the local labor pool to the greatest extent possible; construction contractors would be required to advertise positions locally and to employ local workers to the greatest extent possible.

3.13.4 UNAVOIDABLE ADVERSE IMPACTS

The proposed project would result in beneficial impacts, primarily from employment during construction and operation. Minimal adverse impacts are expected.

3.13.5 REFERENCES

Barkley, Allen. Project Owner Representative. Email communication with Katie Carroz, Carroz Consulting LLC. December 8, 2008 and December 14, 2009.

Bureau of Economic Analysis (BEA). 2009. Regional Economic Information System Table CA05 Personal income and detailed earnings by industry; Table CA25 Total employment by industry; Table CA1-3 Personal income, population, per capita personal income; Tables SA51-52 and SA1-3, Disposable personal income and personal income. Accessed December 3, 2009 at: http://www.bea.gov/regional/reis/default.cfm#step3. Accessed December 22, 2009 at: http://www.bea.gov/regional/spi/.

Bureau of Labor Statistics (BLS). 2009. Unemployment rates by county, not seasonally adjusted. Accessed 2009 at:

http://data.bls.gov/map/servlet/map.servlet.MapToolServlet?state=41&datatype=unemployment &year=2006&period=M13&survey=la&map=county&seasonal=u.

Ecology & Environment, Inc. 2009. Socioeconomic Report for the Lower Snake River Wind Energy Project, prepared for Renewable Energy Systems Americas Inc. July 23.

ECONorthwest. 2006. Economic Impacts of the Kittitas Valley Wind Project. http://www.econw.com/consulting/subtopics?topic=energy&subtopic=renewable_energy.

Energy Facility Site Evaluation Council (EFSEC). 2009. Desert Claim Wind Power Project Final Supplemental Environmental Impact Statement Comments and Responses, Chapter

4. November 6. http://www.efsec.wa.gov/Desert%20Claim/FSEIS/4.0%20Comments.pdf.

Golubcow, Molly. 2006a. "Tourism That Blows." Atlantic City Weekly. August 9.

———. 2006b. "Manitoba's First Wind Farm a Tourism Hotspot." July 24. Accessed at: www.mb.gov.ca.

Hoen, B., R. Wiser, P. Cappers, M. Thayer, and G. Sethi. 2009. The Impact of Wind Power Projects on Residential Property Values in the United States: A Multi-Site Hedonic Analysis. December. http://eetd.lbl.gov/ea/ems/re-pubs.html.

Hoen, Ben. 2006. Impacts of Windmill Visibility on Property Values in Madison County, New York. April 30.

IMPLAN. 2008. Regional economic impact model specific to the three-county area. Modeled by Carroz Consulting LLC.

———. 2009. Regional economic impact model specific to the three-county area. Modeled by Carroz Consulting LLC.

Moore, Leslie. Skamania County Assessor's Office. Personal communication with Katie Carroz, Carroz Consulting LLC. February 5, 2009.

National Wind Coordinating Committee (NWCC). 2009. Wind Energy Series, January 1997. Accessed January 25, 2009 at: http://www.nationalwind.org/publications/wes/wes05.htm.

Oregon Employment Department (OED). 2009. Oregon Labor Market Information Service (OLMIS). Unemployment Rates. Accessed January 25, 2009 at: http://www.qualityinfo.org/olmisj/AllRates.

Portland State University Population Research Center (PSUPRC). 2009. Preliminary 2009 Population Estimates as of July 1, 2008 and 2008 Oregon Population Report (2000 estimates). Accessed December 2, 2009 at: http://www.pdx.edu/prc/.

Renewable Energy Policy Project (REPP). 2003. The Effect of Wind Development on Local Property Values. May. Accessed December 28, 2008 at: http://www.repp.org/articles/static/1/binaries/wind_online_final.pdf.

———. 2009. Website: Wind Energy and the Economy. Accessed February 3, 2009 at http://www.awea.org/faq/wwt_economy.html.

Torres, Valerie. Property Tax Specialist, Washington State Department of Revenue. Personal communication with Katie Carroz, Carroz Consulting LLC. December 10, 2009.

TravelWashington. 2008. Travel Resource for Washington State. Accessed December 12, 2008 at: http://www.travel-in-wa.com/.

US Census. 2009. Poverty Thresholds 2000. Accessed December 2, 2009 at:

http://www.census.gov/hhes/www/poverty/threshld/thresh00.html.

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Washington Employment Security Department (WESD). 2008. Labor Market and Economic Analysis. Resident Labor Force and Employment in Washington State and Labor Market Areas. Accessed January 25, 2009 at: http://www.workforceexplorer.com/cgi/dataanalysis/?PAGEID=94&SUBID=149.

Washington State Auditor (WSA). 2009. Washington State Auditor, Local Government Financial Reporting System. Accessed February 3, 2009 and December 8, 2009 at: http://www.sao.wa.gov/applications/lgfrs/.

Washington State Department of Revenue (WDOR). 2009. Tax incentives for renewable energy. Accessed January 25, 2009 at: http://gis.dor.wa.gov/docs/pubs/incentives/renewableenergy.pdf.

Washington State Office of Financial Management (WOFM). 2009. Washington State Office of Financial Management. Official April 1, 2008 Population Estimates. April 1, 2009 Population of Cities, Towns, and Counties Used for the Allocation of Selected State Revenues. Accessed December 2, 2009 at: http://www.ofm.wa.gov/pop/april1/default.asp.

Woodall. 2008. Woodall's Camping Directory Website. Accessed December 12, 2008 at http://www.woodalls.com/.

3.14 CUMULATIVE IMPACT ANALYSIS

"Cumulative impacts" are the impacts on the environment which result from the incremental impact of an action, such as this Proposed Action, when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 C.F.R. 1508.7).

This section describes existing development in the vicinity of the proposed project, as well as current and reasonably foreseeable future development planned for the area, and analyzes and describes potential cumulative impacts. The past, present, and reasonably foreseeable future actions provide the context to assess the cumulative impacts of these actions in combination with the Proposed Action.

Comment: Cumulative impacts analyses are not done on a project by project basis. They are done on a regional basis, especially when there are regional impacts from these types of proposals! BPA is a regional provider of energy and therefore must do a regional cumulative impacts report detailing the cumulative environmental impacts of all its activities! Certainly SDS Lumber is also obliged to do a cumulative impacts and effects analysis of ALL its regional activities, too. SDS has a quarry in White Bingen that recently had some environmental issues. SDS is proposing a huge condo development on the shores of the

Columbia River, in the National Scenic Area, that would result, if it comes to pass, in a large increase in population and a commensurate increase in local resources depletion. SDS has stated that it wants to also build a resort in Cascade Locks, OR, in the heart of the NSA. Another impact on local resources such as water and air quality, the Columbia River, quality of life, transportation, etc. SDS and BPA have failed to follow the CEQ's Considering Cumulative Effects : Under the National Environmental Policy Act Handbook in analyzing cumulative regional impacts and this is a very disastrous fatal flaw in this increasingly inadequate DEIS.

3.14.1 EXISTING DEVELOPMENT

The nature and extent of existing development in the vicinity of the proposed project is largely described earlier in this chapter in the sections for each environmental resource. The general project area is characterized by agriculture, commercial forestry, rural residential development, and a small number of commercial enterprises.

The proposed project site is located approximately two miles north of the Columbia River and directly north of the Columbia River Gorge National Scenic Area. The National Scenic Area extends along the Columbia River for about 85 miles and includes 292,500 acres in parts of three Oregon and three Washington counties. Although both the project site and the proposed access road are located completely outside the Scenic Area, the proposed project area does extend south

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to the northern boundary of the Scenic Area. The Gifford Pinchot National Forest is located north of the project site.

On the Washington side of the Columbia River, land use is predominantly commercial forestry and residential in numerous small, unincorporated communities. There are approximately 400 residences and businesses within three miles of the project site (Figure 3.8-1). There is some limited agriculture, mostly pear and apple orchards recently augmented with some wine grape vineyards, located within the Columbia River Gorge National Scenic Area. On the Oregon side of the Columbia River, land use within the Scenic Area is predominantly commercial timber production and residential. South of the Scenic Area, land uses include commercial forestry, agriculture, and some residential. The primary Oregon orchard crops are pears, apples, and cherries.

Portions of the Project would be visible to drivers along I-84, which is located on the Oregon side of the Columbia River. For the purpose of assessing cumulative impacts to visual resources, views of other wind projects from I-84 were considered. I-84 extends for a distance of approximately 127 miles from Cascade Locks, Oregon (southwest of the project site on the Oregon side of the Columbia River) to the intersection with I-82, which leads north to the Tri-Cities. There are ten existing wind projects along this segment, all located within a distance of approximately 70 miles east of the Project site (to approximately Arlington, Oregon).27 These ten projects could potentially be viewed by drivers along I-84 within a driving time of approximately one to 1.5 hours.

From Arlington, I-84 continues on in an easterly and the southeasterly direction, terminating at Pendleton, Oregon. There are no existing wind energy projects in this area. Farther east, there are wind energy generation projects southeast of the Tri-Cities, and west and southwest of Walla Walla (in both Washington and Oregon), more than 80 additional miles east-northeast. These were considered too remote for this analysis.

All of the ten existing wind energy projects are located east of the Columbia River Gorge National Scenic Area (Figure 3.14-1). Four are located north of the Columbia River in Washington, and six are located south of the river in Oregon. In contrast to the steep terrain and forested vegetation of the Project site, the ten operating wind projects located to the east are on lands with rolling hills, open vistas, and little or no vegetation. The projects that were considered include:

- Windy Point, 137 MW wind project west of Maryhill, Washington
- Biglow Canyon I, 125 MW wind project in Sherman County, Oregon
- Klondike (I – IIIA), 499-MW wind project in Sherman County, Oregon
- Hay Canyon, 101-MW wind project in Sherman County, Oregon

27 See map at http://www.nwcouncil.org/maps/power/Default.asp.

- Goodnoe Hills, 94-MW wind project north of the Columbia River between Goldendale and Roosevelt, Washington
- Big Horn, 199-MW wind project in Klickitat County, Washington
- White Creek, 205-MW wind project near Roosevelt, Washington
- Leaning Juniper, 101-MW wind project near Arlington, Oregon
- Rattlesnake Road, 103-MW wind project near Arlington, Oregon
- Wheat Field, 97-MW wind project near Arlington, Oregon

3.14.2 REASONABLY FORSEEABLE FUTURE DEVELOPMENT

Reasonably foreseeable future development generally includes those actions currently underway, formally proposed or planned, or highly likely to occur based on available information. Various sources, including searches in the fall of 2009 of the web sites of the surrounding Skamania, Klickitat and Hood River Counties, Columbia River Gorge Commission, WSDOT, Oregon Department of Transportation, EFSEC, the Oregon Department of Energy, and the Ports of Skamania County, Klickitat County, The Dalles, and Cascade Locks, were made to obtain information about any current and potential future development in the project vicinity. Reasonably foreseeable development that may occur in the vicinity of the Proposed Action could include both other wind projects and roadway projects. (See Figure 3.14-1 for the general locations of this potential development.)

Columbia River Gorge National Scenic Area
Figure 3.14-1
Job No. 33758687 Existing and Proposed Development

In addition to the potential for cumulative visual impacts, two proposed projects in the project vicinity were identified as having a potential for other cumulative impacts with the Project. These projects are:

• Middle Mountain Wind Project. Hood River County is proposing this 9-MW project, which would be located approximately 10 miles south of Hood River28. Six wind turbines are proposed in a single line on Middle Mountain. The project would be located approximately 15 miles south of the Project. The County has completed visual simulations, and a project informational meeting is scheduled for January 12, 2010. The County plans to continue its feasibility analysis in the coming months. Studies of impacts to biological resources have not been conducted.
• I-84 Bridge Replacements. Oregon Department of Transportation is repairing or replacing 21 bridges on I-84 through the Columbia River Gorge with new bridges29. Several of these projects are located near Hood River and these improvements are grouped as follows:
-I-84 Cascade Locks to Hood River. The bridges in this bundle span the junction of the Hood and Columbia rivers. Construction began in July 2008 and will be completed in fall 201030.
-I-84 Exit 64 (Hood River). This bundle includes replacing the overpass bridge on Interstate 84 at exit 64 in Hood River and improving the interchange and Button Bridge Road beneath the overpass. Design work started in fall 2008 and will be completed by fall 2009. Construction is scheduled from early 2010 to late 201131.
-I-84 Hood River to The Dalles. These five bridges are located at the east end of the Columbia River Gorge. Construction on the Mosier Creek bridge replacement began in August 2008 and will be completed in fall 201032. Design work on the remaining bridges is complete and construction is scheduled from spring 2009 until early 2012. Repairs to the I-84 bridges at Hostetler Way in The Dalles and over Rock Creek in Mosier were completed in summer 2007.

28 See: http://www.co.hood-river.or.us/vertical/Sites/%7B4BB5BFDA-3709-449E-9B16B62A0A0DD6E4%7D/uploads/%7B909769CE-99F0-47B5-9CAF-77015BF9D737%7D.PDF, and http://www.co.hood-river.or.us/index.asp?Type=B_BASIC&SEC={2AE779FB-D681-4AA8-8835B50BBAA8252D}.

29 See: http://www.oregon.gov/ODOT/HWY/REGION1/ColumbiaGorge/

30 See: http://www.oregon.gov/ODOT/HWY/REGION1/ColumbiaGorge/CascadeLocksto2ndStreetHoodRiver.pdf.

31 See: http://www.oregon.gov/ODOT/HWY/REGION1/ColumbiaGorge/B224_PIP_90109_ODOT.pdf.

32 See:

http://www.oregon.gov/ODOT/HWY/REGION1/ColumbiaGorge/CascadeLocksto2ndStreetHoodRiver.pdf.

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3.14.3 CUMULATIVE IMPACTS

The following subsections describe the cumulative effects that the Proposed Action, in combination with the past, present, and reasonably foreseeable future actions identified above, would have on the various environmental resources discussed in this EIS. Cumulative impacts from the combination of these actions could occur for each of the environmental resources. However, the contribution of the Proposed Action to these cumulative impacts would vary, with the greatest contribution occurring in cumulative impacts on visual resources as constructing and operating the Project would add a view of an additional wind power project to travelers in the Gorge. In addition to the existing projects east of the project area, long-distance travelers in either direction along I-84 could see some elements of the Project, for approximately 12.5 miles traveling west and 6.5 miles traveling east. Travelers along SR 14 would not see the Proposed Action, which would be blocked by the bluff to the north of the road. As discussed in more depth below in Section 3.14.3.10, the visual impact of the Project along I-84 would be variable, with the number of turbine strings visible changing with topography. In many places only a few turbines would be visible, and the area where the most turbines would be visible (directly across the Columbia River from White Salmon and Bingen) would also be the area where the viewer would be the farthest from the project area (Figure 3.9-1). This would constitute a small cumulative impact when considered in combination with views of other wind projects located from 35 to 70 miles to the east.

Low levels of adverse cumulative impacts have been identified for energy and natural resources from the use of steel, concrete and vehicle fuel for construction, and for transportation (traffic safety and increased risk of accidents during construction periods of the Project and the I-84 bridge replacement projects, if they should overlap). Simultaneous construction projects may create a beneficial cumulative socioeconomic impact to local communities. Finally, by introducing up to 75 MW of clean renewable energy into the regional electrical grid, the project will positively contribute to efforts to combat the cumulative impacts of climate change, and also contribute to efforts to improve air quality in the Columbia River Gorge vicinity.

Comments: This is not cumulative impacts analysis, folks. Table 5-3, Primary and special methods for analyzing cumulative impacts, in the CEQ NEPA <u>Considering Cumulative Impacts</u> Handbook (and I have provided EFSEC with a copy of this handbook in my previous testimony), lists these primary methods as follows: Questionnaires, interviews, and panels; checklists; matrices; networks and system diagrams; modeling; trends analysis [my comment: this is a very important part of any cumulative impacts analysis]; overlay mapping and GIS; carrying capacity analysis [my comment: this is a crucial and extremely important analysis and SDS and BPA have failed to do this analysis and it is a FATAL FLAW of the DEIS]; ecosystem analysis [my comment: VERY IMPORTANT and has not been done in this DEIS]; economic impact analysis [my comment: this has not been done. It involves establishing the region of influence, modeling the economic effects, and determining the

significance of the effects.]; social impact analysis [my comment: Social impact analysis addresses cumulative effects related to the sustainability of human communities by (1) focusing on key social variables such as population characteristics, community and institutional structures, political and social resources, individual and family changes, and community resources, and (2) projecting future effects using social analysis techniques such as linear trend projections, population multiplier methods, scenarios, expert testimony, and simulation modeling. SDS and BPA have not done these analyses for this proposal and this is yet another instance of a fatal flaw in this DEIS. BPA at least should know better than to try to avoid these types of analyses!

All potential cumulative impacts are discussed below.

3.14.3.1 Earth

Past and present commercial logging of the site and surrounding area, agriculture, and construction of rural residences have resulted in cumulative impacts to geology and soils, primarily through increased erosion and soil disturbance and compaction. As the reasonably foreseeable future actions are developed, these actions likely would contribute to cumulative impacts. Reasonably foreseeable use of the Project site for both the proposed the Project and for a continuation of commercial forestry could increase the potential for soil erosion, and contribute to these cumulative impacts for the life of the project.

3.14.3.2 Air Quality

While past and present development and activities have resulted in some deterioration of air quality in the project vicinity, the cumulative effect of these activities on air quality has been fairly negligible. Overall, the air quality in the region is considered good, as evidenced by

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Oregon Department of Environmental Quality (ODEQ) reports on air quality for The Dalles, Oregon, the closest city with an air monitoring station. ODEQ reports air quality data using an air quality index based on particulate matter 2.5 micrometers diameter and smaller (PM2.5). ODEQ's 2008 report for The Dalles shows 339 days with good air quality, 25 days with moderate air quality, and no days with unhealthy air quality (ODEQ 2009).

While air quality in the project area is generally good, haze is a well-documented problem in the Columbia Gorge and the causes are being studied by the Southwest Clean Air Agency. In a 2008 Report, the agency found that haze was largely caused by winter stagnations that trap pollutants and fog (SWCAA 2008). In the summer, winds flow predominantly from the west, transporting emissions from the Portland metropolitan area into the Gorge. Wildfires also contribute to the haze when smoke is blown into the Gorge. There is no single source that is primarily responsible for haze; however, man-made sources are important contributors (ODEQ 2008). The most significant man-made sources contributing to haze in the Gorge include: power plant emissions; woodstoves; motor vehicles; non-road emissions (e.g. ships, trains, trucks); and agricultural sources of ammonia.

Construction of reasonably foreseeable future actions would be expected to generate dust and emissions during construction activities that could cumulatively contribute to air quality degradation. Construction of the terrestrial portions of the Proposed Action also would generate dust and emissions that likely would incrementally contribute, though slightly and only for a short time, to cumulative air quality impacts in the general project vicinity.

Climate Change. Past and present actions in the project vicinity, the region and across the globe have contributed to climate change and global warming. The past and present actions include, without limitation, the post-settlement conversion of native landscapes to residential, commercial and forestry uses, the introduction of carbon dioxide and other greenhouse gases from fossil fuel emission sources, particularly from automobiles and fossil fuel electrical generation sources, and in general, post-industrial manufacturing processes and land uses. Locally, residential, agricultural and commercial development is expected to continue a trend that permanently removes forests and replaces them with land uses that contribute to climate change.

"Climate change" refers to changes in the Earth's global climate, including the rise in average surface temperature known as global warming. At this time, while there is nearly complete scientific consensus concerning the anthropogenic causes of global climate change, and also consensus on its deleterious impacts on the natural and human environment, there is uncertainty regarding the specific, localized effects of projected global warming upon regional temperature, precipitation and ocean conditions. The Federal Environmental Protection Agency (EPA) recently acknowledged that due to its impacts on climate change and related human health effects, carbon dioxide is considered an air quality pollutant requiring a regulatory response.33

Footnote 33: In December, 2009, Environmental Protection Agency (EPA) Administrator Lisa Jackson announced that the agency had finalized its finding that greenhouse gases, including carbon dioxide, pose a threat to human health and welfare. The ruling allows the EPA to begin regulating greenhouse-gas emissions from power plants, factories and major industrial polluters, although the precise details of that regulation have yet to be worked out. "The threat is real," said Jackson. "If we don't act to reduce greenhouse-gas emissions, the planet we will leave to the future will be very different than the one we know today."

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The effects of global warming on the overall hydrology of the Columbia River Basin are difficult to separate from the natural variability resulting from cycles such as El Niño and the Pacific Decadal Oscillation. Further, forecasted changes to water supply or runoff volumes for the key Columbia River Basin drainages are more susceptible to shorter climatic cycles, such as El Niño and the Pacific Decadal Oscillation, than longer-term trends attributable to global warming. The variability seen in the Columbia River Basin over the last 80 years is greater than the variability experienced in the last 10–15 years. Therefore, even though the precise effects of global warming on the Columbia River Basin cannot be accurately determined at this time, estimated changes are within historic variations. Although precise forecasting of the future effects of global warming on the Columbia River Basin may not be possible at this time, it is possible to consider how the development of the Project will affect emissions of greenhouse gases such as

carbon dioxide.

Comment: The U.S. Forest Service's Pacific NW Experimental Station, located in our own Skamania County, at the old Wind River Nursery site (the oldest nursery in the Pacific NW, dating back to 1909), has put together a CD set on global climate change and its effects on the Pacific NW. One of their conclusions is that we will get more rain and less snow pack, something which will definitely affect BPA's energy production and local quality of life. There will be impacts on fish and other wildlife. One of the things that their research did not address was any changes in wind patterns resulting from global climate change. This is the FUTURE part of cumulative impacts analysis and should be done for this DEIS!

Reasonably foreseeable future actions, including continued use of fossil-fuel-burning automobiles, industrial processes, and electrical power generation are likely to continue, with cumulative impacts to air quality and acceleration of climate change through the continuing introduction of greenhouse gas emissions into the atmosphere. Power generated from wind displaces power generated by carbon dioxide emitting sources. In addition to wind energy generation being a non-emitting source, wind energy also is integrated into the hydropower system to reduce reliance on other thermal energy sources (i.e., coal, natural gas, or nuclear). Because the current mix of power sources in the Northwest relies heavily on thermal sources, electricity sourced from the wholesale market would likely have a significant greenhouse gas component, with attendant deleterious cumulative impacts. Integrating power generated by wind turbines into the hydropower system reduces reliance on other energy alternatives and avoids the need to procure 75 MW of electric power with a significant greenhouse gas component. Consequently, the Proposed Action will have a positive cumulative impact on efforts to combat air quality deterioration and climate change.

Comment: Although BPA states that it does not own any gas plants, it will need to rely on backups, perhaps even natural gas-powered plants, to back up its energy production. The more energy BPA is asked to produce the more power plants (or other types of machinery that will produce on-demand, quick backup) will have to be online to ensure flexibility and capability in the power grid. This is NOT a "positive cumulative impact" that would "combat air quality deterioration and climate change"! Cumulative impacts are not done on a project by project basis. They must be on a regional basis, especially when there is a regional energy producer, BPA, involved. Also, BPA is in the process of trying to build bigger and bigger transmission lines in order to produce and carry more energy production. These transmission lines have environmental effects and cumulative effects. There is nothing in the DEIS that addresses the environmental impacts and effects of past, present, and future transmission lines.

3.14.3.3 Water Resources
Creeks and Streams

Past and present development and activities have cumulatively caused various adverse impacts to creeks and streams in the general project vicinity. Portions of some of these water bodies have been channelized or filled. Others have been affected by pollutants from stormwater runoff, wastewater discharges, and other sources. Reasonably foreseeable future actions, including

continued commercial forestry practices and the additional development of rural residences could also contribute to these cumulative impacts.

Roadway construction and maintenance in the project area and vicinity could increase stormwater runoff, and increase sedimentation and turbidity if construction equipment crosses drainage ways. The Proposed Action would incrementally contribute to adverse cumulative impacts to creeks and streams in the general project vicinity. In particular, the Proposed Action

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would potentially add to cumulative impacts to Little Buck Creek on the east side of the project and possibly to Lapham Creek near the proposed site of the Operations and Maintenance Facility during project construction from construction site stormwater runoff that would result in temporarily increased sedimentation and turbidity. The Proposed Action and other cumulative projects also would have a longer-term adverse cumulative impact to these creeks through the addition of increased impervious areas, which would increase the amount of stormwater runoff to these creeks, however the increase in impervious surfaces for the Proposed Action are expected to be minimal and largely limited to the wind turbine foundations and the Operations and Maintenance building. Lapham Creek drains into the Little White Salmon River, which drains into the Columbia River. Implementation of stormwater detention and other stormwater management practices for the Proposed Action would serve to minimize and possibly avoid project contributions to these cumulative impacts, including contributions to cumulative impacts to other water bodies in the area, such as the Columbia River.

Groundwater Resources

Cumulative impacts to groundwater from past and present development and activities in the general project vicinity have included groundwater withdrawals for wells. The reasonably foreseeable future actions would cumulatively affect groundwater for additional wells, including the proposed groundwater use of up to 5,000 gallons per day for the Operations and Maintenance Facility. The Proposed Action could contribute to the cumulative effect of potential groundwater contamination; however the potential for spills or contamination would be no larger than existing commercial forestry or agricultural operations.

3.14.3.4 Vegetation and Wetlands
Vegetation and Habitat

Past and present land development, timber harvest, and agricultural uses have resulted in a cumulatively significant change in the composition of vegetation and habitat types in the project vicinity. In general, land development and agricultural uses have resulted in conversion of forested areas to non-forested areas, and timber harvests have resulted in a mosaic of forest ages, with average stand age declining over time from relatively short stand rotations. Changes in stand structure and complexity, patch size, and species distribution also have occurred. Few large, old-growth conifers or late-successional stands exist in the general project vicinity. Accordingly, past and present uses have resulted in cumulative habitat conversion and an

ongoing pattern of habitat fragmentation. Reasonably foreseeable future actions, such as ongoing land development and timber harvests, would continue this trend.

Project construction would take place in the context of the existing use of the project vicinity generally for commercial forestry, which includes regular cycles of clearcutting and reforestation. Nonetheless, by removing trees and other vegetation in the wind project area for the life of the project, development of the Proposed Action would contribute incrementally, though in a relatively minor way, to these cumulative impacts.

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Special-Status Plant Species

Plant species listed as threatened or endangered and other special-status plant species have been cumulatively affected by past and present development and activities through habitat loss and direct effects to individual species. This trend will likely continue as future development occurs in areas where these species are present. However, the Proposed Action would not contribute to this adverse cumulative impact because, as described in Section 3.4.1.4, the Proposed Action would not affect any threatened or endangered or other special-status plant species.

Comment: I feel like I'm banging my head against a brick wall... One more time: Cumulative impacts are not analyzed on a project by project basis, especially when cumulative impacts are regional. And, just because "threatened or endangered and other special-status species have been cumulatively impacted by past and present development" does not mean that we should continue practices that will impact them in the FUTURE! Cumulative impacts analyses measure past, present, and future direct and indirect impacts and their CUMULATIVE IMPACTS.

Wetlands

Incremental losses and degradation of wetlands over time have cumulatively depleted wetland resources in the United States. In the project vicinity, wetlands likely were previously impacted by construction of a variety of activities, including development of roads and railroads, agricultural activities, and past timber harvests. Reasonably foreseeable future actions may also affect wetlands in the project vicinity, but it is expected that these future projects would be required to avoid, minimize, and compensate for any potential impacts to wetlands from filling or other activities as part of project Section 404 permitting requirements. Regardless, because construction and operation of the proposed wind project would not impact wetlands, implementation of the Proposed Action would not contribute to cumulative impacts to wetlands.

Noxious Weeds

Past and present activities in the project vicinity have led to a cumulatively significant spread of noxious weeds in the vicinity, and noxious weed spread could continue with reasonably foreseeable future actions. Although mitigation measures have been identified to minimize the spread of noxious weeds by the Proposed Action, it is likely that noxious weed impacts would

nonetheless still occur under the Proposed Action. The Proposed Action thus would contribute incrementally, though in a relatively minor way, to this cumulative impact.

3.14.3.5 Habitat and Wildlife
Terrestrial Wildlife Species

Past and present development and other activities have had a cumulative adverse impact on terrestrial wildlife species and their habitat in the general project vicinity. The clearing and conversion of land for home sites, utility infrastructure, and other uses since approximately the 19th century has resulted in the cumulative loss of wildlife habitat. Wildlife habitat also has been cumulatively modified through activities such as logging and other silvicultural activities, which have altered and fragmented habitat. This habitat loss and modification has resulted in the displacement of wildlife species. While these changes to existing habitat have been cumulatively detrimental to some species of wildlife, some changes that have resulted in conversion from one habitat type to another (as opposed to conversion to human uses) have been cumulatively beneficial to other wildlife species. Wildlife species also have been directly affected by hunting and trapping activities, as well as incidental harm and killing from other human activities in the area. Reasonably foreseeable future actions involving highway improvements, residential,

commercial, agricultural and other development and logging would be expected to incrementally add to these cumulative impacts.

The Proposed Action would impact terrestrial wildlife habitat through permanent improvement of approximately 56 acres now in grass/forb, field/shrub, managed coniferous or mixed deciduous-coniferous forest from within the wind project area (See Table 1-3 and Section 3.3). Some terrestrial wildlife species may also be disturbed by project construction activities or avoid the project area temporarily during construction. The Proposed Action thus would contribute incrementally, though in a relatively minor way, to the cumulative impact on terrestrial wildlife species and their habitat.

Comment: What does "permanent improvement mean, exactly?!? What is the factual basis for this statement? Where is the cumulative impact analysis supporting the statement that "The proposed actions thus would contribute INCREMENTALLY, THOUGH IN A RELATIVELY MINOR WAY, to the cumulative impact on terrestrial wildlife species and their habitat"?!? Again, cumulative analysis is NOT done on a project by project basis when there are regional impacts to be considered. It is these types of statements that litter this very inadequate DEIS throughout its many pages. There is no cumulative data or cumulative impacts effects analyses that have been done to support these flagrantly unfounded statements yet they are included in this data-deficient, weak, meager DEIS as if they are factual statements. FATAL FLAW.

Bird and Bat Species

Past and present development and other activities have had a cumulative adverse impact on

wildlife species, including birds and bats, with permanent alteration and loss of their habitat in the general project vicinity. The clearing and conversion of land for home sites, utility infrastructure, and other uses since approximately the 19th century has resulted in the cumulative loss of habitat for birds and bats. Habitat for birds and bats has also been cumulatively modified through activities such as logging and other silvicultural activities, which have altered and fragmented habitat. This habitat loss and modification has resulted in the displacement and mortality of these wildlife species. Further, as discussed below, past and present residential and other development has a continuing impact on these species, through building, window, transmission line and telecommunication facility strikes, vehicular strikes, and the predation of these species by domestic cats. Reasonably foreseeable future actions, including non-wind energy generation uses, are expected to have a continuing negative impact on these species.

As documented elsewhere in this DEIS in Section 3.4 Biology, the Proposed Action would impact bird and bat species. Because of the variability in species, habitat, and flight patterns on a regional basis, it is difficult to assess potential cumulative impacts of "full build-out" development of wind power on birds and bats over a large geographic area. However, the National Academy of Sciences National Research Council estimated the best and worse case fatality estimates for birds and bats based on a regional "full-build" scenario in 2020 for the Mid-Atlantic Highlands (NRC 2007). This study is considered the most thorough, objective and "best available science" on the topic of cumulative impacts from wind energy projects, and made use of a real world example (although from a different region of the country from Whistling Ridge). This study concluded that it is unlikely that the predicted level of fatalities would result in measurable impacts to migratory populations of most species, although for rare and local populations, the cumulative impacts when combined with all other man-made sources of mortality could affect population viability.

The reference in this study to "all other man-made sources of mortality" in the National Research Council study highlights one of the numerous caveats and difficulties inherent to such a study: collisions with turbines are only one element of man-made cumulative effects on bird and bat populations in a given region. Examples of other man-made impacts include collisions with buildings, transmission lines and vehicles, habitat loss, and predation by domestic cats. Erickson et. al. (2005) concluded that these sources of mortality are likely much larger than the potential impacts of wind power development. Other uncertainties included:

Comment: There comes a point when the carrying capacity of a region is met and the cumulative impacts threshold is met. When that time comes, and it should be determined through thorough cumulative impacts and effects analyses, then it is time to say "NO" to further cumulative impacts on the region. When all the cumulative impacts are taken into account there might come a point when no further development can take place because the cumulative impact threshold has been reached and further development would detrimentally and permanently affect the environment.

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• While estimation of bird fatalities caused by wind energy projects is possible, data on bat fatalities is currently sparse, and typically is not species-specific.

• Estimates of turbine fatalities from past projects, especially those from the 1980s through the 1990s, are based on a variety of methodologies and do not include corrections for observer bias and potential removal of carcasses by scavengers.
• Factors such as the turbine height and design, rotor velocity, number and dispersion of turbines, location of turbines in the landscape, and operational schedule of turbines may influence fatalities. Turbine technology is continually changing and it cannot be predicted what technology will be available in the future.

A similar cumulative impact study on avian and bats was performed by West, Inc. for the Klickitat County Planning Department (West, Inc. 2008). West's study reviewed 17 wind-energy facilities totaling 2,464 MW that were in operation in the CPE of Eastern Washington and Oregon, and an additional 30 potential wind-energy facilities that were planned or being constructed within the CPE as of mid-2008. At the time of their study, West found that there was approximately 6,665 MW of existing or proposed wind-energy facilities in the CPE. For the purpose of their analysis, West assumed that 6,700 MW of wind power would be present in the CPE. However, past experience indicates that not all permitted projects are built, so these figures likely overestimate what will actually be constructed. Klickitat County added this study to the Klickitat County energy Overlay Zone Environmental Impact Statement originally issued in September 2004. This study is included in this EIS as Appendix C-11.34

Like the National Research Council study, for the purpose of their cumulative analysis, West assumed that for cumulative impacts to occur, there must be a potential for a long-term reduction in the size of a population of birds or bats.

West's general approach to the cumulative effects analysis was to summarize results of fatality monitoring studies at operational wind-energy facilities within the CPE, and then use those results to estimate impacts for all constructed and proposed wind-energy facilities within the same ecoregion. At the time of the West study, most wind energy development in northern Oregon and southern Washington had been within an area historically characterized by open, arid shrub-steppe and grassland-steppe habitats. West found that the current predominant land use of the CPE is dryland agriculture and rangeland, with low precipitation (6 to 12 inches per year). Habitat and land use throughout the entire CPE are similar.

West's cumulative effects analysis relies heavily on data from 11 wind-energy facilities in the CPE where fatality monitoring has occurred. Most of the operating facilities have had or will have some sort of avian and bat post-construction casualty monitoring associated with them, and post-construction fatality monitoring data are available from 11 operational wind energy facilities in the CPE. For each of the individual study areas from which fatality results are

34 A similar, but somewhat more limited cumulative impact study was prepared for the Shepherd's Flat
Wind Energy Facility in 2007. (Included in this EIS as Appendix C-12)

available, the predominant land use was a mosaic of agriculture (mainly dryland wheat farming)

and grassland or shrub-steppe rangeland used for livestock grazing.

West estimated the population losses for birds (excluding raptors), raptors, upland game birds, waterfowl, waterbirds, and shorebirds, passerines, sensitive bird species, and bats. Their study estimated 69.5 percent of losses would be to passerines, of which horned lark fatalities made up nearly half. Fatalities to other avian and bat populations were estimated to be substantially less. None of the estimated fatalities were anticipated to cause a significant loss in population, and no cumulative impacts were anticipated.

In comparison to the CPE, the site proposed for the Project is more mountainous, receives more precipitation (an average of 84.06 inches per year as measured at the Skamania fish Hatchery), and is more forested than the CPE. Due to the difference in habitat types between the Project site and the CPE, the results of the direct impact analysis for the Project cannot be directly applied to the results of West's cumulative effects analysis for the CPE. However, West's cumulative effects analysis is relevant in considering the added impacts of the Proposed Action to the overall cumulative biological impacts of all wind energy projects in the region.

As described in Section 3.4 Biological Resources, operation of the Project would result in unavoidable mortality to birds and bats through turbine collisions, but there likely would not be enough mortality to negatively affect the population viability of any single species. Operation of the Middle Mountain wind project also would presumably cause some mortality to birds and bats. Raptors, including bald eagles, golden eagles, northern goshawks and others could travel the 12 air miles between the two wind projects, and the two projects would be considered part of the same regional population of raptors. The Proposed Action thus would contribute incrementally, though in a relatively minor way, to the cumulative impact on bird and bat species in the region.

Finally, the evaluation of cumulative impacts for wind energy generation facilities should be considered in the context of other mortality threats to these species, which have been estimated in recent research as many times larger than those from wind energy generation (Erickson et al. 2005; 2008). Moreover, the cumulative impacts analysis for wind energy generation facilities does not account for potential mortality to birds and bats caused by climate change, and the beneficial biological impact of renewable energy in avoiding these impacts. For example, one study from 2009 estimated that, based on performance in the United States and Europe, wind farms and nuclear power stations are responsible each for between 0.3 and 0.4 bird fatalities per gigawatt-hour (GWh) of electricity while fossil-fueled power stations are responsible for about 5.2 fatalities per GWh (Sovacool 2009).

Comment: Ok. So, cumulatively, all of these activities actually kill how many birds in total? What is the cumulative impact of all this killing on bird populations? Many birds are pollinators. Eighty percent of our agriculture (FOOD!) is dependent on pollinators, birds and bees, etc. What effects do wind farms have on pollinator mortality? How does any killing of pollinators by wind farms affect agriculture and our food supply? The cumulative effects of any pollinator mortalities are not addressed in the DEIS and should be.

Fish Species

Past and present development and other activities have had an adverse impact on fish species, including the alteration and loss of their habitat in the general project vicinity. Negative impacts to fish and other aquatic resources from past and present, as well as reasonably foreseeable future development in the region include the alteration of streams and rivers by the introduction of hydroelectric generation dams, loss of riparian habitat, increased sediment loading, increased stream temperatures, pollution from herbicide and insecticide use, changes in peak and low

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stream flows, fragmentation of fish habitat, decreases in streambank stability, altered nutrient supply, and stormwater runoff from roads and bridges. The proposed work on the I-84 bridges may cause temporary increases in impacts from construction activities. These impacts are anticipated to continue into the foreseeable future.

Typically, wind energy generation projects in the region tend to be located in upland areas and generally well away from fish habitat, which is also true of the proposed project. Therefore, wind energy projects in the region in general, and the proposed project in particular, would not contribute to direct cumulative impacts to fish species.

Comment: This statement "wind energy projects in the region in general, and the proposed project in particular, would not contribute to direct cumulative impacts to fish species" is an unsupported over-generalization with no science or common sense applied. The DEIS has no collective science data to support this assertion. However, there are most probably direct cumulative impacts [BPA's own fish projects show this] to fish species caused by BPA's energy production activities and the wind farm projects along the Columbia River, since they do contribute to BPA's energy production activities, must also contribute to the direct cumulative adverse impacts on fish species. Where is the cumulative impacts analysis on direct and indirect cumulative impacts to fish species in the region?

Potential indirect cumulative impacts to fish species can occur through a somewhat complex relationship among wind projects interconnected to BPA transmission system, Columbia River hydro operations, and operation of this hydroelectric generation system to meet Clean Water Act (CWA) and ESA requirements for listed fish species. There are currently over 2,000 MW of wind energy connected to the transmission grid within BPA's Balancing Area, and several thousand more MW of wind power are expected to be developed and connected to the grid in the next few years.35 The majority of these projects are concentrated in the geographic area east of the Columbia River Gorge, and the overall amount of wind power on BPA's transmission system largely depends on wind velocities in this particular area. Accordingly, the amount of wind power on BPA's system can fluctuate widely and relatively quickly, depending on whether wind speeds in this area are low (meaning very little wind power is being generated in this area) or high (meaning wind projects in this area are generating close to or at full capacity).

Within BPA's Balancing Area, there must be a match between generation and loads at all times. BPA has historically reserved capability in the hydroelectric system to provide balancing services for wind power output swings when needed. However, the increasingly large

proportional share of wind power on BPA's system and the natural fluctuation of this power have combined to result in large, unscheduled swings in wind generation of up to several hundred megawatts within a single hour that cannot be handled by reserved capability alone. In such situations, BPA must immediately decrease generation in the BPA Balancing Area to maintain the constant balance of generation and load needed to keep the system stable. Using the hydroelectric system to decrease generation in these situations is often not available because:

(1) reservoir space at the hydro projects is being maintained for required flood protection (meaning that additional water cannot be stored); and/or (2) additional water cannot be spilled, rather than run through turbines, at the hydro projects due to CWA limits on the level of total dissolved gases in the river and potential impacts on ESA-listed fish species from higher levels of total dissolved gases. For these reasons, BPA currently is working with wind project developers and operators to develop measures for temporarily reducing sources of wind generation within the BPA Balancing Area when necessary. As part of a comprehensive review of wind project interconnections and their effects that was conducted in winter 2008, BPA has established 35 BPA. Factsheet: How BPA Supports Wind Power in the Pacific Northwest. DOE/BP 4002. March 2009.

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transmission operation protocols under which BPA's dispatch system automatically instructs wind project operators to reduce their generation to specified levels if necessary for reliability and ESA or CWA compliance. BPA has issued Dispatcher Standing Order (DSO) 216 to document these protocols, and is continuing to refine and clarify this DSO as more is learned about wind project operations relative to BPA's transmission system (visit http://www.transmission.bpa.gov/wind/op_controls/default.cfm for more information). These measures ensure that wind power on BPA's transmission system does not cumulatively impact Columbia River hydro operations necessary for listed fish species.

The proposed project would be subject to DSO 216, which would avoid any contribution from the proposed project to indirect cumulative impacts to fish species. In addition, because the proposed project is located at the west end of the Columbia River Gorge rather than the east end (i.e., approximately 60 miles to the west of the Columbia Plateau wind generation vicinity), wind patterns in the project vicinity can vary significantly at any given point in time from those in the area where the majority of existing and proposed wind projects are located. This difference adds diversity in wind energy production and further reduces the potential for any contribution of the proposed project to indirect cumulative impacts to fish species during periods of time when generation needs to be decreased to maintain transmission system stability. The added diversity should assist BPA in implementing regulation requirements on the hydro system. Overall, the proposed project would not be expected to contribute, either directly or indirectly, to cumulative impacts to fish species.

Comment: There is no way that the proponent can know that since the proposed wind farm would be subject to DSO 216 and that this authority would "avoid any contribution from the proposed project to indirect cumulative impacts to fish species"!! In the NEPA booklet, Considering Cumulative Impacts, p. 8, Table 1.2, Principles of cumulative effects analysis, the

#2 statement states "Cumulative effects are the total effect, including both direct and indirect effects [my underline emphasis], on a given resource, ecosystem, and human community of all actions taken [my underline emphasis], no matter who (federal, nonfederal, or private) has taken the actions. Individual effects from disparate activities [my underline emphasis] may add up or interact to cause additional effects not apparent when looking at the individual effects one at a time [my underline emphasis]. The additional effects contributed by actions unrelated to the proposed action must be included in analysis of cumulative effects." Not only do all the current and future wind farms have to be included in the cumulative impacts analysis, but also to be included are any other development proposals in the affected region. For example, the proposed Cascade Locks, OR off-reservation casino that would contribute cumulative impacts on the Columbia River and the human and wildlife habitats. For example, the proposed SDS Lumber Broughton(WA) condominium development that would potentially introduce 1000-1500 new inhabitants on the shores of the Columbia River, inhabitants who would most certainly impact the Columbia River, for as we all know all treated sewage [this is not drinking water, folks!] goes into the Columbia River, as does everything that comes from our septic fields. For example, SDS has proposed a resort in Cascade Locks, OR, contributing more sewage water and resource depletion into the Columbia River waters, a river that is already considered one of the most toxic and needs to be cleaned up, not dirtied up some more. For example, SDS has a 50 lot subdivision proposal in Carson, WA, a unincorporated area which has no sewage treatment plant, and has approximately 2600 residents who all use septic fields. Everything flows downhill, as we all know, and it all ends up in the poor Columbia River. So, I would say that the wind farm proponent has failed, miserably, to do any cumulative impacts analyses that take into account direct and indirect impacts from a variety of activities that MUST be considered for this DEIS.

Certainly, and I consider a fatal flaw of the DEIS, neither BPA or SDS Lumber have defined a BASELINE CONDITION for the resources, ecosystems, and human communities that would be impacted by the proposed project and all other projects that contribute to cumulative impacts.

3.14.3.6 Energy and Natural Resources

Past and present land development, timber harvest, and agricultural uses have resulted in a cumulative use of energy and depletion of energy resources in the project vicinity. The the Project would have a positive effect on energy, in that it would produce more energy than that used to build and operate the facility. The project would consume a limited amount of natural resources for construction, including steel, concrete, and fuel for machinery. The amount of these resources used would be insignificant compared to available supply. The Middle Mountain

wind project would be similar in the balance between consumption of energy and generation of renewable energy to the Project although both the energy payback and the amount of resources consumed would be smaller, since the Middle Mountain project would have only six turbines, and is anticipated at 9 MW to be approximately 12 percent of the size of the Project. The I-84 bridge improvements would consume steel, concrete and fuel. The combined consumption of these natural resources is small compared to available supply. The Proposed Action thus would contribute incrementally, though in a relatively minor way, to the cumulative impact on use of natural resources in the region.

3.14.3.7 Public Health and Safety

Past development of high voltage transmission lines across the project site has created a low level of EMF exposure. The project will include 34.5-kV collector lines and systems, primarily located underground. There will be a new substation located adjacent to BPA's existing North Bonneville to Midway 230-kV transmission line, and a new interconnection from the substation to the 230-kV transmission line. Adding additional overhead and underground cables would cumulatively increase the overall level of EMF exposure. The electric and magnetic fields

generated by the collector lines and underground systems under the Proposed Action, which are described in Section 3.6, Environmental Health, would contribute to the cumulative levels of EMF in the project vicinity, though only slightly because of cable shielding and undergrounding, the minor nature of these project elements, and the distance to existing residences.

During construction of the Project, there would be a slight increase in risk of traffic or worker accidents during the construction period. This impact would take place in the background of existing land use patterns based on commercial forestry, agriculture, and residential development. Effects of construction of the Middle Mountain wind project and I-84 bridge replacements would most likely be similar, though the impact of the Middle Mountain project would be smaller, given the smaller size of the project. Given the anticipated low number of incidents and the available capacity of the local emergency responders and hospitals to respond to those incidents, the cumulative impact would be relatively minor, and would be reduced once construction is completed.

3.14.3.8 Noise

Past and present development activities have introduced noise sources to the vicinity, including residential construction and development, commercial forestry operations, motor vehicles, machinery and domestic livestock and pets. Implementation of the cumulative actions identified in Sections 3.14.1 and 3.14.2 would be expected to generate various levels of noise through the project vicinity, as would the Proposed Action. Depending on the proximity and timing of these actions, there could be cumulative noise impacts if actions are undertaken simultaneously and in relative close relation to each other. For most of the cumulative actions, it is expected that they would not result in cumulative noise impacts due to temporal or spatial separation. However, given the expected timing of the I-84 bridge improvement projects in the vicinity of the proposed

project, it is possible, however not expected, that receptors in the area could be exposed to cumulative noise impacts during the construction of these roadway projects in combination with the Proposed Action.

Operation of the Proposed Action would result in elevated noise levels from the movement of the turbines, maintenance activities, and operation related traffic. The operation noise levels would vary with the speed of the turbines. While the noise levels are not predicted to exceed regulated noise levels, the Proposed Action would contribute in minor ways to cumulative increases in noise levels in the project vicinity. These contributions would be lessened through the application of mitigation measures described in Section 3.7 Noise.

3.14.3.9 Land Use and Recreation

The cumulative past, present and reasonably foreseeable actions identified in Sections 3.14.1 and 3.14.2 have resulted in changes to land use and would be expected to continue the incremental growth of developed land uses in the project vicinity. The Proposed Action would be consistent with existing land use planning and zoning designations for project facilities, and would not result in any inconsistencies with existing or planned adjacent land uses. The Proposed Action also would have little or no effect on existing land use patterns. The land use impact of the Middle Mountain wind project has not been studied but is unlikely to be inconsistent with local land use codes, to cause changes to local land use patterns, or to create cumulative impacts.

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The the Project would have little to no impact on recreation resources, and this is most likely the case for the Middle Mountain wind project as well. The I-84 bridge replacements may have a beneficial impact to recreation users, as roadway improvements may improve access to recreational resources in the area. Given the abundant recreational resources in the area and the low level of impacts, the Proposed Action's contribution to cumulative impacts to recreation would be minor.

3.14.3.10 Visual Resources

While parts of the Gifford Pinchot National Forest near the project area remain undeveloped, past and present development activities have changed the visual landscape in the immediate project vicinity by introducing manmade features and altering natural forms. These uses include residential, commercial and agricultural development, the construction of highways, bridges and roads, electrical transmission towers and hydroelectric dams, and telecommunication facilities. Ongoing human activities in the vicinity also contribute to continuing cumulative visual impacts, primarily views of clear-cutting and agricultural openings in natural vegetation patterns. Reasonably foreseeable future actions would be expected to continue this trend, as the past and present patterns of land use are expected to continue.

During project construction, the Project would contribute to cumulative visual impacts through visible construction activities, although some viewers interested in viewing project construction may consider the project's contribution to be a positive impact. After construction is complete,

the presence of the proposed wind turbines would contribute to cumulative visual impacts on nearby residents and motorists passing by on county roads, SR 14 and I-84.

The visual impacts of the Project would not be higher than low to moderate at any of the viewpoints examined. In considering the two specific reasonably foreseeable future projects, Hood River County estimated that the proposed Middle Mountain project would be visible as far away as 9.32 miles from that project36. The two projects are approximately 12 air miles apart, and there may therefore be a few locations where both projects would be visible, though these would be background views at the limit of visibility. The visual impact of the I-84 bridge improvements would be limited to the period of construction. Oregon Department of Transportation states that "New bridge designs will complement the aesthetic appeal of the Gorge and reflect the allure of the adjacent Historic Columbia River Highway." Thus, these new bridges may result in a positive impact to visual resources37.

Past and present development of wind energy projects has also taken place at other locations in the Columbia River Gorge. The visual effect of these projects on the regional landscape and the experience of viewers is also a consideration, since long-distance drivers passing through the Gorge would recall seeing wind energy development in the Columbia Gorge. To assess this impact, the visibility of the ten wind projects east of the project area was modeled, using the following assumptions:

36 See: http://www.co.hood-river.or.us/vertical/Sites/%7B4BB5BFDA-3709-449E-9B16B62A0A0DD6E4%
7D/uploads/%7B909769CE-99F0-47B5-9CAF-77015BF9D737%7D.PDF.

37 See:http://www.oregon.gov/ODOT/HWY/REGION1/ColumbiaGorge/.

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- Visibility was modeled to 20 miles. This distance is considered very conservative and was chosen to accommodate recreation users with binoculars
- Visibility was modeled using bare-earth surfaces without vegetation. In reality, many views will be blocked by trees, particularly in the project vicinity.
- Visibility was modeled from single points representing the approximate location of each project taken from the Northwest Power and Conservation Council's on-line Northwest Power Generation Map38.
- This visibility analysis documents visibility of even single elements of wind energy facilities, such as distant and fleeting views of wind energy nacelles and/or turbine blade tips, and does not differentiate these sightings from a more prominent view of entire turbines or generation facilities.
- The visibility analysis also does not account for the overall visual or aesthetic context of landscapes that are not in a pristine condition, most particularly the presence of existing electrical transmission lines which dominate the viewscape in many areas analyzed. Overall, these assumptions almost certainly represent a significant overstatement of the visibility of these facilities, and their cumulative impacts to the landscape.

For a motorist driving east on I-84, wind energy projects first become visible near Wishram, approximately 35 miles to the east of the Project area. From the point, wind projects are visible (using the assumptions stated) for approximately 52 of the following 64 miles (Figure 3.14-2).

Construction of the Project would add some additional views of wind turbines in addition to the past and present wind power development projects and existing electrical transmission facilities. Travelers on I-84 through the Gorge would be able to see the Project for a time while traveling near Hood River. Travelers along I-84 could each see at least some part or elements of the project, for approximately 12.5 miles traveling west and 6.5 miles traveling east39. At normal highway speeds this would result in an additional visual impact for between 7 and 12 minutes. Travelers along SR 14 would not see the Proposed Action, which would be blocked by the bluff to the north of the road.

The visual impact of the Project along I-84 would be variable, with the number of turbine strings and turbine equipment elements visible changing with topography. In many places only a few turbines would be visible, and the area where the most turbines would be visible (directly across the Columbia River from White Salmon and Bingen) would also be the area where the viewer would be the farthest from the project area (See Figure 3.9-1).

38 See: http://www.nwcouncil.org/maps/power/Default.asp

39 The project area is within view for approximately 17 miles, however in each direction the curvature of
the road and the location of the project mean that the project would be behind drivers and passengers for some of that distance.

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The maximum impact of the Project along I-84 can be pictured by referring to Figures 3.9-10 (Viewpoint 13) or 3.9-8 (Viewpoint 11), which show viewpoints located on I-84. From Viewpoint 11, for instance, a traveler proceeding west would see a maximum of 25 turbine hubs and 70 blade tips, all at a distance of 14 kilometers (8.9 miles), or far background distance. From Viewpoint 13, a traveler proceeding east would see a maximum of 12 turbine hubs and 25 blade tips, at a distance of around 5.5 kilometers (3.4 miles) or middle-ground distance. As discussed in Section 3.9, however, these numbers overstate the visual impact, for the following reasons:

• The number of hubs and blade tips visible is calculated using bare-earth surface models. In reality, views of many turbines will be blocked by trees.
• All turbine blades will not be visible when the blades are rotating.
• Atmospheric haze, when present, will reduce the visibility of the turbines, especially at background distances. For westbound travelers, the Project would be the last wind power project visible, and for eastbound travelers it would be the first. Building the project would therefore add a small cumulative visual impact for long-distance travelers.

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33758687_175.cdr

Figure 3.14-2
Job No. 33758687 Existing Wind Projects Visibility from I-84

A similar cumulative impact could occur, probably on a more consistent basis, for residents of and frequent visitors to the local area. While residents of White Salmon, for example, might not see turbines from both Whistling Ridge and Middle Mountain on a daily basis, they would likely experience repetitive views of wind turbines (or portions of wind turbines) through their local travels over a period of weeks, months or years. The "significance" of these perceptions would be individual in nature and inherently subjective, and is considered in the context of an altered landscape that includes hydroelectric generation facilities, transmission towers and lines, roads, bridges, highways and other land uses. Consequently, some local residents and frequent visitors might perceive what they individually consider to be a substantial change to the overall character of the local landscape. Although the geographical and topographical setting of the Project (including north-south trending ridge lines) limits its regional visibility, such a response would be more likely with the development of multiple wind projects.

3.14.3.11 Historic and Cultural Resources

Cultural and historic resources in the project vicinity have been and are being affected because of past, present, and current development and activities. These cumulative impacts include the redevelopment of land used for pioneer settlements, such as the Underwood town site north of the project area, and natural degradation of wooden flumes that were used in the late 1800s and early 1900s to transport logs to the Columbia River. Although the Proposed Action would not affect any known upland archaeological or historic resources, there is the potential for the Proposed Action to impact previously undiscovered cultural resources or artifacts. Mitigation measures are identified in Section 3.10, Historic and Cultural Resources, to lessen or avoid the potential for this impact. However, if the Proposed Action does impact previously undiscovered cultural resources or artifacts, it would contribute incrementally to the adverse cumulative impact to cultural resources in the area.

3.14.3.12 Transportation

The cumulative actions identified in Sections 3.14.1 and 3.14.2 have resulted in increases in traffic and would be expected to continue the incremental growth of traffic in the project vicinity. The Proposed Action would contribute to cumulative traffic levels in the project vicinity, but generally only during the construction phase of the Proposed Action. Construction of the Project is scheduled for a one-year period beginning in 2011. Construction of the I-84 bridges would take place in 2009, 2010 and 201140, with the majority of construction taking place in 2010. There could be some potential cumulative traffic congestion for travelers along I-84 during periods when both construction projects were active. However, workers traveling to the Whistling Ridge site could use SR 14 as an alternative route.

40 See:
http://www.oregon.gov/ODOT/HWY/REGION1/ColumbiaGorge/May2009GorgewideNewsletter.pdf, especially the construction schedule snapshot on page 2.

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3.14.3.13 Public Services and Utilities

Past and present development and activities have resulted in an incremental increase in demand for public services and utilities. The Proposed Action would not be expected to adversely affect the overall capacity or ability to serve of any utility in the area, and thus would not contribute to cumulative impacts to utilities. By providing a potential backup or alternative power source for the Skamania County Public Utility District (PUD), the Proposed Action may contribute to a positive impact on utilities.

Construction of the Project, and the use of construction workers from outside the immediate area, could result in a minor and temporary increase in the demand for public services including police departments, providers of emergency medical services, and local fire departments, and would contribute to a cumulative increase in demand when added to the construction of the Middle Mountain wind project and I-84 bridge improvement projects. The temporary increased demand for services during the construction period caused by the average of 143 workers (265 during the peak month) would be substantially reduced during operation for the permanent workforce of nine full-time workers.

3.14.3.14 Socioeconomics

During construction, the Proposed Action would contribute incrementally to a positive cumulative impact on the economy of the local community by providing additional employment and increased need for goods and services. While the Proposed Action and other cumulative actions would increase the number of construction workers in the project vicinity, there appears to be sufficient vacant rental dwellings and available temporary housing, hotel/motel, camping, and RV units in the general project vicinity to accommodate the potentially overlapping construction schedules of the Proposed Action and some of the possibly concurrent cumulative actions such as the construction of the Middle Mountain wind project and the I-84 bridge improvement projects.

During operation, the Proposed Action would employ nine full-time workers. The operational workforce would have a minor cumulative affect on population, employment, and housing in the project vicinity. The fiscal impact of the project would be highly positive, as the project's assessed value of up to $87.5 million would generate approximately $800,000 per year in tax distributions to municipal, county, and other local jurisdictions. Operation of the Proposed Action would be expected to have a major contribution to cumulative financial benefits to Klickitat and Skamania counties.

3.14.4 REFERENCES

Erickson, Wallace P., Gregory D. Johnson, and David P. Young Jr. 2005. A Summary and Comparison of Bird Mortality from Anthropogenic Causes with an Emphasis on Collisions. USDA Forest Service General Technical Report PSW-GTR-191.

National Research Council (NRC). 2007. Environmental Impacts of Wind-Energy Projects. National Academies Press.

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Sovacool, Benjamin K. 2009. Contextualizing avian mortality: A preliminary appraisal of bird and bat fatalities from wind, fossil fuel, and nuclear electricity. Energy Policy 37 No. 6:2241-2248. June.

West, Inc. 2008. Final Report, Avian and Bat Cumulative Impacts Associated with Wind Energy Development in the Columbia Plateau Ecoregion of Eastern Washington and Oregon. Prepared for Klickitat County Planning Department. October 30.

Young, David P., Jr. and Victoria K. Poulton. 2007. Avian and Bat Cumulative Impacts Analysis, Shepherd's Flat Wind Project, Gillam and Morrow Counties, Oregon. Prepared for Lifeline Renewable Energy, Inc. March.

3.15 RELATIONSHIP BETWEEN SHORT-TERM USES OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY

The Proposed Action under consideration does not pose short-term impacts that would significantly alter the long-term productivity of the affected environment. The turbines and associated facilities would take less than 5 percent of the arable land in the 1,152-acre study area out of production, and the remainder of the land could still be used for commercial forestry. After decommissioning of the project, all of the land could revert to its previous uses. Little change in the long-term environmental productivity of the land would have been caused.

3.16 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Irreversible commitments of resources occur when a non-renewable resource such as minerals or petroleum-based fuels is used for the construction or operation of a Proposed Action. An irretrievable commitment of resources occurs when a federal agency gives up all rights or protections for a particular resource that it has ownership of or jurisdiction over, whether it be land, trees, water, animal or plant species, or some other resource.

The Proposed Action would include the use of steel, gravel, wood, and other non-renewable material to construct the wind turbines, access roads, electrical power line, operations and maintenance facilities, and substations. Materials would come from outside sources or from local borrow pits. Petroleum-based fuels for vehicles and equipment would also be required. Development of the proposed action would result in the irretrievable commitment of a small amount of commercial forestry land. These commitments are irretrievable rather than

irreversible because the project could be decommissioned in the future and previous land uses restored. In addition, many materials used to construct and operate the project could be recycled upon decommissioning.

3.17 INTENTIONAL DESTRUCTIVE ACTS

BPA, like other utilities and government agencies, experiences incidents of criminal activity such as vandalism, theft and burglary. Some of these incidents cause significant operational and

financial impacts to the agency. Between 2007 and 2009, BPA experienced approximately 128 incidents of burglary, theft and vandalism. These incidents cost the agency approximately $1,624,110. The BPA Security and Emergency Response Office works closely with Federal Law Enforcement Agencies and, local and state police to ensure all incidents are appropriately reported, investigated and prosecuted. This effort has resulted in the return of BPA property and in court ordered restitution to be paid by the convicted parties.

Issues concerning international terrorist activity, domestic terrorism and sabotage remain a significant concern for BPA and other critical infrastructure operators. BPA maintains close liaison with Federal Law Enforcement Agencies, Department of Homeland Security, and Local jurisdictions to ensure effective communication of information and intelligence.

The impacts from vandalism and theft, though expensive, do not generally cause a disruption of service to the area. Stealing equipment from electrical substations, however, can be extremely dangerous. In fact, nationwide, many would-be thieves have been electrocuted while attempting to steal equipment from energized facilities. On Oct. 11, 2006, a man in La Center, Washington, was electrocuted while apparently attempting to steal copper from an electrical substation.

Federal and other utilities use physical deterrents such as fencing, cameras, and warning signs to help prevent theft, vandalism and unauthorized access to facilities. In addition, through its Crime Witness Program, BPA offers up to $25,000 for information that leads to the arrest and conviction of individuals committing crimes against BPA facilities. Anyone having such information can call BPA's Crime Witness Hotline at (800) 437-2744. The line is confidential, and rewards are issued in such a way that the caller's identity remains confidential.

Acts of sabotage or terrorism on electrical facilities in the Pacific Northwest are rare, though some have occurred. These acts generally focused on attempts to destroy large transmission line steel towers. For example, in 1999, a large transmission line steel tower in Bend, Oregon was toppled.

Depending on the size and voltage of the line, destroying towers or other equipment could cause electrical service to be disrupted to utility customers and end users. The effects of these acts would be as varied as those from the occasional sudden storm, accident or blackout and would depend on the particular configuration of the transmission system in the area. While in some situations these acts would have no noticeable effect on electrical service, in other situations,

service could be disrupted in the local area, or if the damaged equipment was part of the main transmission system, a much larger area could be left without power.

When a loss of electricity occurs, all services provided by electrical energy cease. Illumination is lost. Lighting used by residential, commercial, industrial and municipal customers for safe movement and security is affected. Residential consumers lose heat. Electricity for cooking and refrigeration is also lost, so residential, commercial, and industrial customers cannot prepare or preserve food and perishables. Residential, commercial, and industrial customers experience comfort/safety and temperature impacts, increases in smoke and pollen, and changes in humidity, due to loss of ventilation. Mechanical drives stop, causing impacts as elevators, food preparation machines, and appliances for cleaning, hygiene, and grooming are unavailable to residential

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customers. Commercial and industrial customers also lose service for elevators, food preparation, cleaning, office equipment, heavy equipment, and fuel pumps.

In addition, roadways experience gridlock where traffic signals fail to operate. Mass transit that depends on electricity, such as light rail systems, can be impacted. Sewage transportation and treatment can be disrupted.

A special problem is the loss of industrial continuous process heat. Electricity loss also affects alarm systems, communication systems, cash registers, and equipment for fire and police departments. Loss of power to hospitals and people on life-support systems can be life-threatening.

Overhead transmission conductors and the structures that carry them are mostly on unfenced utility rights-of-way. The conductors use the air as insulation. The structures and tension between conductors make sure they are high enough above ground to meet safety standards. Structures are constructed on footings in the ground and are difficult to dislodge.

While the likelihood for sabotage or terrorist acts on the Proposed Action or alternatives is difficult to predict given the characteristics of the project, it is unlikely that such acts would occur. If such an act did occur, it could have a significant impact on the transmission system or electrical service because the North Bonneville-Midway 230-kV transmission line is an integral part of BPA's transmission system; however, any impacts from sabotage or terrorist acts likely could be quickly isolated. The Department of Energy, public and private utilities, and energy resource developers include the security measures mentioned above and others to help prevent such acts and to respond quickly if human or natural disasters occur.

3.18 ADVERSE EFFECTS THAT CANNOT BE AVOIDED

Implementation of the Proposed Action would result in some adverse impacts that cannot fully be avoided even with implementation of mitigation measures. However, most of these impacts would occur during the construction phase of the Proposed Action and thus would be temporary. For the proposed wind project, the unavoidable adverse impacts include:

• Short-term earth-disturbing activities of 108 acres during construction (56 acres of permanent disturbance and 52 acres of temporary disturbance). These impacts, while unavoidable, would take place in landscape of managed timber lands which has for many years and will continue to be a fragmented environment with ongoing disturbance. During construction, direct mortality to birds could occur through nest disturbance.
• Short-term potential for landslide and erosion during construction and operations.
• Short-term impacts to air quality similar to that of existing logging operations during construction.
• Short-term and localized impacts to water resources during construction and operation of the project.

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• Short-term and minimal risk of unintentional or accidental fire or explosion or discharge to the environment during both construction and operations.
• Short-term and minimal delays in traffic in some areas during construction.
• Short-term and minimal risk of accident during construction.
• Short-term accidental fire, release of hazardous materials, or injury could occur during construction, operation, or decommissioning of the project.
• Short-term noise impacts during construction is exempt so long as it occurs during daytime hours, and operation noise is predicted to be less than the nighttime threshold of 50 dBA Leq per Washington State and Skamania County regulations.
• Long-term visual impact to surrounding areas where turbines were visible, including some areas inside the Columbia River Gorge National Scenic Area.
• Long-term mortality to birds and bats through turbine collisions.
• Long-term yet minor unavoidable adverse impacts to energy or natural resources through the consumption of fossil fuels for construction and maintenance of the Proposed Action.
• Long-term socioeconomic impacts are considered to be beneficial as The Project would provide employment during construction and operation. Additionally, increased tax revenues would offset the impacts to public services and utilities.
• Permanent loss, temporary disturbance and fragmentation of existing habitat for a number of wildlife species.

Comment: Without a socio-economic impacts analysis, the statement "Long-term socioeconomic impacts are considered to be beneficial" is baseless and not supported by any data or analysis. There is nothing in the DEIS to show just how much Skamania County would benefit, or not, from this proposed wind farm. What is clear, from previous statements, is that Klickitat County stands to reap most of the benefits for their school district.

Under the No Action alternative, although many of the potential impacts of the Proposed Action would not occur, the existing project area would continue to be utilized for commercial forestry operations. Additionally, BPA's North Bonneville-Midway 230-kV and the Underwood Tap to Bonneville Powerhouse 1-North Camas 115-kV transmission lines would continue to remain in place and would be subject to impacts related to the need for ongoing repairs and maintenance of these existing transmission lines.

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Comment: The proponent for this project is being very truthful here. There are "many…potential impacts of the Proposed Action…" that would "not occur" if this wind farm proposal was denied by EFSEC!! This would be a good thing for the environment and for our community. BPA has failed to do a cumulative impact analysis of the existing transmission lines for the DEIS and this is a fatal flaw. BPA has also failed to do a cumulative impact analysis of their FUTURE actions in regard to these existing transmission lines and BPA's proposals to put in NEW, and BIGGER transmission lines. [I will address this in another document.] This is just one very important reason why this Whistling Ridge wind farm proposal should be denied. BPA is a federal agency and is subject to NEPA and its cumulative impacts analyses. BPA has, fatally for the DEIS, not done its job. This DEIS should be sent back to BPA and SDS for further analysis and data-gathering.

CUMULATIVE IMPACT ANALYSES MATTER!

/e-signature/Mary J. Repar
27 August 2010

RECEIVED
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COMMUNITY DEVELOPMENT
DEPARTMENT

BEFORE THE HEARING EXAMINER
FOR SKAMANIA COUNTY

In the Matter of the Appeals of	)	NO. SEP-08-35
	)	
Friends of the Columbia Gorge, Save our Scenic Area, Gifford Pinchot Task Force, and Columbia Riverkeeper	)	FINDINGS, CONCLUSIONS, AND DECISION
	)	
Of a SEPA DNS.	)	

SUMMARY OF DECISION

The appeals of the October 8, 2008 Determination of Nonsignificance issued for the County's proposed zoning text and map amendments are **GRANTED.**

SUMMARY OF RECORD

Background

Skamania County seeks to amend the text and maps of its zoning code (Title 21 Skamania County Code) consistent with its adopted Comprehensive Plan and subarea plans. The County issued a Determination of Nonsignificance for the proposed amendments (known as the Planning Commission Recommended Draft) on October 8, 2008. Save our Scenic Area, and a group of organizations including Friends of the Columbia Gorge, Gifford Pinchot Task Force, and Columbia Riverkeeper filed appeals of the Determination of Nonsignificance on October 22, 2008.

Hearing Date

The Hearing Examiner for Skamania County held an open record hearing on the appeals on January 21 and 22, 2009.

Testimony

The following individuals presented testimony under oath at the open record appeal hearing:

1. Karen Witherspoon, Director of Community Development, Skamania County
2. Heather Watson, Assistant Planner, Skamania County
3. Dean Apostol, Landscape Architect[1]
4. K. Shawn Smallwood, Ph.D., Ecologist[2]
5. Richard James, E-Coustic Solutions, Acoustical Engineer[3]
6. Nina Pierpont, M.D., Ph.D., Physician[4]
7. Nathan Baker, Staff Attorney, Friends of the Columbia Gorge

[1] Please refer to Exhibit G.1 for Mr. Apostol's qualifications.
[2] Please refer to Exhibits G.4 and C.21 for Mr. Smallwood's qualifications.
[3] Please refer to Exhibit 7.1 for Mr. James' qualifications.
[4] Please refer to Exhibit 1.1 for Dr. Pierpont's qualifications.

Legal Counsel

- Attorney J. Richard Aramburu represented Appellant Save our Scenic Area
- Attorney Richard A. Poulin represented Appellants Friends of the Columbia Gorge, Gifford Pinchot Task Force, and Columbia Riverkeeper
- Attorney Peter Banks, Skamania County Prosecutor, represented Skamania County

Exhibits

The documents listed on Appendix A to this Decision (Exhibit List) were admitted into the record. Additional documents were filed on January 26, 2009, after the Hearing Examiner had closed the record to new evidence. The Hearing Examiner did not consider the January 26 documents and they are not admitted into the record.

In addition to the documents identified in Appendix A, the Hearing Examiner considered the following legal memoranda:

- Pre-Hearing Brief of Appellants Friends of the Columbia Gorge, Inc.; Gifford Pinchot Task Force; and Columbia Riverkeeper (December 9, 2008)
- Opening Brief of Save our Scenic Area (December 9, 2008)
- Response Brief of Skamania County (January 2, 2009)
- Reply Brief of Appellants Friends of the Columbia Gorge, Inc.; Gifford Pinchot Task Force; and Columbia Riverkeeper (January 15, 2009)
- Citations to Exhibits of Appellants Friends of the Columbia Gorge, Inc.; Gifford Pinchot Task Force; and Columbia Riverkeeper (January 29, 2009)
- SOSA's Exhibits Citations and References (January 29, 2009)

The Hearing Examiner also considered the 2007 Comprehensive Plan, the Carson Community Subarea Plan, the Swift Subarea Plan, the West End Community Comprehensive Subarea Plan, and the Skamania County Code.

Upon consideration of the testimony and exhibits admitted at the open record hearing, the Hearing Examiner enters the following Findings and Conclusions:

FINDINGS

General

1. Skamania County seeks to amend the text and maps of its zoning code (Title 21 Skamania County Code) consistent with its adopted Comprehensive Plan and subarea plans. The amendments would apply to all lands within unincorporated Skamania County that are not designated as Columbia River Gorge National Scenic Area (hereafter, "National Scenic Area" or "Scenic Area").[5] The Scenic Area generally includes the southern portion of Skamania County, although there are "islands" of urban area (including unincorporated land) that are not within the Scenic Area. Thus, the proposed

[5] Land uses within the National Scenic Area are governed by Title 22 of the Skamania County Code (Columbia River Gorge National Scenic Area Ordinance).

amendments would apply to some parcels that, while not designated as Scenic Area, are surrounded by Scenic Area lands. *AR-50; Testimony of Ms. Witherspoon; County Exhibit 2.*

2. In the testimony and written materials there are references to two proposed drafts of Title 21 – the (1) Board-Initiated Draft and the (2) Planning Commission Recommended Draft. The Board-Initiated Draft was the first draft of the proposed amendments. The Planning Commission Recommended Draft contains the changes to the first draft that were recommended by the Planning Commission after considering public comment. The changes are substantial. The draft of Title 21 that is under review is the Planning Commission Recommended Draft, found in the record at AR-72 to 226.[6] *AR-51.*

3. According to the 2007 Comprehensive Plan, Skamania County is approximately 1,070,080 acres in area. It is the only county in Washington State that spans the crest of the Cascade Mountains. Approximately 80 percent of the County (855,000 acres) is within the Gifford Pinchot National Forest. Approximately five percent of the County (59,876 acres) is owned by the State of Washington.[7] Approximately 85,000 acres of the remaining land is within the National Scenic Area. *2007 Comprehensive Plan, pages 17-18.*

4. The planning documents in effect for the portions of Skamania County outside of the National Scenic Area include the 2007 Comprehensive Plan, the Swift Subarea Plan, the West End Community Subarea Plan, and the Carson Community Subarea Plan. With respect to those lands governed only by the 2007 Comprehensive Plan (i.e., not within a subarea), there are three land use designations: Rural I (2,758 acres), Rural II (13,440 acres), and Conservancy (817,826 acres). *AR-57.* The zoning classifications currently in effect for those designations include the following: Residential 1, 2, 5, and 10, Rural Estate, Community Commercial, Commercial Recreation, Industrial, Resource Production 10 and 20, Natural, and Unmapped. *SCC 21.24.021.* In addition, there are two zoning classifications applicable to the Northwestern Lake area – Residential 2 and Residential 5. *SCC 21.55.*

5. The Swift Subarea includes approximately 92,191 acres, and the Comprehensive Plan indicates that approximately 34,000 of the acres are privately owned.[8] There are six land use designations within the Swift Subarea, including Swift Recreational, Swift Commercial Resource Lands, Swift Forest Lands 20, Mountain Recreational 20,

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[6] The proposed zoning map is found at AR-232.

[7] The County provided slightly different numbers in its brief – a total land area of 1,073,370 acres, with 932,034 acres consisting of state or federal public lands and the remaining 141,336 acres (13 percent) privately owned. *Response Brief of Skamania County, page 1.* These numbers do not affect the outcome of the decision.

[8] There is some discrepancy between the total acreage reported in the Environmental Checklist and the total acreage reported in the Comprehensive Plan. The total acreage in this finding is based on the Environmental Checklist. It is not clear whether the acreage of privately owned land has also changed from what is reported in the Comprehensive Plan.

Mountain Recreational 10, and Mountain Recreational 5. *2007 Comprehensive Plan, page 18; Swift Subarea Plan, pages 14 – 21; AR-57.*

6. The West End Subarea includes approximately 60,000 acres, and the Comprehensive Plan indicates that approximately 31,000 of the acres are privately owned.[9] There are seven land use designations within the West End Subarea, including Rural Lands 2, Rural Lands 5, Rural Lands 10, Forest Lands 20, Commercial Resource Lands, Neighborhood Commercial, and Community Commercial. *2007 Comprehensive Plan, page 18; West End Subarea Plan, Figure 3-1; AR-57.*

7. The Carson Subarea includes approximately 2,000 acres. There are four land use designations within the Carson Subarea, including High Density Residential, Rural Residential, Rural Estate, and Business Center. *AR-57; Carson Subarea Plan, pages 2 – 5.*

8. Much of Skamania County is classified as "Unmapped", meaning that no zoning has been assigned.[10] Within unmapped areas, "all uses which have not been declared a nuisance by statute, resolution, ordinance, or court of jurisdiction are allowable." *SCC 21.64.020.* Land uses within unmapped areas are not subject to the standards or conditions of the zoning code. *Id.*

9. The unmapped lands in Skamania County are mostly commercial forestland or Gifford Pinchot National Forest. According to County Ordinance No. 2008-01, at least 15,000 acres of the unmapped lands are privately owned. *Exhibit H.4; Testimony of Ms. Witherspoon.*

10. Skamania County has had a moratorium in effect since July 10, 2007 (date of adoption of most recent Comprehensive Plan) on the following development activities on unmapped lands:

    - The acceptance and processing of any building, mechanical or plumbing permits on any parcel of land that is 20 acres or larger that was created by deed since January 1, 2006
    - The acceptance and processing of land divisions
    - The acceptance and processing of SEPA checklists related to forest practice conversions

[9] There is some discrepancy between the total acreage reported in the Environmental Checklist and the total acreage reported in the Comprehensive Plan. The total acreage in this finding is based on the Environmental Checklist. It is not clear whether the acreage of privately owned land has also changed from what is reported in the Comprehensive Plan.

[10] Prior to 2007, the County's Comprehensive Plan only addressed the southern portion of Skamania County. *2007 Comprehensive Plan, pages 10 and 21.*

Exhibit H.4. The reasons for the moratorium include that much of the unmapped land is on rugged terrain that is not served by County roads or electricity, and that many areas are prime habitat for federal or state listed species of fish and wildlife. *Exhibit H.4.*

11. The Planning Commission Recommended Draft (and associated zoning map) would accomplish the following:

- Zone all previously unmapped land, including the land under federal ownership.
- For the land outside of the subareas, eliminate the Resource Production 10 and 20 zones and add Business Park, Forest Lands 20, and Commercial Resource Lands 40 zones.
- Zone the Swift Subarea consistent with the Swift Subarea Plan (zoning designations: Mountain Recreational 5, 10, and 10, Swift Forest Lands 20, Swift Commercial Resource Lands 40, and Swift Recreation).
- Zone the West End Subarea consistent with the West End Subarea Plan (zoning designations: Rural Lands 2, 5, and 10, West End Forest Lands 20, West End Commercial Resource Lands 40, and Neighborhood Commercial).
- Add a new section to the zoning code (SCC 21.70.170) on alternate energy systems, which would apply to the installation of any alternate energy facility located within unincorporated Skamania County, except for the General and Special Management Areas of the National Scenic Area (*AR-203*).

A list of all of the proposed zoning designations and the acreage allocated to each is set forth in the Environmental Checklist at AR-56 to 57. *AR-50, 51, 56, and 57; County Exhibit 2.*

12. The proposed Alternate Energy Systems section contains standards relating to the following facilities:

- Rooftop Wind Energy Systems[11]
  Key provisions:
  - One per structure
  - Maximum height: 15 feet above maximum for structure
- Small-Scale Wind Energy Facilities[12]
  Key provisions:
  - No limit on number
  - Maximum height: 65 to 80 feet
  - Minimum property line setback: 1.1 times the height
- Large-Scale Wind Energy Facilities[13]

[11] The proposed definition for rooftop wind energy system is "a small wind energy system that is installed onto a structure supplying power directly to that structure." *AR-82.*
[12] The proposed definition for small-scale wind energy facilities is "Wind turbines which will be used primarily to reduce on-site consumption of utility power to farms, homes, or businesses." *AR-83 (SCC 21.08.010).*

Key provisions:

- No limit on number
- Maximum height: 500 feet
- Minimum property line setback (exterior): 50 feet plus height of structure
- Minimum setback from residential structures or zones: one-half mile

- Large-Scale Solar Facilities[14]
- Geothermal Resources[15]
- Bio-Energy Facilities[16]

Key provision:

- Minimum setback from residential structures or zones: one-half mile

AR-203 to 214 (SCC 21.70.170).

13. The current zoning ordinance does not contain any standards relating to alternate energy systems, although geothermal energy facilities are identified as conditional uses in the R-1, R-2, R-5, R-10, Rural Estate, and Resource Production zones. *SCC 21.28.030, 21.32.031, 21.36.031, 21.40.030, 21.44.030, and 21.56.030.* The County would regulate wind power facilities as "utilities" under the existing code. *Testimony of Ms. Witherspoon.* Public Facilities and Utilities[17] are allowed in the residential and Rural Estate zones. Semi-Public Facilities[18] are conditionally allowed in the residential and Rural Estate zones, and Semi-Public Facilities and Utilities are conditionally allowed in the Resource Production zones. *SCC 21.28.020 and -.030, 21.32.020 and -.031, 21.36.020 and -.031, 21.40.020 and .030, 21.44.020 and -.030, and 21.56.030.* The Hearing Examiner was not able to locate any use classification relating to private utility systems.

14. Under the Planning Commission Recommended Draft, rooftop wind turbines would be allowed outright in the residential zones, and small-scale wind energy facilities would be

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[13] The proposed definition for large-scale wind energy facility is "An electricity-generating facility consisting of wind turbines or other such devices and their related or supporting facilities that produce electric power from wind to be sold and used off-site." *AR-79 (SCC 21.08.010).*

[14] The proposed definition for large-scale solar facilities is "photovoltaic energy systems and/or solar thermal technology energy systems that use reflective materials that concentrate the sun's heat energy to drive a generator that produces electricity." *AR-79 (SCC 21.08.010).*

[15] The proposed definition of geothermal energy facilities is "A facility used to produce electricity by extracting and converting the natural thermal energy from the earth." *AR-78 (SCC 21.08.010).* There are no standards for Geothermal Resources other than compliance with RCW 78.60.

[16] The proposed definition for bio-energy is "Includes a range of biomass feedstock and technologies for conversion of these materials into useful energy." *AR-76 (SCC 21.08.010).*

[17] "Facilities which are owned, operated, and maintained by public entities which provide a public service required by local governing bodies and state laws." *SCC 21.08.010 (70).*

[18] "Facilities intended for public use which may be owned and operated by a private entity." *SCC 21.08.010 (73).*

allowed in the residential zones with administrative review.[19] In addition, "public, semi-public and/or private facilities and/or utility systems" would be allowed outright in the residential zones. Although the proposed definitions for "public facilities and utility systems" and "semi-public facilities and utility systems" include "electrical transmission, distribution and generation facilities", the electrical generation facilities that fall under more restrictive definitions (such as wind turbines) would not be regulated as a "public, semi-public and/or private facilities and/or utility systems." Thus, a large-scale wind energy facility would *not* be allowed outright in a residential zone.[20] *AR-81, 82, 99, 100, 102, 103, 105, 106, 108, 109; Testimony of Ms. Witherspoon.*

15. Although alternative energy systems would be regulated under the Alternative Energy Systems section of the zoning code, it is not clear how certain traditional electricity generating facilities, such as coal-fired plants, would be regulated. The Planning Commission Recommended Draft does not contain use categories or specific standards for such facilities. If categorized as "public, semi-public and/or private facilities and/or utilities" they would be allowed outright in most zones. *See generally AR-76-84; Opening Brief of Save our Scenic Area, page 10.*

16. Under the Planning Commission Recommended Draft, large-scale wind energy facilities and bio-energy facilities (the most controversial uses) would not be allowed outright in any zone.[21] Instead, they would be conditional uses in the following zones:

- Industrial
- Forest Lands 20 (large-scale wind energy only)
- Commercial Resource Lands 40
- Carson Industrial Zone (large-scale wind energy only)
- West End Forest Lands 20 (large-scale wind energy only)
- West End Commercial Resource Lands 40
- Swift Forest Lands 20 (large-scale wind energy only)
- Swift Commercial Resource Lands 40

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[19] Small-scale wind energy facilities would not be allowed within the High Density Residential Zone of the Carson subarea. *AR-139.*

[20] To avoid confusion, the Hearing Examiner urges the County to clarify this issue in the final version of the zoning code. Appellant SOSA made much of the fact that the language "electrical transmission, distribution and generation facilities" could be read as including wind-energy and other alternative energy facilities. However, the Hearing Examiner considers this to be a language problem (albeit a significant language problem) rather than an environmental review problem. It is clear that the County intends to regulate wind-energy and other alternative energy facilities in accordance with the stricter standards established for those facilities, and it is the Hearing Examiner's opinion that no reviewing official looking at the larger statutory scheme could reasonably interpret otherwise. Consequently, the Hearing Examiner will not evaluate the environmental impacts of the proposed zoning code on the false assumption that large-scale wind energy facilities would be allowed outright in the residential zones.

[21] Under the prior Board-Initiated Draft, large-scale wind energy facilities would have been administrative review uses in some zones, and allowed outright in others. *See e.g., AR-121, 128, and 148.*

AR-122, 125, 128, 148, 161, 163, 179, 182. None of the zones identified above would allow residential uses.

17. Although the 2007 Comprehensive Plan specifies that the Hearing Examiner "may deny a conditional use permit if he or she finds the use is inappropriate for the area" (2007 Comprehensive Plan, Policy LU.6.1, page 31), the proposed criteria for conditional use permit approval do not appear to give the Hearing Examiner discretion to deny a conditional use permit. Proposed SCC 21.16.070(A) states, "If the Hearing Examiner determines that the use is *not compatible* with permitted or existing uses in the specific area of the proposed use then the proposed use may be approved or approved with conditions to make it compatible with the area." *AR-88 (emphasis added).* The quoted language is a change from the current SCC 21.16.070, which states, "If the Hearing Examiner determines that the use is not compatible with permitted or existing uses in the specific area of the proposed use then the proposed use shall be denied." *SCC 21.16.070(A).*

18. The 2007 Comprehensive Plan does not contemplate the type of energy facilities described in the Planning Commission Recommended Draft. With respect to the Conservancy designation, which includes the majority of the County and which could be implemented by the Residential 10, Forest Lands 20, Commercial Resource Lands 40, and Natural zones (see 2007 Comprehensive Plan, Figure 2-2, and AR-97 to 98), the Comprehensive Plan lists only the following utility uses as being appropriate within the designation: "Public facilities and utilities, such as parks, public water access, libraries, schools, utility substations, and telecommunication facilities." *2007 Comprehensive Plan, page 26.*

19. Ms. Karen Witherspoon, Director of Community Development for Skamania County, was the Responsible Official for State Environmental Policy Act (SEPA) review of the code amendments. Ms. Witherspoon issued a Determination of Nonsignificance (DNS) for the Planning Commission Recommended Draft on October 8, 2008.[22] *AR 47-48.*

20. On October 7, 2008, the County mailed notice of the DNS to numerous agencies, tribes, and interested parties, including the Washington Department of Fish and Wildlife, the Washington Department of Natural Resources, the United States Forest Service, the Washington Department of Ecology, and the Columbia River Gorge Commission. *AR-64-68.* The County published the DNS in the Skamania County Pioneer on October 8, 2008. *AR-69-70.*

21. No agency submitted comments directly in response to the October 8, 2008 DNS. *Testimony of Ms. Witherspoon.* However, on June 5, 2008 the Washington Department of

[22] Ms. Witherspoon had issued a DNS for the Board-Initiated Draft also, and the DNS was appealed by some of the Appellants in this case. Ms. Witherspoon withdrew the DNS in response to the changes recommended by the Planning Commission. *See AR-50.*

Fish and Wildlife (WDFW) submitted a comment letter on the original Board-Initiated Draft that contained the following language:

> WDFW would like to re-iterate our calls for a cumulative effects analysis of regional wind power development in the Columbia River Gorge. Such an analysis is typically not possible or required during permitting and siting of an individual wind power development. The County zoning update process is the best opportunity we have to conduct this analysis of potential adverse environmental impacts from development of wind power sites, as well as associated power lines, roads, and other infrastructure. Such an analysis would evaluate the number, location, and type of turbines; the number and type of species in an area; species behavior; topography; and weather factors influencing direct and indirect mortality factors.

Exhibit C.12. No cumulative effects analysis has been conducted for the proposed zoning code amendments, although some of the specific language changes requested by WDFW (i.e., not allowing large-scale energy uses outright on commercial resource lands) have been incorporated into the Planning Commission Recommended Draft. *Exhibit C.12; AR-128.*

22. The County did not consider the June 5, 2008 WDFW letter in the environmental review of the Planning Commission Recommended Draft because of the timing of the submittal. In compiling its environmental review record the County made a distinction between those comments submitted in response to the October 8, 2008 DNS, the comments submitted in response to the DNS for the prior Board-Initiated Draft, and the comments submitted to the Planning Commission on the ordinance itself. Ms. Witherspoon testified that WDFW submitted a later letter (also not included in the environmental review record) that did not include a request for a cumulative effects analysis. *Testimony of Ms. Witherspoon.*

23. Save our Scenic Area filed an appeal of the DNS on October 22, 2008. *AR-30 through 40.* The appeal was timely under the 14-day deadline specified in the DNS. *AR-47 to 48.* The appeal alleged that the proposal (mainly, the portions relating to wind turbines) would have probable, significant, adverse impacts on the following:

- Birds and animals,
- Noise,
- Geology, soils, and topography,
- Fire and hazard,
- Relationship to existing land use plans,
- Land use and housing,
- Light and glare,
- Aesthetics and scenic resources,
- Special areas (i.e., Columbia Gorge National Scenic Area),

- Recreation,
- Transportation,
- Water Supply and Aquifers, and
- Human health.

In addition, Save our Scenic Area alleged that the County did not actually consider environmental factors prior to issuing the DNS, that the proposal would result in cumulative impacts, and that the proposal would set a precedent for further actions with significant environmental effects. Save our Scenic Area requested that the Hearing Examiner reverse the issuance of the DNS and order the County to prepare an Environmental Impact Statement (EIS). *AR-35 through 40.*

24. The organizations Friends of the Columbia Gorge, Gifford Pinchot Task Force, and Columbia Riverkeeper jointly filed an appeal of the Determination of Nonsignificance on October 22, 2008. *AR-3 through 24.* The appeal was timely under the 14-day deadline specified in the DNS. *AR-47 to 48.* The appeal alleged the following (paraphrased):

- An EIS must be prepared for non-project actions that may lead to significant adverse impacts.
- The County improperly relied on the Klickitat County FEIS.
- The County failed to consider cumulative impacts, and the precedent set by the proposal.
- The County failed to consult with other agencies.
- The County failed to consider impacts to special and sensitive areas, wildlife, rare plants, native plant communities, and water resources.
- The County failed to ensure consistency with the Comprehensive Plan, Critical Areas Ordinance, and federal wildlife laws.
- The County did not analyze the impacts of the Northwestern Lake Recreational zones, or the impacts of increased residential development.
- The County did not consider or adequately protect against impacts to cultural resources and recreation, noise impacts, fire risk, transportation impacts, and impacts associated with new energy transmission infrastructure.

AR-6 through 23.

25. The County stipulated to all Appellants' standing to challenge the DNS. There are declarations in the record from members and/or staff of Friends of the Columbia Gorge, Columbia Riverkeeper, and Gifford Pinchot Task Force, some of whom reside in Skamania County, that their interests would be adversely affected by the proposed zoning code amendments. According to the declarations, members of the Appellant organizations pursue recreational and wildlife viewing activities in or near the areas that would be affected by the zoning ordinance. *Argument of Mr. Banks; Exhibits F.4 through F.9.*

26. In response to the appeals, the County argued that the scope and impact of the zoning amendments is smaller than argued by the Appellants because most of Skamania County consists of public land, that the court decision *King County v. Boundary Review Board,* 122 Wn.2d 648 (1993) is not applicable, that the State of Washington has preempted local control over wind power projects, and that the proposed amendments would be an improvement over the existing regulatory scheme. *Response Brief of Skamania County.*

27. In the Environmental Checklist for the Planning Commission Recommended Draft, the County discloses, in general terms, the presence of mountainous terrain, water features, threatened and endangered species, bird migration routes, and unstable soils within the County, but claims that the proposal would have no impact on those and other elements of the environment because it is a non-project action. In the supplemental sheet for non-project actions, the County does not identify or analyze the impacts associated with the type of development that might result from the proposed amendments, but indicates that the impacts of future development would be determined and mitigated on a project-specific basis based on County regulations. *AR-50 to 62.*

28. Assistant Planner Heather Watson prepared the September 30, 2008 Environmental Checklist, in consultation with Ms. Witherspoon and other County staff. As background research, Ms. Watson reviewed the Planning Commission Recommended Draft of the zoning code amendments, a Final Environmental Impact Statement (FEIS) issued by Klickitat County for its Energy Overlay Zone (AR-71),[23] the August 2003 Wind Power Guidelines promulgated by the Washington Department of Fish and Wildlife (AR 351-359), and some SEPA checklists and threshold determinations issued by other jurisdictions for legislative actions. Although Ms. Watson was aware that the County had been approached regarding a possible wind energy development, she did not consider the project in preparing the Environmental Checklist because no application had been filed. *Testimony of Ms. Watson.*

29. Although both Ms. Witherspoon and Ms. Watson reviewed the Klickitat County FEIS prior to issuance of the DNS, neither provided testimony or other evidence identifying which specific portions of the FEIS or supporting studies were persuasive in making the determination. In addition, neither provided evidence suggesting that Skamania County and Klickitat County have similar environmental conditions. *See generally, Testimony of Ms. Witherspoon and Ms. Watson.* Although the checklist notes, "The Eastern portion of Skamania County that abuts Klickitat County was included in studies prepared for this [the Klickitat County] EIS" (*AR-50*), no specific references to the studies, or conclusions drawn from the studies, were provided.[24] In addition, the assumptions used by Klickitat

[23] Klickitat County is immediately east of Skamania County.

[24] By chance, the Hearing Examiner found a reference to eastern Skamania County in the Avian Study Report attached to the Klickitat County FEIS (AR-71, Appendix B). The study indicates that two avian sampling points were in southeast Skamania County, in the general vicinity of the panhandle that extends south of the Klickitat County line. The area represented by the sampling points is an extremely small fraction of Skamania County as a whole. *AR-71, Appendix B, Figure 1.*

County in evaluating the environmental impacts of the Energy Overlay Zone are not reflected in the proposed zoning text. For example, the Planning Commission Recommended Draft would allow a maximum wind turbine height of 500 feet, whereas the visual impact analysis conducted by Klickitat County was based on a height of 100 feet. *AR-205; AR-71, page 3-108.* The 500-foot height limit was not based on environmental factors; its purpose was to ensure that the type of turbines currently in existence would be conforming. *Testimony of Ms. Witherspoon.*

30. Prior to adoption of its Energy Overlay Zone, Klickitat County, like Skamania County, did not have ordinances that specifically addressed energy development. Energy facilities were reviewed on a case-by-case basis through the conditional use permit process, which, the FEIS notes, "has led to a lack of consistent policy for energy facility siting." *AR-71, page 1-3 to 1-4.* Klickitat County issued a Determination of Significance (DS) for the non-project action on June 6, 2002, and issued the FEIS in September of 2004. *Exhibit H.2; AR-71.*

31. In the FEIS, Klickitat County predicted that the Energy Overlay Zone might encourage greater energy development within the Overlay boundaries, and discourage energy development outside of the Overlay boundaries "because of the greater uncertainty in the permitting process". *AR-71, page 1-6.* The prediction turned out to be accurate. The development of wind power facilities in Klickitat County has far exceeded the projections contained in the FEIS. Whereas the FEIS assumed that four wind power projects (1,000 MW generating capacity total) would be developed in Klickitat County between 2004 and 2024, as of January 30, 2008 there were 12 wind power facilities in Klickitat County (1500+ MW) that were permitted and/or constructed or had permits pending.[25] These facilities are depicted on a Klickitat County Wind Projects Map. *Exhibit E.2.* During the past year, applications for two wind facilities in addition to those depicted on the map have been filed.[26] *Exhibits E.3, E.4, and E.5; AR-71, page 1-2.*

32. Skamania County is a member of the Mid-Columbia Economic Development District (MCEDD), and Skamania County Commissioner Paul Pearce serves on the MCEDD Board of Directors as the Chair of the Executive Committee. The counties that constitute MCEDD, in addition to Skamania County, include Klickitat County (WA), Sherman County (OR), Wasco County (OR), and Hood River County (OR). *Exhibit H.10, page 1; Exhibit H.13.*

33. The mission of MCEDD is "to promote the creation of family-wage jobs, the diversification of the economic base, and the growth, development and retention of business and industry within the five-county district." *Exhibit H.10, page 2.* One of

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County line. The area represented by the sampling points is an extremely small fraction of Skamania County as a whole. *AR-71, Appendix B, Figure 1.*

[25] Although the map depicting the wind power facilities is dated January 30, 2008, it includes some projects that did not receive SEPA threshold determinations until April of 2008. *Exhibit E.2, Exhibit 6.3, Exhibit 6.4.*

[26] It should be noted that one of those projects – the Goodnoe II Project – included approximately 320 acres of land owned by the Washington Department of Natural Resources. *Exhibit E.5.*

MCEDD's projects has been to establish the Columbia Gorge Bi-State Renewable Energy Zone (CGBREZ). "This self-declared zone was created to reduce the region's dependency on federal subsidies, bring economic vitality to the region, establish a national model for energy self-sufficiency, and provide a model of self-reliance for other rural economies in the 21st Century. *Exhibit H.10, page 9; see also Exhibit D.6.*

34. Skamania County has demonstrated its support of the CGBREZ, and its interest in wind power in particular, in several ways. On December 18, 2007, the Skamania County Board of Commissioners passed Resolution 2007-59, which "endorses the creation of the Columbia Gorge Bi-State Renewable Energy Zone." *Exhibit H.9.* In the preamble to the resolution, the Commissioners identify the counties within the zone as possessing "world class renewable energy assets including wind, sun, biomass, water and geothermal" and as desiring to develop renewable energy projects. *Exhibit H.9.* On September 30, 2008, the Skamania County Board of Commissioners passed Resolution 2008-51, which endorses several policies and actions relating to the CGBREZ, such as streamlining government permitting, encouraging investment in new energy technologies, and expanding regional transmission capacity for renewable energy projects. *Exhibit H.12; Exhibit H.11.* On December 23, 2008, the Board "discussed the need for the County to pay for Skamania County Economic Development Director to attend an upcoming conference of the American Wind Energy Association". *Exhibit H.14.*

35. Skamania County contains areas that have been mapped by the U.S. Department of Energy National Renewable Energy Laboratory as Wind Power Class 4 ("good") or better. The wind power classifications range from Class 1 to Class 7, with Class 1 referring to "poor" resource potential (wind speeds not exceeding 12.5 miles per hour at 50 meters), and Class 7 referring to "superb" resource potential (wind speeds of 19.7 miles per hour or greater). *Exhibits D.1 and D.2.*

36. To facilitate potential wind energy projects, there are existing high-voltage Bonneville Power Administration electric transmission lines in the southern portion of Skamania County and on the west side of Swift Reservoir. *Exhibits H.1, D.1, and D.2.*

37. Skamania County has not yet received an application to develop a large-scale wind energy facility. However, SDS Lumber has approached Skamania County on multiple occasions over the past several years to discuss a possible large-scale wind energy project (Saddleback Project) on its property within the County. Ms. Witherspoon met with representatives of SDS and entities such as the Bonneville Power Administration on two or three occasions for "pre-application meetings" to discuss the permitting requirements for the project. Multiple pre-application meetings have been held because of changes in the development team. The project, if developed, would consist of at least 40 wind turbines. Although the last formal pre-application meeting was approximately two years ago, individuals associated with the project have been involved in the County's code update process and the president of SDS was present at the subject appeal hearing. *Testimony of Ms. Witherspoon.*

38. The Bonneville Power Administration (BPA) has produced a map entitled "Current and Proposed Wind Project Interconnections to BPA Transmission Facilities" (Exhibit D.4). This map depicts the SDS Saddleback project as a proposed wind generation facility of 70 megawatts (MW). The project location is in the southeast corner of Skamania County. *Exhibit D.4.*

39. Although no party was able to identify any specific wind power projects located or proposed on National Forest land, United States Forest Service regulations do not preclude the development of wind energy facilities. Wind energy uses are governed by the Forest Service's special use regulations set forth in 36 CFR 251, subpart B. Applications for wind energy facilities are processed in accordance with 36 CFR 251.54, Forest Service Manual 2726 ("Energy Generation and Transmission"), and Forest Service Handbook 2709.11 ("Special Use Administration"). In September of 2007, the Forest Service proposed amendments to the manual and handbook to specifically address wind energy uses. *72 Federal Register 184; Exhibit D-9, page 4-29; see also Testimony of Mr. Apostol.*

40. Although under SEPA each project is reviewed on an individual basis, there appears to be a general consensus among reviewing officials that large-scale wind energy facilities generate the type of impacts that are appropriately reviewed through an environmental impact statement. *Exhibits E.3, E.5, 6.1, 6.2, 6.3, and 6.4; Testimony of Ms. Witherspoon.* A typical large-scale wind energy facility includes numerous turbines that are arranged in "strings", electrical collector and/or transmission lines connecting the turbines to each other and to the electrical grid, access roads to each of the turbines, electrical substations, and support structures. The following examples of wind energy proposals in the region illustrate the scale of development associated with large-scale wind energy facilities:

Lakeview Light & Power Project (Harvest Wind) in Klickitat County (as described in DS issued April 25, 2008):

- 55 turbines with a maximum height of 410 feet each
- New 3.1-mile long electrical transmission line
- New substation occupying two acres
- An operations building
- Approximately 20 miles of new access roads
- 98.6 acres of land impacted (46.6 acres of temporary construction impact and 52 acres of long-term impact)

Exhibit 6.3.

Pacific Wind Development Project (Juniper Canyon) in Klickitat County (as described in DS issued April 11, 2008):

- 167 turbines with a maximum height of 492 feet each
- Two new substations occupying a total of 15 acres
- Unpaved access roads connecting the turbines and other facilities

Exhibit 6.4.

Windy Point Partners, LLC Project (Windy Point II) in Klickitat County (as described in DS issued July 9, 2008):

- 61 turbines
- Possible new substation
- Approximately 17 miles of new access roads
- 76 acres of land permanently disturbed

Exhibit 6.1.

Northwest Wind Partners, LLC Project (Goodnoe II) in Klickitat County on private and DNR land (as described in DS issued July 11, 2008):

- 17 turbines (added to an existing facility)
- Electrical transmission lines
- 15 acres of land permanently disturbed

Exhibit 6.2.

Stateline Wind Project in Walla Walla County, Washington and Umatilla County, Oregon (as described in Federal Register, June 5, 2000):

- 250 to 450 245-foot-tall turbines, arranged in several strings and spaced 200 to 300 feet apart
- New substation occupying one to two acres
- Eight to ten miles of new overhead transmission lines
- New access roads
- Operations building
- Water tank

Exhibit 5.4.

41. The National Academy of Sciences prepared a report, Environmental Impacts of Wind-Energy Projects, which "provides analyses to help to understand and evaluate the positive and negative environmental effects of wind-energy facilities." *Exhibit 4.4, Executive Summary, page 1.* The study addresses both the ecological and the human impacts of wind energy. *Exhibit 4.4, Chapters 3 and 4.* The study also includes recommendations for improving wind-energy planning and regulation. *Exhibit 4.4, Chapter 5, page 181.* With respect to planning, the recommendations of the National Academy of Sciences include the following:

- Standardized studies should be conducted before siting and construction and after construction of wind-energy facilities to evaluate the potential and realized ecological impacts of wind development. Pre-siting studies should evaluate the potential for impacts to occur and the possible cumulative impacts in the context of other sites being developed or proposed. *Exhibit 4.4, Executive Summary, page 9.*

- Regulatory reviews of individual wind-energy projects should be preceded by coordinated, anticipatory planning whenever possible.... This planning could be

implemented at scales ranging from state and regional levels to local levels. *Exhibit 4.4, Executive Summary, pages 12-13.*

Visual impacts

42. Skamania County contains unique and exceptional scenic resources, including the National Scenic Area in the southern portion of the County, Mt. St. Helens National Monument in the northwest corner of the County, and the base of Mt. Adams near the northeast corner of the County. Photographs depicting some of Skamania County's scenic resources are provided in Exhibit B.5 and Exhibit B.1 (see page 1-6). *2007 Comprehensive Plan, pages 13 and 35; Exhibits H.3, B.5 and B.1.*

43. The Swift Subarea is one of the areas that, under the Planning Commission Recommended Draft, could be developed with large-scale wind energy facilities. The Swift Subarea Plan describes the area as "mountainous with sweeping vistas", and as being one of the gateways into the Mt. St. Helens National Volcanic Monument, "which is a popular recreation and sightseeing location bringing thousands of tourists through the Swift Subarea every year." *Swift Subarea Plan, pages 7 and 9.*

44. Based on U.S. Department of Energy National Renewable Energy Laboratory mapping, Skamania County's best wind resources are found on ridgelines that lie transect to the Columbia River Gorge. The ridges may be visible from key viewpoints. Some are near the National Scenic Area boundary. *Exhibits D.1 and D.2; Exhibit B.5; Testimony of Mr. Apostol.*

45. Wind turbines of the maximum height permitted under the Planning Commission Recommended Draft (500 feet) have the potential to dramatically alter the landscape. To put the massive scale in perspective, the tallest building in Portland is 546 feet tall. Even a turbine that is only 300 feet tall could have a blade sweep diameter comparable to the length of a Boeing 747 Jumbo Jet. *Exhibit B.5; Testimony of Mr. Apostol.*

46. The visual impact associated with wind turbines is based not only on the scale of the structures, but on the amount of land that must be cleared to accommodate them. In a forested area, the clearing required for a string of turbines can be substantial (in the example provided in Exhibit B.5, four acres per turbine). With respect to aesthetic impacts, complex, ecologically fragile, and scenic landscapes are the poorest locations for large wind turbines, and open, level, simple landscapes (such as might be found in established agricultural areas) are the best locations for large wind turbines. *Exhibit B.5; Exhibit B.4; Testimony of Mr. Apostol.*

47. Landscape aesthetics have measurable, objective standards. It is possible to map aesthetically sensitive areas and use such information when making zoning decisions. Mr. Dean Apostol, the Appellants' landscape architect, recommended mapping as one means for the County to minimize aesthetic impacts. He also recommended that the County adopt aesthetic standards. *Testimony of Mr. Apostol; Exhibit B.5.*

48. The National Forest Service (NFS) has developed a Scenery Management System for the inventory and analysis of the aesthetic values of national forests. The Scenery Management System is described in an NFS publication entitled "Landscape Aesthetics – A Handbook for Scenery Management" (Exhibit B.1). The Handbook provides a multi-step process for mapping scenic resources. The concepts and processes contained in the Handbook are not limited to national forests; some jurisdictions use the Handbook to evaluate scenic impacts. *Exhibit B.1; Testimony of Mr. Apostol.*

49. The American Wind Energy Association (AWEA) has prepared a Wind Energy Siting Handbook that provides information regarding the regulatory and environmental issues associated with the development of wind energy facilities. In its handbook, the AWEA notes that government agencies with approval authority over wind farms often require a formal assessment of the visual compatibility of a wind farm, such as the extent to which the wind farm adversely affects the aesthetics of vistas known to be important to the community. According to the AWEA, a visual impact assessment should include a characterization of baseline conditions, photo simulations, and specific investigation of the potential visual impacts based on identified changes from the baseline condition. *Exhibit D.9, pages 5-28 to 5-31; see also Exhibit B.4.*

50. The use of aesthetic criteria to control land uses is not new to Skamania County; the Columbia Gorge National Scenic Area Ordinance (Title 22 of the Skamania County Code) contains aesthetic criteria. All development applications for the National Scenic Area must include "a list of all key viewing areas from which the proposal would be visible." *SCC 22.06.060(A)(1)(e).* The key viewing areas, which are defined by ordinance, include Cook-Underwood Road, I-84, the Columbia River, the Pacific Crest Trail, and numerous other locations. *SCC 22.04.010(91).* Those developments visible from key viewing areas must comply with certain standards, including that the development must be "visually subordinate"[27] to its setting as seen from the viewing areas. *SCC 22.18.030; see also Exhibit B.4.*

51. With respect to large-scale wind energy facilities, the Planning Commission Recommended Draft does not contain standards or criteria relating to aesthetic impacts, nor does it require a visibility analysis as an application requirement. *AR- 205 to 212.*

52. Based on Geographic Information System (GIS) mapping prepared by a consultant with significant prior experience with the National Scenic Area (see Exhibit B.2), 415-foot-tall wind turbines in the southeast portion of Skamania County, but outside of the National Scenic Area, would be visible to a six-foot-tall observer from Cook-Underwood Road within the National Scenic Area and from Interstate 84 (I-84) on the Oregon side of the Gorge.[28] With respect to the western portion of the study area, the visibility would be

[27] "Visually subordinate means a description of the relative visibility of a structure or use where that structure or use does not noticeably contrast with the surrounding landscape, as viewed from a specified vantage point, generally a key viewing area. As opposed to structures that are fully screened, structures that are visually subordinate may be partially visible. They are not visually dominant in relation to their surroundings...." *SCC 22.04.010(181).*

[28] Within the study area, I-84 passes through the Hood River Urban Area. *Exhibit B.3.*

greatest significant from Cook-Underwood Road (i.e., only in the northernmost portion of the study area would turbines not be visible), but not as significant from I-84 (i.e., only in the southernmost portion of the study area, adjacent to the NSA boundary, would turbines be visible). With respect to the eastern portion of the study area, which generally corresponds to the panhandle lying south of Klickitat County, turbines would be visible from I-84 at nearly all locations, and would be visible from Cook-Underwood Road at locations near the NSA boundary. *Exhibit B.3.*

53. A viewshed analysis was prepared specifically for the Saddleback project, which, if developed, would be located in the southeast portion of Skamania County. According to the submitted site plan, 44 wind turbines would be located along some north-south ridgelines located immediately north of the Scenic Area boundary.[29] The turbines would be visible for several miles, and would be particularly visible from areas to the west and north of the project and from the south side of the Columbia River Gorge (I-84 and environs). Views from Cook-Underwood Road would also be affected. *Exhibits 2.2a, 2.2b, and 2.2c.*

Wildlife Impacts

54. Wind turbines typically kill at least some birds and bats. Bird fatalities are generally caused by collision with the turbines or associated infrastructure. Bat fatalities can be caused by collision or by "barotrauma" from air pressure changes near the turbines.[30] The extent of the impact depends on factors such as the type of species present and how they use the landscape, the type of habitat that is provided (forested areas are more sensitive), and design features such as the height of the turbines. *Testimony of Mr. Smallwood; Exhibit C.14; see generally, Exhibit 4.4, Chapter 3.*

55. Klickitat County had an Avian Study Report (WEST, 2003) prepared as part of its FEIS. The purpose of this study was to "provide data on avian use of potential wind power development areas in Klickitat County." *AR-71, Appendix B, page 1.* In addition to data on avian use, the study included predictions of the number of collisions per turbine by avian group for each of six study regions. *AR-71, Appendix B, page 3.* Two of the avian sampling points were in southeast Skamania County, in the general vicinity of the panhandle that extends south of the Klickitat County line. *AR-71, Appendix B, Figure 1.* However, the study did not include collision predictions with respect to the Skamania County sites. *AR-71, Appendix B, page 3 and Figure 1.*

56. Overall, the WEST study predicted relatively low avian fatality rates throughout Klickitat County, with the highest rate of raptor fatalities west of U.S. 97 and within 1.5 miles of the Columbia River (0.058 per year per turbine), the lowest rate of raptor fatalities east of

[29] It should be noted that because no formal application has been submitted to the County, the site plan submitted by the Appellants might not represent the layout ultimately reviewed.

[30] Pulmonary barotrauma is lung damage due to the expansion of air in the lungs that is not accommodated by exhalation. In a study of bat fatalities from a wind energy facility in Alberta, Canada, more than 90 percent of the bats exhibited internal hemorrhaging and pulmonary lesions consistent with barotrauma, and approximately half showed no sign of external injury such as would be caused by direct collision. *Exhibit C.14.*

Rock Creek and greater than 1.5 miles from the Columbia River. The prediction for passerines was the same for all study areas, at 1.6 fatalities per year per turbine. The prediction for all birds combined was similar for the study areas, with annual fatalities per turbine ranging from 1.624 east of Rock Creek and more than 1.5 miles from the Columbia River and 1.725 east of Rock Creek and less than 1.5 miles from the Columbia River. *AR-71, Appendix B, Table 32.*

57. The Appellant's wildlife expert, Dr. Kenneth Smallwood, is uniquely qualified to testify on the issue of the effects of wind turbines and other types of infrastructure on wildlife. He has a Ph.D in ecology, and has served as a consultant to the California Energy Commission, conducting research on bird behavior in the Altamont Pass Wind Resources Area. He has published 56 peer-reviewed articles, including three specifically relating to Altamont Pass. *Exhibit G.4.* Mr. Smallwood submitted that the Klickitat County FEIS underestimates the potential impact of wind turbines on birds. Mr. Smallwood reviewed the avian and bat fatality rates of the Big Horn Wind Energy Project, a 133-turbine facility that was recently constructed in Klickitat County. During the environmental review process, the developer of the Big Horn facility predicted low fatality rates for birds and bats, based in part on the results of the Klickitat County FEIS.[31] The project was then constructed and avian and bat mortality was monitored for a year. Mr. Smallwood evaluated the monitoring results, and developed estimates of actual bird and bat mortality. With respect to raptors, he found that the number of deaths was 12 to 16 times higher than the number predicted in the preliminary studies. With respect to bats, he found that the number of deaths was more than two times higher than originally predicted. *Exhibits C.19 and C.22.*

58. Although the WEST study underestimated the avian mortality associated wind power facilities, it provided some general conclusions that are relevant to the appeals:

- Avian mortality would be reduced by siting turbines where lowest avian use occurs
- Avian mortality would be reduced by siting turbines away from riparian areas
- Avian mortality would be reduced by siting turbines in agricultural areas rather than in native landscapes
- Impacts to raptors would be reduced by avoiding siting turbines at the crests and edges of hilltops, where raptors use the uplift created by the cliff face. "A requirement to consider avoiding wind turbine placement within 50 meters of hilltop rim edges is recommended to be included in the Energy Overlay Comprehensive Plan."

AR-71, page 3-64.

[31] The estimates associated with the Big Horn facility correlate fairly closely with the estimates contained in the Klickitat County FEIS. In the Avian Study Report, WEST estimated that the number of raptor deaths per turbine per year would range from 0.022 to 0.058 depending on geographic location. The preliminary Big Horn studies estimated that the number of raptors killed per year by the entire project would be three to four, or 0.022 to 0.03 raptors per turbine. *AR-71, Appendix B, Table 32; Exhibit C-19.*

59. Skamania County is predominately forested. Forested areas support more special-status species that would be vulnerable to turbine collision. *Exhibit C.21, page 15; Testimony of Mr. Smallwood.*

60. Skamania County's planning documents acknowledge that at least portions of the County provide habitat for protected species. For example, according to the Swift Subarea Plan, the Swift area may contain or provide habitat for the following bird and bat species that are federally listed as Endangered, Threatened, or Species of Concern: Bald Eagle, Northern Spotted Owl, Pacific Townsend's Big-Eared Bat, and Peregrine Falcon. *Swift Subarea Plan, page 8.* No evidence was presented that the County considered the presence of protected species when determining which zones should allow large-scale wind energy development.

61. Turbine collision is not the only impact to wildlife associated with large-scale wind energy facilities. The infrastructure associated with wind turbine development (roads, transmission lines) has potential to adversely affect wildlife by fragmenting habitat. *Exhibit 4.4, Chapter 3, pages 105-108.* The Planning Commission Recommended Draft and proposed zoning map do not restrict energy uses to areas where infrastructure is available or could be developed with minimal environmental impact. Although energy uses such as large-scale wind energy facilities would be conditionally allowed in substantial portions of the County, the existing road and electricity infrastructure is extremely limited or nonexistent in some areas. *Exhibit H.4; County Exhibit 2.*

62. Pine Creek, located within the Swift Subarea, provides spawning grounds for bull trout, a federally listed species. The U.S. Fish and Wildlife Service considers the Pine Creek bull trout population to be "especially important in achieving recovery for this species." *Exhibit C.17; Swift Subarea Plan, page 8.* Pine Creek is "especially vulnerable to land management activities on account of its steep slopes and highly erosive volcanic soils." *Exhibit C.17, page 2; see also Exhibit C.16.*

63. There are map-based tools that can be used on a countywide level to determine where energy facilities and other development would minimize impacts to wildlife. For example, Mr. Smallwood has developed an indicators approach for assessing the impacts of wind power development on bird species at any location in California. *Exhibit C-21, pages 4-5.*

64. The Planning Commission Recommended Draft contains measures to protect wildlife from impacts associated with large-scale wind energy development. These include the following (paraphrased):

- Take "reasonable efforts" to preserve existing trees, vegetation, and water resources
- Flag construction limits
- Design wind energy structures to discourage bird nesting, by using tubular rather than lattice supports, avoiding use of external ladders and platforms, avoiding use of guy wires, and using bird deterrent devices on guy wires

- Control weeds to avoid creating raptor habitat
- Use anti-perching devices on transmission lines
- Set back turbines at least 2,500 feet from known nesting sites of state and/or federally threatened or endangered raptor species and at least 1,500 feet from wetlands identified on the National Wetlands Inventory maps
- Monitor raptor nest activity prior to commencing construction
- Survey avian use of the site prior to finalizing site design
- Remove animal carcasses to avoid attracting foragers
- Should consult with WDFW before making final siting decisions
- Restore temporarily disturbed areas

AR-209 to 210. The measures do not include minimum setbacks from ridgelines.[32]

65. Although all development within the County would be subject to the critical areas code, the County did not present any evidence that it evaluated the presence of critical areas prior to establishing zoning districts or allowed uses within the zones. *Testimony of Ms. Witherspoon.*

66. The 2007 Comprehensive Plan contains policies that support protecting wildlife on a planning level rather than on a project-specific basis. These include the following:

> Policy E.4.2: Develop strategies for preserving, protecting or restoring important habitats and corridors, particularly if they are at risk of significant degradation. Some strategies may include ... promoting land use plans and development that avoid impacts on habitat....
>
> Policy E.4.4: Coordinate with other jurisdictions and agencies to protect environmentally critical habitats, particularly ecosystems and watersheds that span jurisdictional boundaries.

2007 Comprehensive Plan, page 46.

Air quality

67. According to the Klickitat County FEIS, biomass involves combustion of an organic fuel (such as wood), and consequently the emissions from such facilities include nitrogen oxides, carbon monoxide, particulate matter, sulfur dioxide, greenhouse gases, and toxic air pollutants (i.e., toluene, formaldehyde, etc.). *AR-71, page 3-9.* The FEIS notes that both biomass and natural gas-fired plants could affect visibility within the National Scenic Area, even though the Scenic Area is not within the overlay, and recommends the use of state-of-the-art air pollution technologies to mitigate impacts. *AR-71, page 1-7.*

[32] The County Critical Areas Ordinance would also not require a minimum setback from the edge of a bluff or mountain ridge. Development on slopes steep enough to be classified as a Landslide Hazard Area requires preparation of a geotechnical report. No minimum setback is specified. *SCC 21A.06.020.*

68. The United States Forest Service (USFS) monitors air quality within the Scenic Area, as well as within national forests in the Pacific Northwest region, through chemical analysis of lichen tissue. Based on study conducted between 1993 and 2001, the USFS found that mean concentrations of sulfur, nitrogen, lead, cadmium, copper, and zinc within the Scenic Area were significantly higher than means within the national forests, and were comparable to levels found within urban areas. *Exhibit A.3.* Cultural resources such as rock art might be adversely affected by the air pollution. *Exhibits A.1 and A.5.* Other ecological effects associated with nitrogen deposition are described in Exhibit A.4. *Exhibit A.4.*

69. The visibility within the Columbia Gorge National Scenic Area is poor compared to the conditions within many national parks and scenic areas in the western U.S., and is comparable to conditions within locations in California and in northwest Washington. *Exhibit A.1, pages 3 and 4.*

70. The Planning Commission Recommended Draft includes the following air quality/pollution control standard relating to bio-energy facilities: "All applicable air emission permits shall be obtained and all conditions complied with." *AR-214.*

Noise/Health

71. The Planning Commission Recommended Draft contains the following standards with respect to the noise generated by large-scale wind energy facilities:

    i. The owner/operator shall operate the project in compliance with applicable Washington State Environmental Noise Levels, Chapter 173-60 WAC.
    ii. Applicants shall provide documentation of expected noise generation levels.

    AR-207. The Washington noise standards are based on the land use classification of both the noise source and the noise receiver. When the receiver is a residential property, the daytime noise limit ranges from 55 to 60 dBA[33] depending on the classification of the noise source. At night, the maximum ranges from 45 to 50 dBA. *WAC 173-60-040.*

72. Mr. Richard James, an acoustical engineer, provided credible testimony that wind turbines generate a type of noise that is not adequately measured by the dBA scale used in the Washington noise standards. The dBA scale is designed to detect noises audible to humans. Wind turbines generate low-frequency noise (20 Hz or lower) that might cause the body to resonate even if it is not audible. Such effects are measurable on the C-weighted scale (dBC). *Testimony of Mr. James.*

73. Wind turbines have unique sound characteristics due to the interaction of the blades with the air around the towers. As described in one of the articles submitted by the Appellants:

[33] "dBA" means the sound pressure level in decibels measured using the "A" weighting network on a sound level meter." *WAC 173-60-020.*

"The interaction of the blades with air turbulences around the towers create low frequency and infrasound components, which modulate the broadband noise[34] and create fluctuations of sound level. The low frequency fluctuations of the noise is described as 'swishing' or 'whooshing' sound, creating an additional disturbance due to the periodic and rhythmic characteristic." *Exhibit 1.12, page 11.* Mountainous conditions can exacerbate the noise effects of wind turbines. *Testimony of Mr. James.*

74. Mr. James recommended a minimum distance of 1.2 miles between turbines and residences, based on health effects research conducted by Dr. Nina Pierpont. *Testimony of Mr. James.*

75. Dr. Pierpont, a pediatrician, interviewed by telephone 23 members of ten families, and through those interviews obtained information on a total of 37 people (she obtained information on young children from their parents). The ten families were not from the same town or situated around the same wind farm; some families lived in Canada and others lived in various Western European countries. Only one family lived in the United States. The families lived distances ranging from 0.19 mile to 0.93 mile from minimum 328-foot-tall, modern (i.e., constructed 2004 or later) wind turbines. Six of the ten families lived less than one-half mile from the turbines. Based on the interviews, Dr. Pierpont found that most study members experienced sleep disturbance, and at least half experienced a variety of other systems such as headaches, dizziness, and memory problems, which symptoms improved when the member was away from the turbines.[35] Dr. Pierpont calls the constellation of symptoms "Wind Turbine Syndrome." Her theory is that the low-frequency noise or vibration associated with wind turbines stimulates receptors for the balance system in a discordant fashion. Dr. Pierpont recommends that wind turbines be set back a distance of at least 1.2 miles from residences.[36] *Exhibit 8.3 (see in particular, pages 8, 12, 20, 22, 23, 26, 60, and 61).*

76. Dr. Pierpont's research has several limitations. The study was based on an extremely small number of families, and the only families that were included in the study were those in which a member reported severe effects and the family considered the problem to be serious enough to take action to reduce turbine exposure (such as moving to a new location). Dr. Pierpont did not physically examine any of the participants; the information obtained was based on medical histories taken by telephone. *Exhibit 8.3, page 18; Testimony of Dr. Pierpont.* The study was not epidemiological in nature; it does not show how prevalent any of the symptoms were within the larger community. Individuals outside of the selected families who lived near turbines but did not experience symptoms were not interviewed. *Testimony of Dr. Pierpont; Exhibit 8.3, page 51.* Wind Turbine

[34] "Broadband noise is characterized by a continuous distribution of sound pressure with frequencies greater than 100 Hz." *Exhibit 1.12, page 4.*

[35] Mr. Banks objected to the hearsay nature of Dr. Pierpont's testimony on this issue.

[36] All of Dr. Pierpont's subjects lived less than a mile from wind turbines. The recommendation of 1.2 miles is based on surveys conducted by Robyn Phipps of New Zealand. *Exhibit 8.3, page 8.* Robyn Phipps is not a medical doctor. *Exhibit 8.1, page 2.*

Syndrome (or the same group of symptoms) is not described in any medical journal or other professional literature.[37] *Exhibit 8.3, page 15; Testimony of Dr. Pierpont.*

77. The National Academy of Sciences does not consider noise produced by wind turbines to be a "major concern" for people living more than a half-mile from the turbines. *Exhibit 4.4, Chapter 4, page 159.* However, it notes that "industry standards ... for assessing and documenting noise levels emitted may not be adequate for nighttime conditions and projects in mountainous terrain. This work on understanding the effect of atmospheric stability conditions and on site-specific terrain conditions and their effects on noise needs to be accounted for in noise standards. In addition, studies on human sensitivity to very low frequencies are recommended." *Exhibit 4.4, Chapter 4, page 176.*

Shadow Flicker

78. Shadow flicker is the phenomenon in which the blades of a wind turbine, as they rotate in sunny conditions, "cast moving shadows on the ground resulting in alternating changes in light intensity." *Exhibit 4.4, Chapter 4, page 160.*

79. According to one article, for individuals with photosensitive epilepsy (one in 4,000 people), "flicker from turbines that interrupt or reflect sunlight at frequencies greater than 3 Hz poses a substantial risk of inducing photosensitive seizures." *Exhibit 2.1, page 4.* However, modern large wind turbines do not generate shadow flicker at frequencies greater than 3 Hz. *Exhibit 4.4, Chapter 4, page 161 ("Flicker frequency due to a turbine is on the order of the rotor frequency (i.e., 0.6 – 1.0 Hz)"); see also Exhibit 2.1, page 4.*

80. Although shadow flicker might still be considered annoying even if not an actual health hazard, shadow flicker only occurs during a limited portion of the day, and only during certain conditions. As described in the National Academy of Sciences publication on wind-energy projects, "Even in the worst situations, shadow flicker only lasts for a short time each day – rarely more than half an hour. Moreover, flicker is observed only for a few weeks in the winter season." *Exhibit 4.4, Chapter 4, page 161.*

81. Shadow Flicker can be easily modeled on a project-specific basis, and shadow flicker modeling was performed for the Wild Horse Wind Power Project in Kittitas County. *Exhibit 4.4, Chapter 4, page 161.* As described in the FEIS for the project, the shadow flicker frequency for each turbine would be less than one-fifth the frequency reported to trigger seizures, and the project would not have a shadow flicker impact on residences due to distance and intervening terrain. *Exhibit 5.2, page 3.15-1.* With respect to an off-site alternative location with potential shadow flicker impacts (potential exposure ranging from six minutes to two hours), micro-siting of some of the turbines was identified as a potential mitigation measure. *Exhibit 5.2, page 3.15-2.*

[37] "Other than articles on the internet, there is currently no published research on wind turbine associated symptoms." *Exhibit 8.3, page 15.*

CONCLUSIONS

Jurisdiction:
The Hearing Examiner is granted authority to conduct hearings and make decisions on appeals of State Environmental Policy Act (SEPA) threshold determinations pursuant to Skamania County Code (SCC) 2.80.060(A)(13).

Standards for Review of a SEPA Threshold Determination:
SEPA requires an Environmental Impact Statement (EIS) to be prepared "on proposals for legislation and other major actions having a probable significant, adverse environmental impact." RCW 43.21C.031.

- "Significant" as used in SEPA means a reasonable likelihood of more than a moderate adverse impact on environmental policy. Significance involves context and intensity and does not lend itself to a formula or a quantifiable test. *WAC 197-11-794.* Several marginal impacts when considered together may result in a significant adverse impact. *WAC 197-11-330(3)(c).*

- "Probable" as used in SEPA means likely or reasonably likely to occur. Probable is used to distinguish likely impacts from those that merely have a possibility of occurring, but are remote or speculative. *WAC 197-111-782.*

In *King County v. Boundary Review Board,* 122 Wn.2d 648 (1993), the Washington Supreme Court clarified that the term "probable" does not mean that an impact must be "inevitable" before an EIS may be required. In that case, the City of Black Diamond had issued a DNS for a proposed annexation of unincorporated King County land. The land was "largely uninhabited" (*Id.* at 656), and while some of the owners identified preferred future land uses, none presented a formal development proposal to the City. In response to argument that any future development of the property is too speculative to warrant full environmental review, the Court held, "a proposed action is not insulated from full environmental review simply because there are no existing specific proposals to develop the land in question or because there are no immediate land use changes which will flow from the proposed action. Instead, an EIS should be prepared where the responsible agency determines that significant adverse environmental impacts are probable following the government action." *Id.* at 664. The Court explained its reasoning as follows:

> One of SEPA's purposes is to provide consideration of environmental factors at the earliest possible stage to allow decisions to be based on complete disclosure of environmental consequences. Decision-making based on complete disclosure would be thwarted if full environmental review could be evaded simply because no land-use changes would occur as a direct result of a proposed government action. Even a boundary change, like the one in this case, may begin a process of government action which can "snowball" and acquire virtually unstoppable administrative inertia.

Id.

In determining an impact's significance, the responsible official must take into account that:

(a). The same proposal may have a significant adverse impact in one location but not in another location;
(b). The absolute quantitative effects of a proposal are also important, and may result in a significant adverse impact regardless of the nature of the existing environment;
(c). Several marginal impacts when considered together may result in a significant adverse impact; For some proposals, it may be impossible to forecast the environmental impacts with precision, often because some variables cannot be predicted or values cannot be quantified.
(d). A proposal may to a significant degree:

i. Adversely affect environmentally sensitive or special areas, such as loss or destruction of historic, scientific, and cultural resources, parks, prime farmlands, wetlands, wild and scenic rivers, or wilderness;
ii. Adversely affect endangered or threatened species or their habitat;
iii. Conflict with local, state, or federal laws or requirements for the protection of the environment; and
iv. Establish a precedent for future actions with significant effects, involves unique and unknown risks to the environment, or may affect public health or safety.

WAC 197-11-330(3).

A threshold determination "shall not balance whether the beneficial aspects of a proposal outweigh its adverse impacts, but rather, shall consider whether a proposal has any probable significant adverse environmental impacts." *WAC 197-11-330(5).* Thus, in *King County v. Boundary Review Board,* the Court rejected the argument that an EIS need not be prepared for the annexation proposal because development could also take place under county jurisdiction, stating, "The specter of adverse environmental effects in the absence of government action ... is itself not a justification for evading full environmental review." *King County v. Boundary Review Board,* 122 Wn.2d at 666. Even proposals designed to improve the environment might have significant adverse environmental impacts. *WAC 197-11-330(5).*

The lead agency must make its threshold determination "based upon information reasonably sufficient to evaluate the environmental impact of a proposal." *WAC 197-11-*
335.

If a DNS is issued, the agency has the burden of demonstrating "that environmental factors were considered in a manner sufficient to be a prima facie compliance with the procedural dictates of SEPA." *Lassila v. City of Wenatchee,* 89 Wn.2d 804, 814 (1978). To uphold the DNS, the reviewing body "must be presented with a record sufficient to demonstrate that ACTUAL consideration was given to the environmental impact of the proposed action or recommendation." *Id. (emphasis in original).*

Clear error is the standard of review applicable to substantive decisions under SEPA.

Cougar Mt. Assocs. v. King County, 111 Wn.2d 742, 747, 765 P.2d 264 (1988). The determination by the governmental agency is clearly erroneous only if the reviewing tribunal is left with "the definite and firm conviction that a mistake has been committed." *Id.* at 747 (quoting *Polygon Corp. v. Seattle*, 90 Wn.2d 59, 69, 578 P.2d 1309 (1978)). In deciding this appeal, the Hearing Examiner must accord the County's SEPA determination "substantial weight." *RCW 43.21C.090.* The burden of proof is on the Appellants to show that the threshold determination was clearly erroneous.

Conclusions Based on Findings:

1. The County has not demonstrated that it has considered environmental factors to the extent required by SEPA. Most significantly, the County did not consider County-specific environmental studies prior to developing the zoning text and map amendments and did not consider the types of development that might result from the amendments. The County was not able to articulate a strong rationale for some the proposed alternative energy development standards, even though such standards have the potential to create environmental impacts. *Findings 12, 27, 28, 29, and 65.*

2. The Appellants have demonstrated, consistent with *King County v. Boundary Review Board,* that development with significant adverse environmental impacts is probable after adoption of the proposed zoning amendments.

   A. The zoning amendments would facilitate the development of large-scale wind energy and other alternative energy facilities on or near lands known for their unique scenic resources and habitat value. Some of the alternative energy uses are not identified in the Comprehensive Plan or the existing zoning code. *Findings 3, 11, 12, 13, 14, 16, 18, 42, and 43.*

   B. The potential significant, adverse environmental impacts of large-scale wind energy facilities are many and well documented. The Hearing Examiner finds most compelling the evidence regarding aesthetic and wildlife impacts. These impacts can and should be evaluated on a planning level rather than when individual projects are proposed. With full environmental analysis, the County might decide to refine the zoning map or development regulations to avoid environmental impacts. *Findings 40 – 66.*

   C. Although based on the evidence submitted the Hearing Examiner is not convinced that an adverse impact to public health is probable if wind turbines are allowed to be sited less than 1.2 miles from residences, wind turbines do generate noise and the impact should be evaluated prior to adopting a setback standard. *Findings 71-77.*

   D. The significant, adverse environmental impacts associated with wind energy facilities are not ameliorated by the conditional use permit requirement. Under the proposed zoning amendments, a conditional use cannot be denied. *Finding 17.*

E. The significant, adverse environmental impacts associated with wind energy facilities would not be fully addressed by project-specific environmental impact statements. Because project proposals are tied to specific parcels of land, the ability to consider alternative locations that might reduce environmental impacts is limited.

F. Development of wind energy facilities is probable after the zoning action due to the County's unique wind resources, the County Commissioners' expressed interest in and support of alternative energy development, and the fact that a developer has already approached the County with a potential wind power project. *Findings 31-38.*

3. The significance of the County action is not diminished by the fact that only a small fraction of the County located outside of the scenic area and the incorporated areas is privately owned. Even five percent of the County's total acreage (an amount less than the actual private ownership) is a significant amount of land.[38] Further, no evidence or legal authority was presented to suggest that the County's regulations would not apply to the 60,000 acres of land owned by the State of Washington. Klickitat County, for example, is processing permit applications for wind energy facilities located on Washington DNR land. *Finding 40.* Finally, even if the County does not have jurisdiction to regulate public lands within its boundaries[39], the County's regulations might be influential to state and federal decision makers when evaluating requests for alternative energy facilities. For example, 36 CFR 251.56 states that special use approvals on National Forest land "may be conditioned to require State, county, or other Federal agency licenses, permits, certificates, or other approval documents, such as a Federal Communication Commission license, a Federal Energy Regulatory Commission license, a State water right, or a county building permit." *36 CFR 251.56(a)(2).*

4. Contrary to the County's assertion, the proposed wind energy regulations would not be preempted by the Washington Energy Facilities Site Locations Act (EFSLA) (Chapter 80.50 RCW) automatically. The EFSLA establishes a certification process that is mandatory for development of certain types of energy facilities (e.g., natural gas transmission pipelines in excess of 14 inches in diameter and 15 miles in length; stationary thermal power plants with generating capacity of 350,000 KW or more; facilities capable of processing more than 25,000 barrels per day of petroleum into refined products) but that is voluntary for the development of energy facilities that exclusively use alternative energy resources, such as wind, solar, geothermal, and biomass energy. *RCW 80.50.060; RCW 80.50.020(7), (11), (15), and (18).* When certification under the EFSLA is sought, the Energy Facility Site Evaluation Council holds a public hearing "to determine whether or not the proposed site is consistent and in compliance with city, county, or regional land use plans or zoning ordinances." *RCW*

[38] In *Ullock v. Bremerton*, 17 Wn. App. 573 (1977) the court reviewed an EIS prepared for a rezone of five acres.
[39] In *South Dakota Mining Assoc. v. Lawrence Co.*, 155 F.3d 1005 (1998), the court determined that federal laws allowing mining on National Forest land preempted a county ordinance prohibiting mining.

80.50.090. If the site is not consistent with the local ordinances, then the Council must determine whether to recommend to the governor that the state preempt the local ordinances. *WAC 463-28-060.* Even if the Council recommends preemption, it must include conditions in the draft certification agreement that considers local interests and the purposes of the ordinances that are preempted. *WAC 463-28-070.* The governor ultimately decides whether to approve the certification agreement. *RCW 80.50.100.* Because state preemption must be applied for, is discretionary, and is granted only after consideration of local ordinances, RCW 80.50 does not provide a rationale for avoiding full environmental review of the County's alternative energy regulations.

5. The Appellants have met their burden of proving that the County's issuance of a DNS was in error.

DECISION

Based upon the preceding Findings and Conclusions, the appeals of the October 8, 2008 Determination of Nonsignificance issued for the County's proposed zoning text and map amendments are granted. The Determination of Nonsignificance is reversed, and remanded to the County for preparation of an Environmental Impact Statement for the zoning text and map amendments.

Dated February 19, 2009.

Toweill Rice Taylor
Hearing Examiners for Skamania County
By:

LeAnna C. Toweill

Appendix A
Exhibit List

County Exhibits

Note: Citations to County Exhibit 1 items are to the "Administrative Record" (AR) page number only.

1. Record for Skamania County SEPA on Planning Commission Recommended Draft Zoning Text and Map Revisions and Minor Comprehensive Plan Map Amendments, File No. SEP-08-35 (April, 2008 to November 3, 2008), which includes the following:

Date	Description	Pages
11/3/08	Pre-Hearing Order from LeAnna Toweill, Hearing Examiner	1-2
10/22/08	Notice Administrative Appeal for SEP-08-35 from Reeves, Kahn, & Hennesy, Attorneys for Friends of the Gorge	3-23
10/22/08	Certificate of Mailing from Nathan J. Baker, Staff Attorney for Friends of the Gorge	24-28
10/22/08	Notice of Administrative Appeal and Certificate of Mailing for SEP-08-35 from Save Our Scenic Area, Richard Aramburu, Attorney	29-42
10/20/08	Email from Bonnie Anderson, Skamania County Planning Department - Administrative Assistant, to Nathan Baker	43-44
10/14/08	Affidavit of Publication for the Determination of Non-Significance SEP-08-35, Skamania County Pioneer	45
10/8/08	Determination of Non-Significance with no Checklist	46-46A
10/8/08	Determination of Non-Significance with Checklist	47
10/7/08	Certificate of Mailing for SEP-08-35 by Bonnie Anderson	64-68
10/2/08	Publication notice for SEP-08-35 to Skamania County Pioneer	69-70
	Compact Disc - Klickitat County Energy Overlay Zone Draft EIS and Final EIS; Klickitat County Energy Overlay Zone - FEIS Documents Incorporated by Reference 1 of 2; Klickitat County Energy Overlay Zone - FEIS Documents Incorporated by Reference 2 of 2	71
9/2/08	Skamania County Code Title 21 - Zoning - Planning Commissions Recommended Draft and Minor Comprehensive Plan Map Amendments	72-232
8/2008	Research for SEPA Determination and Zoning Ordinance (WA EFSEC Order on Remand, No. 831)	233-237
5/2008	Research for SEPA Determination Zoning Ordinance (SEPA checklists from other jurisdictions)	238-333
4/2008	Research for SEPA Determination Zoning Ordinance (checklists, WA noise standards, WDFW Windpower Guidelines)	334-359

2. Full-size color map entitled "PC Recommended Draft Skamania County Zoning Map

Appellant Save our Scenic Area Exhibits

Note: Citations to SOSA Exhibits are to the numbers as listed. Exhibits 8.1, 8.2 and 8.3 were admitted into the record but not assigned exhibit numbers at the hearing. Numbers are assigned for the first time here.

1.1 NINA PIERPONT, M.D., Ph.D., FAAP
Curriculum Vitae

Author: Nina Pierpont, M.D., Ph.D., FAAP
Dated July 5, 2006

1.2 PIERPONT LETTER TO SCHWARTZ, GENOUILLE, FRANCE
Author: Nina Pierpont, M.D., Ph.D., FAAP
Dated February 23, 2008

1.3 NOISY WIND AND HOT AIR
Author: Nina Pierpont, M.D., Ph.D., FAAP
Dated May 7, 2005.
Malone Telegram (New York)

1.4 HEALTH EFFECTS OF WIND TURBINE NOISE
Author: Nina Pierpont, M.D., Ph.D., FAAP
Dated March 2, 2006
www.ninapierpont.com

1.5 WIND TURBINE SYNDROME
Testimony before the New York State Legislature Energy Committee explaining Wind Turbine Syndrome and wind turbine siting.
Author: Nina Pierpont, M.D., Ph.D., FAAP
Dated March 7, 2006

1.6 LOCATION, LOCATION, LOCATION
Author: The Noise Association, UK Noise Association, 2nd Floor, Broken Wharf House, 2 Broken Wharf, London EC4V 3DT, U.K.
Dated July 2006
www.ukna.org.uk

1.7 NOISE RADIATION FROM WIND TURBINES INSTALLED NEAR HOMES: EFFECTS ON HEALTH
Authors: Barbara J. Frey, BA, MA, and Peter J. Hadden, BSc, FRICS
Dated February 2007
www.windturbinenoisehealthhumanrights.com

1.8 EFFECTS OF THE WIND PROFILE AT NIGHT ON WIND TURBINE SOUND
Author: G.P. van den Berg
Dated 2003 (Submitted to Elsevier Ltd Jan 2003, accepted Sept 2003)
www.elsevier.com/locate/jsvi (Journal of Sound and Vibration); www.sciencedirect.com;
g.p.van.den.berg@phys.rug.nl

1.9 INDUSTRIAL WIND TURBINES, INFRASOUND AND VIBRO-ACOUSTIC DISEASE (VAD)
Authors: Professor Mariana Alves-Pereira, School of Health Sciences, Lusofona University, Portugal and Dept. of Environmental Sciences and Engineering, New University of Lisbon, Portugal; Nuno Castelo Branco, MD, Surgical Pathologist and President, Scientific Board, Center for Human Performance.
Dated May 31, 2007
vibroacoustic.disease@gmail.com

1.10 INFRASOUND AND LOW FREQUENCY NOISE DOSE RESPONSES: CONTRIBUTIONS
Authors: Professor Mariana Alves-Pereira, School of Health Sciences, Lusofona University, Portugal and Dept. of Environmental Sciences and Engineering, New University of Lisbon, Portugal; Nuno Castelo Branco, MD, Surgical Pathologist and President, Scientific Board, Center for Human Performance.
Dated 28-31 August 2007
INTER-NOISE 2007, Istanbul, Turkey (International conference)

1.11 WHO HAS HEARD THE WIND

Author: Jules Smith
Dated 2006 (Copyright LightningStrike Studios)
www.lightningstrikestudios.com

1.12 WIND FARM NOISE AND REGULATIONS IN THE EASTERN UNITED STATES from the Second International Meeting on Wind Turbine Noise, Lyon, France, 2007
Author(s): Hilkat Soysal and Oguz Soysal, Department of Physics and Engineering, Frostburg State University, Frostburg MD
Dated September 20-21, 2007
renewable@frostburg.edu

1.13 WIND TURBINES, NOISE AND HEALTH
Author(s): Dr. Amanda Harry, M.B., Ch.B, P.G.Dip.E.N.T.
Dated February 2007

2.1 WIND TURBINES, FLICKER, AND PHOTOSENSITIVE EPILEPSY: CHARACTERIZING THE FLASHING THAT MAY PRECIPITATE SEIZURES AND OPTIMIZING GUIDELINES TO PREVENT THEM
Author(s): Graham Harding, Neurosciences Institute Aston University, Birmingham, U.K.; Pamela Harding, Neurosciences Institute Aston University; and Arnold Wilkins, Department of Psychology, University of Essex, Colchester, U.K.
Dated February 2008
Blackwell Publishing, Inc. International League Against Epilepsy.

2.2 Scenic Analysis

a. Diagram showing wind turbine placement.

b. Color diagram showing wind turbine placement and visibility from the National Scenic Area.

c. Visual simulation based on the turbine location map provided by SDS Lumber and the actual turbine height specification, demonstrating the visual impacts and providing help in understanding the visibility of project.

2.3 Topographical Map of Skamania County area

3.1 FRANCE'S NATIONAL ACADEMY OF MEDICINE CALLS FOR 1.5 KM SETBACK FOR ALL INDUSTRIAL WIND TURBINES FROM RESIDENCES
Translation of publication notice for "Repercussions of wind turbine operations on human health"
Author: Dr. Chantal Gueniot
Dated March 29, 2006

3.2 HEALTH, HAZARD AND QUALITY OF LIFE NEAR WIND POWER INSTALLATIONS; HOW CLOSE IS TOO CLOSE?
Author: Nina Pierpont, MD, PhD
Dated March 2, 2005
Malone Telegram, New York

4.1 WIND TURBINE SYNDROME: NOISE, SHADOW, FLICKER AND HEALTH
Author: Nina Pierpont, M.D., Ph.D., FAAP
Dated August 1, 2006
4.2 SUMMARY REPORT: LITERATURE SEARCH ON THE POTENTIAL HEALTH IMPACTS ASSOCIATED WITH WIND-TO-ENERGY TURBINE OPERATIONS
Author: Robert C. Frey, Ph.D, Chief, Health Assessment Section; John R. Kollman, R.S., Toxicologist, Health Assessment Section, Ohio Health Department.

Dated March, 2008
Health Assessment Section, Bureau of Environmental Health, Ohio Department of Health

4.3 IMPACT OF WIND FARMS ON PUBLIC HEALTH
Author: Kansas Legislative Research Department
Dated July 18, 2007 (Revised)
kslegres@klrd.state.ks.us, http://www.kslegislature.org/klrd

4.4 ENVIRONMENTAL IMPACTS OF WIND-ENERGY PROJECTS
Author: The National Academy of Sciences Committee on Environmental Impacts of Wind-Energy Projects (Board on Environmental Studies and Toxicology).
Dated 2007
National Academies Press, 500 Fifth Street, NW, Washington, D.C. 20001; www.nap.edu, http://books.nap.edu/catalog.php?record_id=11935

4.5 PROVISIONS OF THE PROPOSED STATE ENERGY PLAN ON INDUSTRIAL WIND-ENERGY DEVELOPMENT
Letter from Congressman Alan B. Mollohan, 1st Dist., WV, to the director of the West Virginia Division of Energy.
Author: Congressman Alan B. Mollohan, First District, West Virginia
Dated October 31, 2007
Alan B. Molloham, Congress of the United States, House of Representatives, 2302 Rayburn HOB, Washington DC 20515-4801

5.1 KITTITAS VALLEY WIND POWER PROJECT – FEIS Table of Contents[1] at http://www.efsec.wa.gov/kittitaswind/FEIS/kvfeis.shtml

5.2 WILD HORSE WIND POWER PROJECT - EIS at http://www.efsec.wa.gov/wildhorse/feis/whfeis.shtml

5.3 DESERT CLAIM WIND POWER PROJECT - FEIS Table of Contents at http://www.efsec.wa.gov/Desert%20Claim/FEIS/FEIS.shtml[2]

5.4 STATELINE WIND ENERGY PROJECT – Federal Register: June 5, 2000 (Volume 65, Number 108)

5.5 KLICKITAT COUNTY ENERGY OVERLAY ZONE - FEIS available at http://www.klickitatcounty.org/planning/ContentROne.asp?fContentIdSelected=2119658607&fCategoryIdSelected=948111261

6.1 WINDY POINT II WIND PROJECT - DS within scoping notice of 7/9/08 at http://www.klickitatcounty.org/planning/FilesHtml/WPSN.pdf.

6.2 GOODNOE II WIND PROJECT - DS within scoping notice at http://www.klickitatcounty.org/planning/FilesHtml/Goodnoe%20II%20Wind%20Project%20Scoping%20Notice.pdf

6.3 HARVEST WIND - DS within scoping notice of 4/24/08 at http://www.klickitatcounty.org/Planning/ContentROne.asp?fContentIdSelected=549483787&fCategoryIdSelected=948111261

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[1] Appellant SOSA offered the entire EIS but only provided the Table of Contents at the hearing. The Hearing Examiner did not visit the website and did not consider the remainder of the document.
[2] See Footnote 1.

6.4 JUNIPER CANYON - DS within scoping notice at
http://www.klickitatcounty.org/planning/FilesHtml/Juniper%20Canyon%20Scoping%20Notice.pdf

7.1 Resume of Rick James, E-Coustics Solutions

8.1 Evidence of Dr. Robyn Phipps, In the Matter of the Moturimu Wind Farm, March 2007
http://www.wind-watch.org/documents/writ of prohibition-content/uploads/phipps-moturimutestimony.pdf

8.2 Visual and Noise Effects Reported by Residents Living Close to Manawatu Wind Farms: Preliminary Survey Results, by Dr. Robyn Phipps at al.

8.3 Wind Turbine Syndrom, A Report on a Natural Experiment, by Nina Pierpont, MD, PhD (10-17-08 draft)

Appellants Friends of the Columbia Gorge et al. Exhibits

Note: Citations to these exhibits are to the letter/number combinations as listed. The "F" series documents are admitted for standing purposes only.

Ex.	Document Description	Date
A.1	Air Quality Issues in the Columbia River Gorge National Scenic Area, USDA Forest Service, Pacific Northwest Region, Air Resource Management Program, available at http://www.fs.fed.us/r6/aq/gorgis.pdf	Apr. 1999
A.2	Excerpts from the Management Plan for the Columbia River Gorge National Scenic Area pertaining to the protection and enhancement of air quality, available at http://www.gorgecommission.org/managementplan.cfm	Adopted May 2000
A.3	Air Quality Biomonitoring in the Columbia River Gorge National Scenic Area by the US Forest Service, 1993-2001, Geiser, L. H. and B. Bachman, USDA Forest Service, Pacific Northwest Region, Air Resource Management Program, available at http://ocid.nacse.org/airlichenPDF/AQ_CRGNSA.pdf	Sep. 27, 2001
A.4	Ecological effects of nitrogen deposition in the western United States, Fenn, M.E., Baron, J.S., Allen, E.B., et al. *BioScience*, vol. 53, no. 4, pp. 404-20, available at http://www.cdphe.state,co.us/ap/rmnp/exhibith.pdf	Apr. 2003
A.5	Winter Deposition of Nitrogen and Sulfur in the Eastern Columbia River Gorge National Scenic Area, Mark E. Fenn and Timothy J. Blubaugh, USDA Forest Service, Pacific Southwest Research Station, available at http://www.fs.fed.us/psw/programs/atdep/col_river/crgnsa_final_report.pdf	Feb. 3, 2005
B.1	Landscape Aesthetics: A Handbook for Scenery Management, Forest Service, USDA (appendices omitted from exhibit), available at http:www.urbanforestrysouth.org/resources/library/landscape-aesthetics-ah-701-complete-document/at_download/file_name	Dec. 1995
B.2	Declaration of Margo Blosser	Sep. 2, 2008
B.3	Maps of wind turbine locations in southeast Skamania County visible from I-84 and Cook Underwood Road, Gorge GIS	Sep. 2, 2008
B.4	Declaration of Dean Apostol	Jan. 14, 2009
B.5	"Skamania County Alternative Energy Code Project" PowerPoint Presentation, Dean Apostol	Jan. 14, 2009
C.1	Development of a practical modeling framework for estimating the impact of wind technology on bird populations, Morrison, M.L. and K.H. Pollock, National Renewable Energy Laboratory, Golden, Colorado, available at http://www.nrel.gov/wind/pdfs/23088.pdf	Nov. 1997
C.2	Avian risk and fatality protocol, Morrison, M.L. and K.H. Pollock, National Renewable Energy Laboratory, Golden, Colorado, available at	1998

	http://www.nrel.gov/docs/fy99osti/24997.pdf	
C.3	Sample map of designated critical wildlife habitat circles surrounding Northern spotted owl site centers in a portion of Skamania County (Township 3N, Range 9E), Washington Department of Natural Resources	May, 2000
C.4	Excerpts from Chapter 22-16 of the Washington Administrative Code relevant to the protection of Northern spotted owls (*Strix occidentalis caurina*) in Skamania County	July 2001
C.5	The Butterflies of Cascadia: A Field Guide to All the Species of Washington, Oregon and Surrounding Territories, Robert Michael Pyle	2002
C.6	Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines, U.S. Fish and Wildlife Service, available at http://www.fws.gov/habitatconservation/wind.pdf	May 13, 2003
C.7	Wind Turbine Interactions with Birds and Bats: A Summary of Research Results and Remaining Questions, National Wind Coordinating Committee, available at http://www.nationalwind.org/publications/wildlife/wildlife_factsheet.pdf	Nov. 2004
C.8	Relationships between Bats and Wind Turbines in Pennsylvania and West Virginia, An Assessment of Fatality Search Protocols, Patterns of Fatality, and B ehavioral Interactions with Wind Turbines: A Summary of Findings from the Bats and Wind Energy Cooperative's 2004 Field Season, Bats and Wind Energy Coooperative, available at http://www.batcon.org/wind/BWEC2004Reportsummary.pdf	2005
C.9	Memo to Wind Energy Production and Wildlife Conservation Planners, Tuttle, M.D., available at http://www.protectpendleton.com/nbw_batmemo.htm	Jan. 2005
C.10	Wind Power: Impacts on Wildlife and Government Responsibilities for Regulating Development and Protecting Wildlife, US Government Accountability Office, available at http://www.gao.gov/new.items/d05906.pdf	Sep. 2005
C.11	Assessing Impacts of Wind-Energy Development on Nocturnally Active Birds and Bats: A Guidance Document, Kunz, T.H, Arnett, E.A., Cooper, B.M., et al. *Journal of Wildlife Managment*, 71(8):2449-2486, available at http://www.nationalwind.org/pdf/Nocturnal_MM_Final-JWM.pdf	Nov. 2007
C.12	Letter from Ted Labbe and Michael Ritter, Washington Department of Fish and Wildlife, to Karen Witherspoon, Skamania County Planning Department, regarding comments on 2008 draft Skamania County zoning update	June 5, 2008
C.13	American Society of Mammalogists unanimous resolution: Effects of wind-energy facilities on bats and other wildlife, available at http://www.wind-watch.org/documents/wp-content/uploads/asm-windenergyresolution.pdf	June 21-25, 2008
C.14	Barotrauma is a Significant Cause of Bat Fatalities at Wind Turbines, Baerwald, E.F., D'Amours, G.H., Klug, B.J, Barclay, R.M.R., Current Biology, Vol 18, R695-R696.	Aug. 26, 2008
C.15	Declaration of K. Shawn Smallwood	Sep. 2, 2008
C.16	Review of Habitat Assessment Report for Forest Road 25 and Loowit Lane, Steve Manlow, Washington Department of Fish and Wildlife	May 5, 2005
C.17	Potential development north of Swift Reservoir in Skamania County, known as the North County Area, Ken S. Berg, U.S. Fish and Wildlife Service	Dec. 8, 2005
C.18	Oregon Columbia Plateau Ecoregion Wind Energy Siting and Permitting Guidelines	Sept. 29, 2008
C.19	Avian and Bat Mortality at the Big Horn Wind Enery Project, Klickitat County, Washington, K. Shawn Smallwood	Oct. 18, 2008
C.20	How *too much* wind power may hurt salmon, Dan Tilkin, KATU 2 Portland, available at http://www.katu.com/outdoors/featured/33967994.html	Nov. 21, 2008
C.21	Second Declaration of K. Shawn Smallwood	Dec. 8, 2008
D.1	Washington wind power and speed maps, Northwest Sustainable Energy for Economic Development, available at http://www.windpowermaps.org/windmaps/states.asp#washington	June 2002
D.2	Washington - Wind Power Resource Estimates map, National Renewable Energy Laboratory,	June 7,

	U.S. Department of Energy, available at http://wdfw.wa.gov/hab/engineer/major_projects/graphics/wind_power_resource_estimates_map.jpg	2002
D.3	Permitting of Wind Energy Facilities: A Handbook, National Wind Coordinating Committee, available at http://www.nationalwind.org/publications/siting/permitting2002.pdf	Aug. 2002
D.4	Current and Proposed Wind Project Interconnections to BPA Transmission Facilities, Bonneville Power Administration, available at http://www.transmission.bpa.gov/PlanProj/Wind/documents/Windmap_external_03242008_8-5x11.pdf	Mar. 27, 2008
D.5	Excerpts from Klickitat County's Energy Overlay Zone Final EIS	Sep. 2004
D.6	Agenda and materials, Columbia Gorge Bi-State Renewable Energy Zone Leadership Meeting, Mid-Columbia Economic Development District	Oct. 19, 2007
D.7	*Rose v. Chaikin*, 187 N.J. Super. 210, 453 A.2d 1378 (1982).	Nov. 10, 1982
D.8	*Burch v. Nedpower Mt. Storm, LLC*, 220 W. Va. 443, 647 S.E.2d 879 (2007)	June 8, 2007
D.9	*Wind Energy Siting Handbook*, American Wind Energy Association, available at http://www.awea.org/sitinghandbook/	Feb. 2008
E.1	Memorandum regarding Cascade Wind Project Update for March 2008, Adam Bless, Oregon Department of Energy	March 13, 2008
E.2	Map of approved and proposed wind projects in Klickitat county	Apr. 30, 2008
E.3	Windy Point II Wind Farm Project EOZ Application	May 23, 2008
E.4	Notice of Community Meeting, Windy Point II Windpower Project, Klickitat County	May 27, 2008
E.5	Determination of Significance and Request for Comments on Scope of EIS, Goodnoe II project, EOZ2008-05 and SEP2008-31, Klickitat County	July 14, 2008
F.1	Declaration of Chris Lloyd	Aug. 31, 2008
F.2	Declaration of Renee Tkach	Sep. 2, 2008
F.3	Declaration of Kevin Gorman	Sep. 2, 2008
F.4	Second Declaration of Chris Lloyd	Dec. 8, 2008
F.5	Second Declaration of Kevin Gorman	Dec. 8, 2008
F.6	Second Declaration of Renee Tkach	Dec. 8, 2008
F.7	Declaration of Mary Repar	Dec. 8, 2008
F.8	Declaration of Brett VandenHeuvel	Dec. 9, 2008
F.9	Declaration of Emily Platt	Dec. 9, 2008
G.1	Resume/CV of Dean Apostol	Aug. 2008
G.2	Resume/CV of Margo Blosser	Sep. 2008
G.3	Resume/CV of Carl Dugger	Sep. 2008
G.4	Resume/CV of K. Shawn Smallwood	Sep.

		2008
H.1	BPA Transmission Lines by kV, Bonneville Power Administration, available at http://www.bpa.gov/corporate/pubs/EX_A_BPA_Service_Area.pdf	Apr. 17, 1998
H.2	Determination of Significance and Request for Comments on Scope of EIS, Klickitat Count (regarding the possible amendment of the County's comprehensive plan and development regulations to provide for the development of energy resources)	June 6, 2002
H.3	Gifford Pinchot National Forest Vicinity Map, Gifford Pinchot National Forest, USDA Forest Service, available at http://www.fs.fed.us/gpnf/04maps/documents/gpnf-forest-vicinity-map-20080730_11x17_000.pdf	July 30, 2008
H.4	Skamania County Ordinance 2008-01, available at http://www.skamaniacounty.org/Ordinances_2008/Ord%202008-01%20Moratorium%20Extension%20Unzoned%20Land.htm	Jan. 8, 2008
H.5	Comments on Skamania County Proposed Zoning Amendments, Nathan Baker, Friends of the Columbia Gorge	Oct. 22, 2008
H.6	Comments on Skamania County Proposed Title 21 Zoning Amendments, Richard F. Till, Friends of the Columbia Gorge	Oct. 22, 2008
H.7	MCEDD Rural Cluster Project: Renewable Energy Cluster, Mid-Columbia Economic Development District, available at http://www.oregonclusters.org/Docs/MCEDD%20Ren%20Energy%20cluster.doc	N/A
H.8	Minutes for the December 18, 2007 Meeting, Board of Skamania County Commissioners, available at http://www.skamaniacounty.org/Minutes_Files_2007/Minutes%2012-18-07.htm	Dec. 18, 2007
H.9	Skamania County Resolution 2007-59, available at http://www.skamaniacounty.org/Resolutions_2007/Res%20200759%20Renewable%20Energy.htm	Dec. 18, 2007
H.10	Annual Performance Report, July 1, 2007 to June 30, 2008, Mid-Columbia Economic Development District, available at http://www.mcedd.org/documents/FY2008MCEDDAnnualoReport.pdf	June 30, 2008
H.11	Minutes for the September 30, 2008 Meeting, Board of Skamania County Commissioners, available at http://www.skamaniacounty.org/Minutes_Files_2008/Minutes%2009-30-08.htm	Sep. 30, 2008
H.12	Skamania County Resolution 2008-51	Sep. 30, 2008
H.13	Skamania County Commission home page, available at http://www.skamaniacounty.org/commissioners1.htm	Jan. 5, 2009
H.14	Minutes for the week of December 23, 2008, Board of Skamania County Commissioners, available at http://www.skamaniacounty.org/Minutes_Files_2008/Minutes%2012-23-08.htm	Dec. 23, 2008

Michelle, Kayce (UTC)

From: Peter Cornelison [redacted]
Sent: Wednesday, August 25, 2010 5:48 PM
To: EFSEC (UTC)
Subject: Whistling Ridge harms the scenic Columbia Gorge & Hood River

I wish to make comments on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

I live in Hood River, OR and I am concerned this project will cause visual pollution of our viewshed, which is one reason tourists visit here.

In addition this proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

The DEIS has other flaws. The DEIS fails to adequately analyze the potential cumulative impacts of this project when considered with other existing and likely future wind energy projects and other development projects in the region. The photo simulations in the DEIS are inadequate and misleading. Some of them have cloudy backgrounds, thus not adequately representing the full extent of the impacts, and other simulations are out scale. Additional viewpoints need to be considered, including views from the Historic Columbia River Highway. The DEIS erroneously concludes that the scenic impacts would not be significant, even though most of the turbines would be visible from designated key viewing areas within the National Scenic Area. In addition, the BPA and EFSEC have not adequately consulted with the Yakama Nation to ensure the protection of cultural resources.

Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Peter Cornelison
[redacted]

COMMENT LETTER 288

WR - DEIS
Public Comment #416

Michelle, Kayce (UTC)

From: D. Deloff [redacted]
Sent: Wednesday, August 25, 2010 8:14 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

The DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area.

The proposed project could cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am also concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

In addition, the DEIS fails to adequately analyze the potential cumulative impacts of this project when considered with other existing and likely future wind energy projects and other development projects in the region.

Furthermore, the DEIS erroneously concludes that the scenic impacts would not be significant, even though most of the turbines would be visible from designated key viewing areas within the National Scenic Area.

And I believe that the BPA and EFSEC have not adequately consulted with the Yakama Nation to ensure the protection of cultural resources.

Indeed, the EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

D. Deloff
[redacted]

COMMENT LETTER 289

WR - DEIS
Public Comment #428

Michelle, Kayce (UTC)

From: Mary Narey [redacted]
Sent: Wednesday, August 25, 2010 11:26 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines. As you read the letters and impact statements that will be sent to you regarding this wind power project, the same ideas that have been covered before will be mentioned again, no doubt. But what I wish to have you connect with is how much we take for granted the beauty of this place and the life inhabiting it that makes it impact our senses.

In our endeavor to make ourselves warm and happy, we hastily provide less than satisfactory power alternatives and arrive at an ugly display that destroys the beauty inherent in the place. It becomes a heartless displacement of animal and plant life as well as ruining natural geological formations that render peace and joy of heart to all who pass by to witness them. For some reason we are obsessed with destruction rather than with preservation of the Gorge for generations to come. Support a healthy scenic Gorge by presenting a true draft environmental impact statement that covers all the bases as well as the heights.

This current proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

The DEIS has other flaws. The DEIS fails to adequately analyze the potential cumulative impacts of this project when considered with other existing and likely future wind energy projects and other development projects in the region. The photo simulations in the DEIS are inadequate and misleading. Some of them have cloudy backgrounds, thus not adequately representing the full extent of the impacts, and other simulations are out scale. Additional viewpoints need to be considered, including views from the Historic Columbia River Highway. The DEIS erroneously concludes that the scenic impacts would not be significant, even though most of the turbines would be visible from designated key viewing areas within the National Scenic Area. In addition, the BPA and EFSEC have not adequately consulted with the Yakama Nation to ensure the protection of cultural resources.

Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Mary Narey
[redacted]

COMMENT LETTER 290

WR - DEIS
Public Comment #433

Michelle, Kayce (UTC)

From: Paul Torrence [redacted]
Sent: Thursday, August 26, 2010 6:03 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines. It is vital that we develp alternate and renewable enrgy sources, but it is just as vital that we do not repeat the same kinds of mistakes we have committed with dirty energy; namely, destroying the natural world, its ecosystems, and beauty in order to develop more energy.

This project has not been well analyzed in the DEIS. Another more critical look is required. In addition,this proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

The DEIS has other flaws. The DEIS fails to adequately analyze the potential cumulative impacts of this project when considered with other existing and likely future wind energy projects and other development projects in the region. The photo simulations in the DEIS are inadequate and misleading. Some of them have cloudy backgrounds, thus not adequately representing the full extent of the impacts, and other simulations are out scale. Additional viewpoints need to be considered, including views from the Historic Columbia River Highway. The DEIS erroneously concludes that the scenic impacts would not be significant, even though most of the turbines would be visible from designated key viewing areas within the National Scenic Area. In addition, the BPA and EFSEC have not adequately consulted with the Yakama Nation to ensure the protection of cultural resources.

Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Paul Torrence
[redacted]

[redacted]

COMMENT LETTER 291

WR - DEIS
Public Comment #435

Michelle, Kayce (UTC)

From: joan Bailey [j[redacted]
Sent: Thursday, August 26, 2010 6:31 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

We do need to use all different ways to generate energy and wind energy is one of several options. It is not an option for the Columbia Gorge as planned for by Whistling Ridge. The loss it would incur does not justify building it.

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

The DEIS has other flaws. The DEIS fails to adequately analyze the potential cumulative impacts of this project when considered with other existing and likely future wind energy projects and other development projects in the region. The photo simulations in the DEIS are inadequate and misleading. Some of them have cloudy backgrounds, thus not adequately representing the full extent of the impacts, and other simulations are out scale. Additional viewpoints need to be considered, including views from the Historic Columbia River Highway. The DEIS erroneously concludes that the scenic impacts would not be significant, even though most of the turbines would be visible from designated key viewing areas within the National Scenic Area. In addition, the BPA and EFSEC have not adequately consulted with the Yakama Nation to ensure the protection of cultural resources.

Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

joan Bailey
[redacted]

[redacted]

COMMENT LETTER 292

WR - DEIS
Public Comment #442

Michelle, Kayce (UTC)

From: John Goeckermann [redacted]
Sent: Thursday, August 26, 2010 8:03 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

STOP THIS TRAVESTY! THIS RUINATION IS CRIMINAL ! !

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

The DEIS has other flaws. The DEIS fails to adequately analyze the potential cumulative impacts of this project when considered with other existing and likely future wind energy projects and other development projects in the region. The photo simulations in the DEIS are inadequate and misleading. Some of them have cloudy backgrounds, thus not adequately representing the full extent of the impacts, and other simulations are out scale. Additional viewpoints need to be considered, including views from the Historic Columbia River Highway. The DEIS erroneously concludes that the scenic impacts would not be significant, even though most of the turbines would be visible from designated key viewing areas within the National Scenic Area. In addition, the BPA and EFSEC have not adequately consulted with the Yakama Nation to ensure the protection of cultural resources.

Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

John Goeckermann
[redacted]

COMMENT LETTER 293

WR - DEIS
Public Comment #444

Michelle, Kayce (UTC)

From: Duane Hunting [redacted]
Sent: Thursday, August 26, 2010 8:47 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines. This area is some of the most beautiful landscape in the country. Its beauty can not be sacrificed just for first choice location of an energy company. Remember the gulf oil spill - repair after the fact is never available.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

A wholistic energy assessment should the first thing on the review program for any proposed development - not just first cost and/or specific company investment return profit figures. The DEIS has other flaws. The DEIS fails to adequately analyze the potential cumulative impacts of this project when considered with other existing and likely future wind energy projects and other development projects in the region. The photo simulations in the DEIS are inadequate and misleading. Some of them have cloudy backgrounds, thus not adequately representing the full extent of the impacts, and other simulations are out of scale. Additional viewpoints need to be considered, including views from the Historic Columbia River Highway. The DEIS erroneously concludes that the scenic impacts would not be significant, even though most of the turbines would be visible from designated key viewing areas within the National Scenic Area.

In addition, the BPA and EFSEC have not adequately consulted with the Yakama Nation to ensure the protection of cultural resources. In the early 1990's the Department of Energy made similar misjudgements when first attempt to site the Environmental Molecular Sciences Laboratory (EMSL) at the edge of the Columbia River in Richland, WA and then were forced to relocate the facility after excavation was started dur to the discovery of native american grave sites. This was a multi-million dollar expense. We should not put this project in the same potential position without serious research and thought regarding its appropriate siting location.

Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Duane Hunting

[redacted]

COMMENT LETTER 294

WR - DEIS
Public Comment #446

Michelle, Kayce (UTC)

From: James Thomas [redacted]
Sent: Thursday, August 26, 2010 9:03 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Is Bad for the Gorge Economy

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

As a native and resident of the Gorge, I find the proposed construction crazy. The wind blows all over Eastern Washington and Oregon, so there is no shortage of alternative sites. Further, tourism in now the only real hope for towns like Hood River, White Salmon and The Dalles. To destroy the natural beauty that draws toursists is to doom the only real growth engine this region has.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

The DEIS has other flaws. The DEIS fails to adequately analyze the potential cumulative impacts of this project when considered with other existing and likely future wind energy projects and other development projects in the region. The photo simulations in the DEIS are inadequate and misleading. Some of them have cloudy backgrounds, thus not adequately representing the full extent of the impacts, and other simulations are out scale. Additional viewpoints need to be considered, including views from the Historic Columbia River Highway. The DEIS erroneously concludes that the scenic impacts would not be significant, even though most of the turbines would be visible from designated key viewing areas within the National Scenic Area. In addition, the BPA and EFSEC have not adequately consulted with the Yakama Nation to ensure the protection of cultural resources.

Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

James Thomas

[redacted]

Michelle, Kayce (UTC)

From: John & Carol Howard [redacted]
Sent: Thursday, August 26, 2010 9:12 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am firmly opposed to the proposed Whistling Ridge wind energy project. These unslightly towers do not belong at the very edge of a National Scenic Area. We mustn't let one individual's greed and ambition ruin a national treasure. If California must have the power generated by these wind turbines, then they should be located in California or at the very least, way out in eastern Oregon or Washington where their visual and environmental impact is less egregious.

Please do not permit this project to go forward. We hike often in the eastern end of the Columbia Gorge -- it is a wonderful area. The presence of huge wind turbines would ruin the experience completely!

Thank you for extending the public comment period and allowing me to submit these comments into the record.

John & Carol Howard
[redacted]

COMMENT LETTER 296

WR - DEIS
Public Comment #448

Michelle, Kayce (UTC)

From: Victor Roberge [redacted]
Sent: Thursday, August 26, 2010 9:40 AM
To: EFSEC (UTC)
Subject: opposed to the wind project

I am totally opposed to this wind project in the gorge. The Whistling Ridge project is a disaster. Proposed to be located seven miles northwest of White Salmon, Friends of the Gorge writes "the proposed wind turbines would cover more than 1,000 acres of highly visible ridgelines and would be seen from several designated key viewing areas in the Gorge including Interstate 84, the Historic Columbia River Highway, Columbia River, Cook-Underwood Road, and Panorama Point. The project would also be highly visible from communities and cities such as Mill A, Underwood, Hood River, and White Salmon." In addition, the project is proposed in a forest zone where three special-status wildlife species are documented presently including the northern spotted owl, western gray, and northern goshawk.

Please do not allow this project to continue.

victor roberge
[redacted]

COMMENT LETTER 297

WR - DEIS
Public Comment #452

Michelle, Kayce (UTC)

From: [redacted]
Sent: Thursday, August 26, 2010 10:56 AM
To: EFSEC (UTC)
Subject: Concern about Whistling Ridge Project and its negative impact on the Gorge

I am writing to express my concern about the Whistling Ridge Energy Project, proposed in the Underwood, Washington area (near the Skamania and Klickitat county lines).

I have reviewed some of the materials related to the project, and I am concerned about the extent of wildlife impacts. The proposed project may result in greater wildlife impacts than other wind energy facilities in Washington because of its location along a forested ridgeline in the foothills of the Cascade Mountains. This project is proposed to sit on the boundary of the Columbia River Gorge National Scenic Area, and it is not clear why that location has been selected. The project would directly impact the beauty and appeal of the Lewis and Clark National Trail and the Columbia River Gorge Scenic Area - one of the treasures of Washington and Oregon heritage. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat. The proposal fails to provide a credible alternatives analysis. Additional time is required for proper review. The EFSEC and BPA need to consider other alternatives, as well as other sites for wind energy. Additional planning is required for other configurations, deleting turbines to reduce impacts.

The DEIS proposal fails to present adequate and credible analysis of the impacts of this project over time and fails to consider an overall plan which recognizes other existing and potential futre wind energy projects. The photo simulations are poorly accomplished.

Please allow the time to consider other viewpoints, including views from the Historic Columbia River Highway and the Native tribes that may be impacted by the proposed projects.

Thank you for extending the public comment period.

Respectfully,

M. Kristin Price
[redacted]

COMMENT LETTER 298

WR - DEIS
'ublic Comment #458

Michelle, Kayce (UTC)

From: Richard Westcott [redacted]
Sent: Thursday, August 26, 2010 12:20 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

Surely there are plenty of places to site wind turbines so that they don't besmirch the wonderful vistas to/in/from the Columbia Gorge National Scenic Area. It's a scenic area; wind turbines are anything but scenic!

Richard Westcott
[redacted]

COMMENT LETTER 299

WR - DEIS
Public Comment #470

Michelle, Kayce (UTC)

From: [redacted]
Sent: Thursday, August 26, 2010 2:57 PM
To: EFSEC (UTC)
Subject: I support Whistling Ridge

Hello Energy Facility Site Evaluation Council,

I would like to voice my strong support for the Whistling Ridge Energy Project. This wind farm will give the Skamania County economy the boost it needs. We are too dependent on timber harvests and federal timber payments. Too many residents are stuck in low-income brackets while unemployment ranks far above the state average. Fortunately, Skamania has another natural resource to develop: wind. Bringing another industry here is exactly what our county needs. It will stimulate local spending, create jobs, and provide new tax revenues. How can that be a bad thing? Skamania County needs to diversify its resources and revenue, and Whistling Ridge can make that happen. I hope the Council approves the SDS application and that the project advances quickly.

Sincerely,
Rachel Wold
[redacted]

RECEIVED

AUG 27 2010

ENERGY FACILITY SITE
EVALUATION COUNCIL

Energy Facility Site Evaluation Council
905 Plum Street SE
P.O. Box 43172
Olympia, WA 98504-3172

August 26, 2010

Re: Whistling Ridge DEIS

Dear EFSEC Council Members/BPA Representatives:

NOTE: This communication is organized into two parts. Part One summarizes our concern about undue political pressure applied to prevent federal agencies from commenting on this DEIS. Part Two is an analysis of the Visual Resources Section of the DEIS.

PART ONE

We had not planned on commenting on the visual impact in detail; however, we recently discovered that significant political pressure has been exercised by a member(s?) of the Skamania Board of County Commissioners (BOCC) activating, it appears, US Senate and House Representatives as well. This pressure was designed to prevent the USFS and the Department of the Interior from submitting any further comment and to retract previously submitted comments regarding the DEIS. In Skamania County Resolution 2010-51 the BOCC *"demand, in the strongest possible terms, that Interior's comment be immediately retracted and removed from the public record on this matter"* ***is, we believe, a direct attempt to undermine EFSEC's/BPA's capacities and responsibilities to examine all relevant information regarding the environmental impact of this proposed project.***

We have attached the above-mentioned resolution and our letters to the BOCC and Secretary Salazar of the U.S. Department of the Interior regarding the same, dated August 23, 2010. Furthermore, we include a number of email strings below, to demonstrate some of what causes us to question the fairness of this purported "public process." These emails are copies obtained via a Public Information Request at Skamania County, WA, of Commissioner Paul Pearce's email communications in the public domain.

Public Information Request data

From: Jason Spadaro [jasons@sdslumber.com]
Sent: Friday, May 28, 2010 2:57 PM
To: Paul Pearce
Cc: Page Phillips
Subject: Re: e-mail from Posner re USFS

Chief of the USFS? That's good timing. It is a mission critical task to not only get the USFS to back off but to very importantly take a position like BPA dis in their EIS that the boundary is the boundary. If they don't, and they continue to muddy the public record, the USFS is giving Friends of the Gorge an appeal issue under NEPA that will delay the project for years in federal courts. They are acting contrary to the Administration and the State's renewable energy objectives and supporting greater harm to the environment. This scenic issue.....of the project next to the NSA is absolutely a project critical issue. We have not been able to find enviro groups willing to show courage to stand up and oppose friends of gorge on the general issue of scenery vs clean energy when considering the alternative of dead, oil poisoned ecosystems. I'm still trying to find such a group if any of you know of one.

What are the prospects of political engagement on this issue????

Paul i think you were going to ask if Brian might be able to attend and testify at the public hearings. Were you able to have that conversation?

Jason Spadaro
SDS Lumber Company
541-490-5013

Sent via mobile device

On May 28, 2010, at 2:16 PM, "Paul Pearce" <pearce@co.skamania.wa.us> wrote:

> I have a meeting with the Chief on the 7th.
>
> Paul Pearce
> Skamania County Commissioner
> Cl 360.607.7388
>
> Sent from my iPhone
>
> On May 28, 2010, at 3:06 PM, "Jason Spadaro" <jasons@sdslumber.com> wrote:
>
> > Hi Page
> > FYI, here we go again.....below is a portion of an email from EFSEC to one of the Whistling Ridge project consultants. The USFS is already raising issues over the visual analysis and project impact to the National Scenic Area.
> >
> > Jason Spadaro
> > SDS Lumber Company
> > 541-490-5013
> >
> > Sent via mobile device

1

Begin forwarded message:

Subject: e-mail from Posner re USFS

I received a call from Lynn Oliver, US Forest Servi ce. Lynn has some questions on the visual resource analysis that was done for WR. One of his questions was whether or not a Landscape Architect was consulted during development of this section. He would also like to know who did the analysis and what their qualifications are.

Generally, he expressed concerns about the quality of the analysis and whether or not it took into account the special characteristics of the Gorge.

Stephen Posner

Energy Facility Site Evaluation Council

This e-mail and any attachments contain URS Corporation confidential information that may be proprietary or privileged. If you receive this message in error or are not the intended recipient, you should not retain, distribute, disclose or use any of this information and you should destroy the e-mail and any attachments or copies.

When information begins with a USFS (Lynn Oliver) phone call requesting information from EFSEC's project manager (Stephen Posner) and an email is sent to a project consultant supposedly now working for EFSEC (we believe this may be Katy Cheny as the URS disclaimer is below the first forwarded email and Katy is the project lead) and that is forwarded to the Applicant (SDS–Jason Spadaro) who sends it to Senator Murray's staffer (Page Phillips) and Skamania County Commissioner (Paul Pearce), and then this string of communication results in the set up of a meeting ...

Public Information Request data

From: Parker (Love), [redacted]
Sent: Thursday, June 10, 2010 1:52 PM
To: page_phillips@murray.senate.gov; Pincheira, Kimberly (Cantwell)
Cc: Jason Spadaro; Paul Pearce
Subject: FW: Request for meeting with Mary Wagner

Jason and Paul,
I've reached out to Mary Wagner with Brian's encouragement to set up a meeting ASAP.
As soon as we hear back, I'll send you an update.

Kelly Parker (Love)
District Director
Congressman Brian Baird
750 Anderson #B Vancouver, WA 98661
(360) 695-6292

From: Kathy Anderson [redacted]
Sent: Thursday, June 10, 2010 1:50 PM
To: Parker (Love), Kelly
Cc: Alan J Matecko
Subject: Re: Request for meeting with Mary Wagner

Thanks Kelly, I'll try and get back to you tomorrow. It appears that the meeting would be held here in Portland, is that correct?

****
Kathy Anderson
Legislative Affairs Coordinator
[redacted]
****

"Parker (Love), Kelly" <Kelly.Parker@mail.house.gov>

06/10/2010 01:43 PM

To <kanderson03@fs.fed.us>
cc <page_phillips@murray.senate.gov>, <kimberly_blake@cantwell.senate.gov>, "Parker (Love), Kelly" <Kelly.Parker@mail.house.gov>
Subject Request for meeting with Mary Wagner

The Congressman has asked me to provide assistance to Skamania County Commissioner Paul

Pearce who is requesting a meeting with Regional Forester Mary Wagner to be held as soon as possible.

The purpose of the meeting is to update Mary Wagner on the status of the Whistling Ridge Energy Project sited in Skamania County.

While the project is outside the National Scenic Area on privately held commercial timber land, the Forest Service has in the past, formally submitted concerns about the project because several of the 50 turbines would be visually seen from inside the NSA.

Commissioner Pearce would like Mary to know about the status of the project, the current review process and its economic benefit to Skamania County.

It is reasonable to expect the Commissioner would request that the USFS not write an official letter of objection as the project is reviewed by EFSEC (Energy Facility Site Evaluation Council) and BPA. Commissioner Pearce would bring Jason Spadaro to the meeting and would invite staff from Baird and Murray's office to attend (Kelly Love Parker and Page Phillips). I believe 30 minutes would be sufficient.

Could you check Mary Wagner's schedule and see if there are dates available in the next week?

I appreciate its short notice but time is critical as the public comment period begins June 16th.

I believe the Commissioner would be very flexible in his schedule to accommodate her schedule.

Best to you,

Kelly

Kelly Parker (Love)

District Director

Congressman Brian Baird

[redacted]

2

This proposed meeting actually took place, on June 15, 2010, with stated agenda items designed to pressure the USFS to withhold valid comments regarding this project and its impact. We can't help but fear the deck is

being stacked against a fair and objective review of environmental impacts. Below is an email and attached Draft Meeting Agenda, as found on Skamania County Commissioner Paul Pearce's email from Jason Spadero, dated June 14, 2010: (Please take particular notice to Agenda Items 4 & 5)

Public Information Request data

From: Jason Spadaro [redacted]
Sent: Monday, June 14, 2010 11:10 PM
To: Paul Pearce
Subject: FW:
Attachments: USFS meeting agenda june 15, 2010.doc

Paul,
Here's a draft. I'll finalize in morning. Let me know if you have any comments. I'll bring copies for you if this meets your approval

Jason S. Spadaro
President
SDS Lumber Company
[redacted]

1

June 14, 2010

Skamania County meeting with USFS Regional Forester

regarding Whistling Ridge Wind Energy Project

Attendees:

Mary Wagner, USFS Regional Forester

Lenise Lago, USFS

Dan Harkenrider, USFS

Paul Pearce, Skamania County Commissioner

Jason Spadaro, Whistling Ridge Energy/SDS Lumber Company

Curt Smitch, Thompson Smitch (working with SDS Lumber)

Page Phillips, Office of Senator Patty Murray

Kelly Love Parker, Office of Congressman Brian Baird

Steven Sparks, Office of Congressman Brian Baird

Office of Senator Maria Cantwell (by telephone)

Agenda:

1.

Sec. 3. Purposes (Sec. 544a)

The purposes of sections 544 to 544p of this title are -
(1) to establish a national scenic area to protect and provide for the enhancement of the scenic, cultural, recreational, and natural resources of the Columbia River Gorge; and

(2) to protect and support the economy of the Columbia River Gorge area by encouraging growth to occur in existing urban areas and by allowing future economic development in a manner that is consistent with paragraph (1)

2.

Sec. 17. Savings provisions (Sec. 544o)

(a) Nothing in sections 544 to 544p of this title shall -
(1) affect or modify any treaty or other rights of any Indian tribe;

(2) except as provided in section 13(c), authorize the appropriation or use of water by any Federal, State, or local agency, Indian tribe, or any other entity or individual;

(3) except as provided in section 13(c), affect the rights or jurisdictions of the United States, the States, Indian tribes or other entities over waters of any river or stream or over any ground water resource or affect or interfere with transportation activities on any such river or stream;

(4) except as provided in section 13(c), alter, establish, or affect the respective rights of the United States, the States, Indian tribes, or any person with respect to any water or water-related right;

(5) alter, amend, repeal, interpret, modify, or be in conflict with any interstate compact made by the States before November 1 7, 1 986;

(6) affect or modify the ability of the Bonneville Power Administration to operate, maintain, and modify existing transmission facilities;

(7) affect lands held in trust by the Secretary of the Interior for Indian tribes or individual members of Indian tribes or other lands acquired by the Army Corps of Engineers and administered by the Secretary of the Interior for the benefit of Indian tribes and individual members of Indian tribes;

(8) affect the laws, rules and regulations pertaining to hunting and fishing under existing State and Federal laws and Indian treaties;

(9) require any revision or amendment of any forest plan adopted pursuant to the National Forest Management Act of 1976 (Act of October 22, 1976, Public Law 94-588, as amended (16 U.S.C. 1600 et seq.)); or

(10) establish protective perimeters or buffer zones around the scenic area or each special management area. The fact that activities or uses inconsistent with the management directives for the scenic area or special management areas can be seen or heard from these areas shall not, of itself, preclude such activities or uses up to the boundaries of the scenic area or special management areas.

3. History of USFS correspondence on Whistling Ridge Energy Project in contradiction to the above (all correspondence attached):
    - May 6, 2009 letter to Allen J. Fiksdal, EFSEC Manager
    - May 19, 2009 letter to Allen J. Fiksdal, EFSEC Manager
    - May 20, 2009 letter from Congressman Brian Baird to Regional Forester Mary Wagner
    - June 17, 2009 letter from Regional Forester Mary Wagner to Congressman Brian Baird
    - May 28, 2010 telephone call to EFSEC staff by Lynn Oliver

4. Any comments by the USFS are an attempt to extend the scope and reach of the National Scenic Area, constituting hostility toward regional economic development in timber dependent Counties and setting dangerous precedence against economic development in Counties adjacent to the CRGNSA.
    - Where is the USFS authority to issue these comments?
    - Where does the Scenic Area authority and right to restrict economic development in neighboring Counties end?
    - Does the Forest Service comment on all other industrial activities in Urban Exempt Areas and areas outside the boundary that are visible from the CRGNSA? Including activities in Portland, Vancouver, Camas, etc? Or is it just clean energy in Skamania County that the USFS opposes?
    - See map showing all lands that will be excluded from wind energy development if wind turbines visible from within the National Scenic Area are denied. Note that thousands of megawatts of existing wind energy development in operation would not have been allowed.

5. Conclusion
    - No part of the Whistling Ridge Wind Energy Project lies within the Columbia Gorge National Scenic Area.
    - No improvements requiring National Scenic Area Land Use Permits are required for the Whistling Ridge Energy Project.
    - The Columbia River Gorge Commission and U.S. Forest Service lack jurisdiction to comment on a proposed land use action located entirely outside of the National Scenic Area boundary in Skamania County.
    - Commenting on the project will be prejudicial to Skamania County, the project applicant and the wind energy industry, potentially denying Skamania County opportunity for economic development and diversification and supporting project delaying appeals by project opponents.

The attempt at pressure did not end with the meeting as evidenced in the following email dated June 17, 2010 which now also references National Park Service's comment letter:

Public Information Request data

From: Jason Spadaro [redacted]
Sent: Thursday, June 17, 2010 5:53 PM
To: Paul Pearce
Cc: Phillips, [redacted]; DeVaney, Jon; kimberly [redacted]
Subject: Whistling [redacted]
Attachments: Appendix%20B.pdf

I don't mean to sound like a broken record but page three of the attached SEPA scoping notes documents more USFS comments that are sitting in the SEPA/NEPA record on Whistling Ridge. These comments, combined with Harkenrider's, and Regional Forester Mary Wagner's response to Congressman Baird's letter enable Friends of the Gorge appeal of the project EIS, delaying the project and threatening eligibility for renewable energy incentives.

Paul, are you comfortable forwarding this to Mary Wagner as further evidence of the mess her staff has created?

The National Park Service comment letter has the same effect.

Thank you everyone for helping and working on this issue. It is appreciated.

Best,
Jason Spadaro

1

PART TWO

We feel the pressure exerted may have resulted in the USFS not doing as in-depth an analysis of the deficiencies of the DEIS and thus, our Visual Resources analysis will focus on how the USFS comments presented during the scoping process remain valid, yet unaddressed.

The first page of the USFS 2009 scoping letter (attached) alerts the risk of significant impacts…

> *"The purpose of this letter is to inform you of the risk of significant impacts to protected scenic resources if the proposed energy project is built as currently planned. This letter is not meant to imply that the project outside of the Scenic Area is regulated by the Scenic Area Act. In a letter dated May 8, 2008, the Columbia River Gorge Commission provided technical assistance in response to a request by the Oregon Department of Energy regarding a similar project in Oregon. In that letter, the Gorge Commission explained that the National Scenic Area Act specifically prohibits the implementation of a buffer around the boundaries of the Scenic Area. However, the letter also explains how Scenic Area resources would be affected by the project and how they could be protected. By requesting comments on the project, I assume that EFSEC would similarly benefit from scenic resources technical expertise in this matter.*
>
> *Diana Ross, CRGNSA landscape architect, provided me the following analysis of the Aesthetics portion of the application starting on page 4.2-27. My comments are based on the findings of that portion of the application and the recommendations made by my staff."*

Starting on page 3-155, the DEIS uses the same methodology and visual simulations, though fewer viewpoints than in the SDS application. It appears to completely ignore the risks of significant impacts and recommendations identified in the USFS scoping letter. It simply depicts the same inaccurate and misleading conclusions presented in the SDS application.

We ask, as Lynn Oliver of the USFS asked, "Was a qualified landscape architect consulted in the preparation of the DEIS?" None appear in the List of Preparers (pages 6–1 to 6–7). We must conclude one was not. The quality of this DEIS would have been substantially improved had the recommendations of Diana Ross, CRGNSA landscape architect been utilized. Her analysis of the application and our comments regarding relevant points of the DEIS follow:

"1) Key Viewing Areas (KVAs)

As mentioned in the application, the effects to scenic resources in the Scenic Area are assessed by analyzing the effects of a project on lands visible from 26 selected public vantage points from which the public views the landscape. It was not foreseen at the time the Act was passed that any development outside of the Scenic Area would be seen from these viewpoints. However, it is clear from the application that several Scenic Area Viewsheds (the land seen from these vantage points) will be affected.

9 of the 21 viewpoints analyzed are also Key Viewing areas (#6 & 9 were missing)."

DEIS table (page 3-177) shows that Key Viewing Areas #6 (SR-14) and #9 (Tom McCall Point) are still missing and that #10 (Panorama Point) has been deleted. Why were these not included in the DEIS? Clearly, they are required in order to accurately analyze the visual impact of this proposed project.

"2) Methodology and Summary of Scenic Impacts

There are many unknowns in the summary of methods on page 4.2-30-31 of the application. For example, the methods section did not disclose the heights used for the turbines or whether the software placed and sized the turbines or whether this was done in Photo Shop as an art project."

The height of the turbines used is disclosed. The methods of creating the visual simulations including the use of "Photoshop" are described (pages 3-160 & 161). The simulations created using these methods are seriously flawed and do not represent an accurate visual depiction of what the viewer will experience. This is documented in the August 19, 2010 Dean Apostol, Landscape Architect memo on the DEIS presented to BPA and EFSEC ...

"In short, the images provided are too few and otherwise limited to be able to accurately assess the potential visual impacts of the proposal.

The images included in the DEIS vary greatly in scale. For example, the turbines appear much larger in the simulation for viewpoint 3, a distance of 7.6 kilometers, than they do for viewpoint 1, a distance of 6.4 kilometers. How can this be? The turbines should appear larger in the closer view. The answer must be that the reproduced image provided, no matter what focal length was used, does not reflect the distance. This is also evident in comparing viewpoints 11 and 12, which are similar view angles. The turbines in the simulation for viewpoint 12 appear smaller and farther away than those for viewpoint 11, even though the former is 3 kilometers nearer according to the data provided on the image."

The USFS 2009 scoping analysis continues...

"There are also several questions concerning the methods used to 1) choose viewpoints, 2) define visual quality and viewer sensitivity, and 3) represent and make conclusions about impact.

1) Choosing viewpoints in the Scenic Area should be based on Key Viewing Areas. Several of these were missing from the discussion (SR-14, Tom McCall Point) and others are linear viewpoints where only one or no views were picked in the NSA (Columbia River, Hwy 35, I-84, Historic Columbia River Highway). Therefore, it is unclear whether the impacts to NSA scenic resources were adequately captured."

As pointed out earlier, SR-14 and Tom McCall viewpoints are still missing and Panorama Point has been deleted in the DEIS. It is abundantly clear from Dean Apostol's WRE DEIS analysis (2010) that the impacts to the NSA were not adequately captured in the DEIS.

"Figures 3.9-1 and 3.9-2 are useful in assessing the potential visibility of proposed turbines from within the National Scenic area and elsewhere. But they fail to note the full extent to which the turbines would be exposed to key viewing areas. The analysis treats the scenic impact problem as a viewpoint impact as opposed to a view corridor impact, but several of the affected KVAs are corridors, not points. These corridors include designated scenic roads and the Columbia River. The DEIS should be revised to analyze the distance along the entire length of these KVAs from which the project would be visible and to simulate views from multiple points along these KVAs in order to identify where the greatest impacts are likely to occur.

As it stands, the viewpoints chosen for analysis may not be truly representative: I-84, the Columbia River and the Historic Columbia River Highway all have multiple possible view locations that may experience greater impacts than the single locations chosen by the applicant. Each of these view corridors come within 3 miles of the project, yet all sample viewpoints are more than 4 miles from the project. Additional views along these three KVAs should be analyzed. For example, a simulation from the Historic Columbia River Highway at Mitchell Point directly across the Columbia River from the project is critical."

Mitchell Point is a significant view point and should have been, but is not considered in the DEIS, and according to the letter (received by BPA August 3, 2010) from the Friends of the Historic Columbia River Highway:

"The Mitchell Point overlook is even more visually sensitive than I-84, both because it is higher in elevation and it is a place where people stop, get out of their cars and take photos. It is closer to the proposed project than Viento State Park, Koberg State Park and the single location on the Hood River to Mosier section of the Historic Columbia River Highway State Trail that were analyzed. This site must be analyzed for visual impact from the proposed project."

Continuing, the USFS scoping analysis (2009) points out...

> *"2) The NSA is a nationally known and protected landscape of high quality and high sensitivity. All KVA scenic analyses should reflect this. The results of the applicant's analysis are heavily weighted on the assignment of existing scenic quality and viewer sensitivity. These methods were not tracked and do not represent the reality of the Scenic Area."*

The visual sensitivity assessment is heavily influenced by what appears to be an arbitrary decision.

> ***Quoting from the DEIS:*** *"Moderate levels of sensitivity were assigned to areas where turbines would be visible from 0.5 mile to 5 miles within the primary view of residences and roadways" (page 3-159).*

This is not based on any scientific studies presented. It is, in our opinion, self-serving and results in a measurement scale purposely designed to create faulty conclusions the proponent wants to support... namely that any turbine sited further than 0.5 mile will not have a high level of viewer sensitivity. This is <u>not</u> analyzing the facts to determine the impact, but skewing the measurement tools and analysis to achieve the desired results for the proponent.

The visual contrast method, as thoroughly discussed in the Dean Apostol comment (2010), is a more objective method and would be less susceptible to manipulation by such arbitrary decisions. The analysis should be redone using the visual contrast method rather than the Federal Highway Administration Process that was used.

> *"In my opinion, the FHWA method is not a suitable method for evaluating the visual impacts of wind energy projects in general, and this project in particular. This system was designed to be used only for assessing impacts from highway related development".*
>
> *"... visual contrast is a useful way of measuring impacts regardless of whether a resource management objective has been established, because it relies on simple and time tested analytical standards"*

This visual contrast method was indeed recommended in the USFS scoping comments (2009), but once again ignored in the preparation of the DEIS...

"3) The conclusions made on the summary chart would more accurately be made using degree of contrast with the natural landscape both during the day and at night, and distance of the viewer from the project area. This assumes that the most visually impacted viewpoints have been found and that the simulations accurately depict the degree of contrast. The impact summaries starting on page 4.2-68 discuss these contrasts but the ratings do not reflect the discussion. For example the text for viewpoint #1 states that "the presence of the turbines would reduce the scene's degree of intactness by introducing a large number of highly visible engineered vertical elements" but the impact rating is low to moderate."

Rather than adjusting the rating to reflect the discussion in the original application, the sentence referenced just above regarding viewpoint #1 was deleted from the DEIS. A discussion was added in an attempt to justify the proponents desired low to moderate ratings. The** "average scenic value"(DEIS 3-168) **within the NSA is high scenic value in contrast to most other landscapes outside the NSA, not moderate.

"The American Society of Landscape Architects included the Columbia River Gorge as one of the 100 most outstanding landscapes in the United States, ranking it along with Yosemite, Yellowstone and other national icons." (Apostol 2010).

The USFS scoping comments (2009) continues...

"The Summary of Existing Scenic Quality and Project Visual Impacts on page 4.2-67 did not rate any viewpoint as having a high level of impact defined as: turbines "highly visible in areas with a high number of sensitive viewers" and greatly altering levels of vividness, unity, and intactness. Viento State Park was rated as highest impact (moderate to high) but the photo print did not show any turbines (Figure 4.2-17).

The Summary of Existing Scenic Quality and Project Visual Impacts in the DEIS (page 3-177), incredulously does not rate the anticipated visual impact on any viewpoint as high. The same flawed methods were used in the DEIS as in the SDS application. None of the needed changes suggested by the USFS were addressed.

The Viento State Park photomontage in the DEIS (Figure 3.9-11), still does not show a single turbine. The same "photo prints" used in the SDS application are used in the DEIS. Despite a year to prepare the DEIS, no new photos or photomontages were utilized nor were the former photos even corrected.

As Dean Apostol (2010) points out:

"This is a very misleading photomontage. The image is very faint, and the size does not correspond to the relatively short view distance of 6.4 kilometers (4 miles). The wireframe view indicates that the 18 turbines seen from this viewpoint would be very high contrast and would have high impacts, similar to those discussed under Viewpoint 11. All 18 turbines break the skyline, there are overlapping rotors and a jumbled, chaotic composition. The turbines located at the high point in the center of the image are particularly strong impact. The turbines would be framed by Dog Mountain, seen on the left side of the photo, and a portion of Underwood Bluff, seen on the right side of the photo (Figure 3.9-11). These are very natural, highly intact landforms, exacerbating the contrast that the turbines would introduce. Existing development prohibitions on these landforms, which lie within the National Scenic Area, are at the highest protection level, allowing no visual contrast. This illustrates the high sensitivity of the viewshed."

Pointing out further limitations with the pictures, the USFS scoping comments (2009) continue...

" It is generally very difficult to fully depict the visual effect of viewing the landscape in a small photo and because of these limitations, pictures with clouds at the skyline should not be used". In addition, many non-NSA viewpoints and non-KVA viewpoints were added making it difficult to assess the effects in the Scenic Area. The scenic impacts both at night and during the day would be better depicted using photos of existing turbines in the Gorge. The existing development east of the Scenic Area provides a better indication of the impact on the scenic resource than represented in these visualizations. The visualizations are important for finding the number and location of the visible turbines, but have limited utility for assessing scenic impact."

The exact same small photos used in the application with clouds are used in the DEIS, disregarding the comments of the USFS. We agree with Dean Apostol's (2010) statement:

"The photomontage images in the DEIS are flawed. The scale and distance appear to be inconsistent. Atmospheric conditions on some photos are hazy. Use of a white cloud background reduces apparent color contrast of turbines skylined on visually prominent ridges."

This should have been addressed in the preparation of the DEIS. It must be addressed with more realistic depictions of the turbines both during the day and at night in a revised DEIS. The public will be more accurately informed and then could make relevant comment.

We agree with the findings of Dean Apostol (2010)...

> *"The visual impact analysis provided in the DEIS is faulty and incomplete. In addition, the DEIS's conclusions that visual sensitivity is only low to moderate and that impacts would be low to moderate from most viewpoints (Table 3.9-2) are not supported by the facts. The project as presented would have substantial adverse impacts to scenic resources."*

Finally the USFS scoping comments (2009) made the following recommendations, which were either ignored or not adequately addressed.

> *"3) Recommendations*
> *In order to assure that the scenic resource impact is adequately analyzed, I recommend the following improvements to the scenic resource impact assessment:*
> - *Include a discussion or summary of the most visible turbines,*
> - *Include photographs of existing energy projects visible in the NSA,*
> - *Do not use visual simulations (at a small scale with clouds in the picture) to depict the visual impact of visible turbines,*
> - *Make certain that the most visible viewpoints have been covered, especially with respect to the linear viewpoints, and*
> - *Make certain to include the night-time effects in your analysis."*

Instead the DEIS:

Does <u>not include</u> "photographs of existing energy projects visible in the NSA"

<u>Uses</u> "visual simulations (at a small scale with clouds in the picture) to depict the visual impact of visible turbines"

<u>Leaves out</u> the two specifically USFS requested viewpoints SR-14 (#6), Tom McCall Point (#9) <u>and eliminates</u> Panorama Point (#10)

<u>Does not</u> "include the night-time effects" in the analysis.

The USFS scoping comments (2009) concludes with the following:

> *"In order to prevent the scenic impact of the turbines visible from the Scenic Area Key Viewing Areas, I also recommend that the applicant eliminate turbine locations found to be visible from Scenic Area KVAs. I am hopeful that close attention to these impacts will result in a solution which will fit the unique area that this project will potentially benefit."*

The SDS applicant has steadfastly refused to even consider any alteration or adjustment to the proposed Whistling Ridge Energy Project, totally ignoring expert feedback and recommendations, while actively seeking to suppress the inclusion of additional expert comment, as well as the removal of previously submitted comment.

We believe the attempt to suppress the USFS and the Department of the Interior is motivated due to the validity of these expert comments... comments that point out fatal flaws in both the application and the DEIS.

It saddens us that EFSEC and BPA have attached your names to this poorly constructed and inaccurate document. Having done so has reduced our trust in and your credibility as regulatory agencies. Our analysis of both the Noise and Visual Resources sections of this DEIS cause us, justifiably, to fear that the poor methodologies and resulting assessments may be replete throughout the DEIS. Please, do the right thing and redo this DEIS with the use of expert and independent feedback, appropriate methodologies, accurate and realistic representations and objective assessment.

Sincerely,

Keith Brown, Ph.D.
Teresa Robbins

[redacted]

Attachments:

Skamania County Board of County Commissioners Resolution 2010-51.

United States Department of the Interior Office of Environmental Policy and Compliance letter to BPA dated July 19, 2010.

United States Department of the Interior National Parks Service letter to Congressmen Brian Baird and Doc Hastings dated April 15, 2010.

Keith Brown and Teresa Robbins letter to Skamania County Board of County Commissioners re: Resolution 2010-51 dated August 23, 2010.

Keith Brown and Teresa Robbins letter to Secretary Salazar Department of the Interior re: Efforts to Stifle Comments by the Department of the Interior dated August 23, 2010.

Dan Harkenrider USFS Columbia River Gorge National Scenic Area letter to Allen Fiksdal EFSEC dated May 6, 2009.

RESOLUTION 2010-51

(A Resolution Demanding Retraction of the Department of Interior Comments on the Draft Environmental Impact Statement for the Whistling Ridge Wind Energy Project and explanation of its Actions in Commenting without Authority or Jurisdiction against the Secretary's and Administration Policy)

WHEREAS, Whistling Ridge Energy Project filed an Application for Site Certification to the Washington Energy Facility Site Evaluation Council ("EFSEC") on March 10, 2009 for the Whistling Ridge Energy Project; and

WHEREAS, EFSEC is lead agency pursuant to the State Environmental Policy Act, and Bonneville Power Administration ("BPA") is federal lead agency pursuant to the National Environmental Policy Act; and

WHEREAS, EFSEC and BPA have independently issued a joint Draft Environmental Impact Statement for this Project and are seeking public comment on the DEIS; and

WHEREAS, the entire project is located outside of the Columbia River Gorge National Scenic Area ("Scenic Area") on privately owned lands in Skamania County; and

WHEREAS, Federal Government regulation of private lands as well as the economic survival of Skamania, other local counties and communities were major concerns when the Columbia River Gorge National Scenic Area ("Scenic Area Act") was debated in Congress; which resulted in several major compromises to address these concerns before passage of the Scenic Area Act in its final form, without which, Congress would not have enacted the Scenic Area Act and President Reagan would not have signed it into law. These compromises included the purchase or trade of private lands that were regulated for the protection of scenery in the Special Management Areas, the designation of Urban Areas that are completely exempt from restrictions and the designation of an external boundary that by Congressional direction is the absolute boundary with no buffers or setbacks outside of the Scenic Area. Congressional intent is found in the "Savings Provision" at 16 USC § 544o(a)(10) which states:

> *Nothing in [this Act] shall . . . establish protective perimeters or buffer zones around the scenic area or each special management area. The fact that activities or uses inconsistent with the management directives for the scenic area or special management areas can be seen or heard from these areas shall not, of itself, preclude such activities or uses up to the boundaries of the scenic area or special management areas."*; and

WHEREAS, The National Trail System Act, 16 USC §§ 1241 – 1251 authorizes Congress to designate National Scenic and Historic Trails but does not, by mandate or implication, authorize Interior to regulate or restrict private lands or to even negatively comment on or oppose private projects proposed on private lands nearby, or visible from, designated trail sections; and

WHEREAS, Skamania County recently received a copy of the U.S. Department of the Interior ("Interior") DEIS comment letter dated July 19, 2010, wherein Interior raises concerns about visibility of the proposed project from the Scenic Area and the nationally designated Lewis and Clark National Historic Trail and suggests elimination of Whistling Ridge wind turbines that are visible from both the Scenic Area and the Lewis and Clark National Historic Trail; and

WHEREAS, many thousands of miles of trails are designated throughout the Western United States under the National Trail System Act. With the exception of federal lands, and lands acquired by the Federal Government for preservation of trails, the Federal Government has no authority to regulate or restrict the use of private lands near trails designated under the National Trail System Act, for any reason, especially for purported visual effects on trail segments. Moreover, as described in the Interior letter, the "trail" at issue here is coextensive with US Interstate 84 and Washington State Highway 14 which are not pristine "trail" segments—they are major, busy multi-modal transportation corridors, including the only sea level train route (on both sides of the Columbia River) through the Cascades, with over 80 commercial trains transiting per day.

NOW, THEREFORE, BE IT RESOLVED THAT THE Board of Commissioners being concerned and alarmed with Interior's comments and apparent attempt at inappropriate Federal intervention on the consideration of the Whistling Ridge application, find as follows:

The Board finds: Interior's reference to the National Trail Systems Act and the Scenic Area as authority for the comment letter is an abuse of federal authority that exceeds the legal and policy directives and Congressional intent of both the National Trail Systems Act and the Scenic Area Act. Interior's comments are particularly egregious where they recommend that renewable wind energy construction (proposed on private lands outside of the Scenic Area and miles away from any trail segments in Skamania County) that are visible from the National Trail Systems Act and the Scenic Area should be eliminated from the Project, or that the proponent must justify "feasibility" for the locations visible from I-84.

The Board finds: Many man-made structures and activities are visible and will be visible along these "trails" that follow Interstate highways, where the most visible of "impacts" on travelers are the many semi trucks, trains, transmission lines, dams, industrial facilities, mines, and coal, gas and nuclear power generating facilities, as well as many cities, homes, commercial buildings, advertising signs and billboards, that they pass by. It is a gross abuse of federal authority to negatively comment on, and seek to obstruct a renewable energy project on private lands merely because a small portion is remotely visible from an Interstate highway.

The Board finds: Consistent with our concerns raised above regarding National Trail Systems Act authority, that Interior's recommendation of restricting private land development in view of the Scenic Area is in direct violation of the critically important Scenic Area Act compromises and Savings Provisions the intent of which was to allow local counties economic development opportunity for their continued survival.

The Board finds: Interior's comments and recommendations have serious policy implications not only for renewable energy development but also for other non-wind energy related projects that are visible from the Scenic Area and National Historic Trails, such as electrical transmissions systems, dams, rail transportation, interstate commerce and traffic, as well as residential, commercial and industrial development in Skamania and other Counties near the Scenic Area and/or Counties located near similarly designated trails under the National Trails System Act.

The Board finds: Interiors comments contradict both the Secretary's publicly stated policy as it pertains to renewable energy as well as contradicting the clear energy policy direction of the current Administration.

The Board finds: Finally, in addition to the comment concerning the Scenic Area and the Interstate Highway corridor, Interior provided specific comments related to purported groundwater issues—issues raised by local citizen neighbor opponents at the NEPA/SEPA comment hearing. Skamania County has regulatory responsibility for groundwater issues, and will work with EFSEC to address the citizen comment. This is ***not*** a federal issue. Interior has no authority to insert itself into this uniquely local issue, and its decision to do so demonstrates its lack of regard for Skamania County's authority: strongly suggesting inappropriate collaboration with Whistling Ridge project opponents.

NOW, THEREFORE, BE IT FINALLY RESOLVED THAT THE Board of Commissioners reacting to this clear abuse of authority without jurisdiction, hereby demand, in the strongest possible terms, that Interior's comments be immediately retracted and removed from the public record on this matter, and further respectfully request that the Secretary and the Administration clarify how Interior has acted within its authority, consistent with the stated policy direction of the Secretary and the Administration, and what this letter means for the implementation of the Administration's declared land management and energy policies.

DATED this 3rd day of August 2010.

ATTEST:

BOARD OF COMMISSIONERS SKAMANIA COUNTY WASHINGTON CLERK OF THE BOARD

Clerk of the Board

SKAMANIA COUNTY
BOARD OF COMMISSIONERS

Chairman

Commissioner

Commissioner

Approved as to form only:

Skamania County Prosecuting Attorney

Aye 3
Nay ____
Abstain ____
Absent ____

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
620 SW Main Street, Suite 201
Portland, Oregon 97205-3026

TAKE PRIDE IN AMERICA

9043.1
IN REPLY REFER TO:
ER10/492

Electronically Filed

July 19, 2010

Andrew M. Montaño
Environmental Project Manager
Bonneville Power Administration – KEC-4
P.O. Box 3621
Portland, Oregon 97208

Dear Mr. Montaño:

The U.S. Department of the Interior (Department) has reviewed the Draft Environmental Impact Statement (DEIS) for the Bonneville Power Administration's Whistling Ridge Energy Project, Skamania County, Washington. The Department offers the following comments for use in developing the Final Environmental Impact Statement for the project.

Lewis and Clark National Historic Trail

The proposed Whistling Ridge Energy project is located within five miles of the Lewis and Clark National Historic Trail (NHT), a congressionally-designated NHT, which follows the Columbia River and is within the area analyzed in the DEIS for potential visual impacts. In addition, US Interstate 84 and Washington Route 14 are the state-designated Lewis and Clark auto tour routes in the project area. Many visitors experience Lewis and Clark NHT by traveling the auto tour routes and stopping at interpretive and recreational sites along the way. The Department considers the viewshed along the river and auto tour routes to be a critical part of the trail visitor experience.

The Lewis and Clark NHT was established by Congress in an amendment to the National Trails System Act in 1978. 16 U.S.C. § 1244(a). As administrator of the trail, the National Park Service (NPS) is charged under this Act with the identification and protection of the historic route, remnants, and artifacts of the trail for public use and enjoyment.

Based on the analysis of visual impacts in the DEIS, it appears that a varying number of turbines will be visible from the trail's historic river and auto tour routes from near

Koberg Beach State Park to Lindsey Creek State Park. This approximately 15-mile stretch of the Columbia River Gorge has numerous recreational opportunities and scenic views that add significantly to enjoyment of the historic trail. Of the five viewpoints along US Interstate 84 analyzed in the DEIS, Viewpoint 14 at Viento State Park, is rated in Table 3.9-2 as having an anticipated moderate to high level of visual impact. However, on page 3-193 of the DEIS, the potential visual impact for this viewpoint is stated as only moderate. Furthermore, it appears that the turbines were inadvertently omitted in the photomontage in Figure 3.9-11. While difficult to discern the impact at this location without clarification on the accuracy of the visual simulation, we believe that the impact should be rated as high given the placement of turbines on the skyline within four miles of a park located along the auto tour route.

Turbine string A1-A7 would be highly visible from numerous locations along the trail due to its placement on a ridgeline close to the Columbia River Gorge. The NPS recommends removing or relocating these seven turbines, if feasible. This would significantly reduce the impact to visual resources along the historic trail. The visual resources in this region—Columbia River Gorge National Scenic Area and Lewis and Clark NHT—are important resources that should be protected.

Please add the following people to the federal agency distribution list for this project:

Dan Wiley
Chief of Resources Stewardship
Lewis and Clark National Historic Trail
601 Riverfront Drive
Omaha, NE 68102
(402) 661-1830
Dan_Wiley@nps.gov

Lee Kreutzer
National Trails System
National Park Service
324 S. State, Suite 200
Salt Lake City, UT 84111
(801) 741-1012 ext. 118
Lee_Kreutzer@nps.gov

SPECIFIC COMMENTS

Water Resources Section 3.3

Pg. 3-26: Section 3.3.1.3 lacks sufficient information on the existing groundwater environment to support the finding of little or no impact. Suggest the section more fully address the depth to groundwater, flow direction, and transmissivity (permeability) of the aquifer as it relates to possible affects on the area domestic and agricultural ground-water resources (also see section 3.3.1.5). Helsel et.al. (2002) is a good reference for this type of analysis.

Pg. 3-29: Because section 3.3.3 addresses mitigation procedures for the isolation of groundwater from chemical spills, we assume that chemicals will be present on site during both construction and operation. Suggest the document include a discussion of potential chemical spills, and aquifer transmissivity (permeability), as it relates to the potential movement of contaminants toward nearby domestic or agricultural water wells.

Reference

Helsel, D.R. and Hirsch, R.M., 2002, Statistical methods in water resources: U.S. Geological Survey—Techniques of Water-Resources Investigations Book 4, Chapter A3, 510 p. Available on the internet at: http://pubs.usgs.gov/twri/twri4a3/

Thank you for the opportunity to review and comment on this DEIS. If you have any questions concerning the NPS comments, please contact Dan Wiley at (402) 661-1830 or at Dan_Wiley@nps.gov, or Lee Kreutzer at (801) 741-1013 (x118) or at Lee_Kreutzer@nps.gov. If you have any questions concerning the USGS comments, please contact Gary LeCain, USGS Coordinator for Environmental Document Reviews, at (303) 236-5050 (x229) or at gdlecain@usgs.gov. If you have any other questions, please contact me at (503) 326-2489.

Sincerely,

Preston A. Sleeger
Regional Environmental Officer

United States Department of the Interior

NATIONAL PARK SERVICE
Pacific West Region
909 First Avenue, Fifth Floor
Seattle, Washington 98104-1060

IN REPLY REFER TO
ER-09/423

April 15, 2010

The Honorable Brian Baird
United States House of Representatives
2350 Rayburn House Office Building
Washington, D.C. 20515-4703

The Honorable Doc Hastings
United States House of Representatives
1203 Longworth House Office Building
Washington, D.C. 20515-4704

Dear Congressmen Baird and Hastings:

The National Park Service (NPS) was recently made aware of your letter dated November 18, 2009, concerning the Whistling Ridge Energy Project (Project), through Friends of the Columbia Gorge and the Lewis and Clark National Historic Trail office. We apologize for the delay in responding, as we have been unable to locate any record indicating that we received the letter.

Your letter expresses concern that NPS, through its May 18, 2009 comments on the Project, is acting outside of NPS jurisdiction to obstruct the Project. The NPS takes your concerns very seriously. NPS recognizes the limitations on its authorities outside of NPS-administered lands. In our letter dated May 18, 2009, NPS made recommendations, not demands, which would help to protect the viewshed from the Lewis and Clark National Historic Trail (NHT) corridor. NPS noted certain advantages to developing the overall wind farm at the proposed location but recommended decreasing the number of turbines in one corridor to alleviate some of the visual impacts. We recognize that NPS is not the action agency for this Project. Nonetheless, NPS has a responsibility under the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321-4370f, to provide comments within NPS' special expertise with respect to environmental impacts. *See* 40 C.F.R. Part 1503.

As administrator of the Lewis and Clark NHT, the NPS is obligated to protect the natural, cultural, historic, and scenic resources of the trail for public use and enjoyment by present and future generations. Therefore, we believe we have an obligation to the American people to provide comments on this project as it moves through the NEPA process, and offer suggestions to the project proponent that will help minimize significant impacts to the trail. We fully support

TAKE PRIDE IN AMERICA

the development of renewable energy generation in an environmentally-sensitive manner that is cognizant of surrounding natural, cultural, historic, and scenic resources.

While we do not intend to retract our May 18, 2009 letter, per your recommendation, we hope this letter offers sufficient clarification. If you have any further questions or concerns, please do not hesitate to contact me.

Sincerely,

Rory D. Westberg
Deputy Regional Director, Planning and Resource Management
Office: (206) 220-4020
FAX: (206) 220-4159
Rory_Westberg@nps.gov

Skamania County Commissioners
P.O. Box 790
Stevenson, WA 98648

August 23, 2010

RE: Skamania County Resolution 2010-51

Dear Commissioners:

We were unaware of this action when we last saw you on August 17th or we would have approached you at that time.

We write to express our concern and dismay regarding Resolution 2010-51. It is certainly within the purview of the BOCC to seek support for a project you believe will benefit the county. It is NOT, in our opinion, your right to suppress opinions of experts uniquely qualified to comment and provide valid perspective on the impact Whistling Ridge Energy Project would have on the National Scenic Area and Historic Trails. To *"demand, in the strongest possible terms, that Interior's comment be immediately retracted and removed from the public record on this matter"* is, we believe, a direct attempt to undermine EFSEC's capacity to examine all relevant information regarding the environmental impact of this project.

To quote the May 6, 2009 scoping comment letter of Daniel T. Harkenrider, Area Manager for the Columbia Gorge National Scenic Area, "In a letter dated May 8, 2008, the Columbia River Gorge Commission provided technical assistance in response to a request by the Oregon Department of Energy regarding a similar project in Oregon. In that letter, the Gorge Commission explained that the National Scenic Area Act specifically prohibits the implementation of a buffer around the boundaries of the Scenic Area. **However, the letter also explains how Scenic Area resources would be affected by the project and how they could be protected. By requesting comments on the project, I assume that EFSEC would similarly benefit from scenic resources technical expertise in this matter."** *(emphasis added)*

This process, to work effectively and be valid, must necessarily seek and examine comment from all perspectives. Dependent upon a variety of opinion, it particularly benefits from the technical expertise that can be provided by personnel of agencies such as the Office of Environmental Policy and Compliance of the Department of Interior and the Columbia River Gorge National Scenic Area.

You have sought and received support for this project from Congressman Baird. You did not object to this support and ask it be retracted because he holds federal office. You did not ask to retract the support voiced by Klickitat county officials. You did not ask to retract the support voiced by White Salmon officials.

BOCC support of this particular project has been steadfast, but your actions have discounted any environmental impact. This is evidenced in the disregard of requests to do an EIS during the Title 21 revision public hearings; the placement of a "permanent hold" on Title 21 zoning after the Hearing Examiner ruled that an EIS be completed by the county before proceeding; and finally, removing from the Hearing Examiner, responsibilities to hear appeals of SEPA determinations, thus forcing residents to go to court (at great personal expense) for any future

appeal. And now, through this resolution, the BOCC seeks to remove valid expert concerns about the environmental impact of this project.

The BOCC has every right to disagree and present counter-evidence, but no right to squelch or disallow others' opinions. You have the opportunity to present an analysis of the draft EIS. Have you identified any deficiencies? There are valid deficiencies identified by the Department of Interior, and previously depicted during the scoping process by the USFS Columbia Gorge National Scenic Area Landscape Architect. We, too, have identified and documented numerous deficiencies. And it is all of our rights to express them.

Suppression will result in skewed decisions not based on full perspectives and facts. Better decisions are made when a broad spectrum of information is provided.

Respectfully,

Keith Brown and Teresa Robbins
[redacted]

Secretary Ken Salazar
Department of the Interior
1849 C Street N.W.
Washington, D.C. 20240

August 23, 2010

RE: Whistling Ridge Energy Project in Skamania County, Washington and efforts to stifle comment by the US Department of the Interior

Dear Secretary Salazar:

On August 3, 2010 the Skamania Board of County Commissioners passed Resolution 2010-51 *(see attached)* in which they *"...demand, in the strongest possible terms, that Interior's comment be immediately retracted and removed from the public record..."*. This is a blatant attempt to prevent appropriate special expertise from weighing in and being duly considered (as required by the NEPA process) with respect to the environmental impacts of the above listed project. This resolution refers specifically to the July 19, 2010 letter from the Department of the Interior Office of Environmental Policy and Compliance (Portland, Oregon) written to Andrew M. Montano of the Bonneville Power Administration *(see attached)*.

Member(s) of the Board of County Commissioners (BOCC) have activated considerable political pressure to attempt to thwart federal agency experts' (Department of Interior as well as the United States Forest Service) capacities to provide vital and valid comment regarding this project. Unfortunately, this BOCC has a demonstrated history of attempting to sidetrack appropriate environmental analysis *(see attached letter to BOCC from Keith Brown and Teresa Robbins)*.

Furthermore, on November 18, 2009, Congressmen Brian Baird and Doc Hastings requested retraction of comments provided by the Department of Interior National Park Service (NPS) in relation to the same project *(see attached)*. We concur with the NPS response: *"We fully support the development of renewable energy generation in an environmentally-sensitive manner that is cognizant of surrounding natural, cultural, historic, and scenic resources"* and that *"NPS has a responsibility under the National Environmental Policy Act (NEPA)... to provide comments within NPS' special expertise with respect to environmental impacts."* Also, *"... we believe we have an obligation to the American people to provide comments*

on this project as it moves through the NEPA process, and offer suggestions to the project proponent that will help minimize significant impacts to the trail" (Lewis and Clark, NHT).

The draft EIS comment period closes August 27, 2010 for this project. We ask that you strongly confirm these agencies' right and responsibility to comment, as well as provide them any necessary support to achieve this.

Respectfully submitted,

Keith Brown and
Teresa Robbins
[redacted]

Attachments:

- Department of Interior Letter Office of Environmental Policy and Compliance (Portland Oregon Office) July 19, 2010 (to Montano, Bonneville Power Administration)
- Resolution 2010-51 by Skamania County Commissioners – August 3, 2010
- Letter to Skamania County Commissioners from Keith Brown and Teresa Robbins – August 23, 2010
- Department of Interior Letter National Park Service Pacific West Region (Seattle Washington) April 15, 2010 (response to Congressmen Brian Baird and Doc Hastings)

USDA United States Department of Agriculture | Forest Service | Columbia River Gorge National Scenic Area | 902 Wasco Ave., Suite 200
Hood River, OR 97031
541-308-1700
FAX 541-386-1916

File Code: 2370
Date: May 6, 2009

Allen J. Fiksdal
EFSEC Manager
Energy Facility Site Evaluation Counsel
905 Plum Street SE
PO Box 43172
Olympia, WA 98504-3172

Dear Mr. Fiksdal:

It is my understanding that your office is accepting agency comment on the proposed Whistling Ridge Energy Project application for site certification. The Forest Service is submitting the following comment with respect to the Columbia River Gorge National Scenic Area--one of America's natural wonders known worldwide for its scenic beauty and the variety and quality of its recreational opportunities. Since the Scenic Area was created by Congress in 1986, new developments occur within a controlled framework that protects the resources that make the Scenic Area special. I understand that only a small portion of the proposal is located within the boundaries of the Scenic Area. This letter concerns impacts that will result from wind turbines visible from within the Scenic Area.

The purpose of this letter is to inform you of the risk of significant impacts to protected scenic resources if the proposed energy project is built as currently planned. This letter is not meant to imply that the project outside of the Scenic Area is regulated by the Scenic Area Act. In a letter dated May 8, 2008, the Columbia River Gorge Commission provided technical assistance in response to a request by the Oregon Department of Energy regarding a similar project in Oregon. In that letter, the Gorge Commission explained that the National Scenic Area Act specifically prohibits the implementation of a buffer around the boundaries of the Scenic Area. However, the letter also explains how Scenic Area resources would be affected by the project and how they could be protected. By requesting comments on the project, I assume that EFSEC would similarly benefit from scenic resources technical expertise in this matter.

Diana Ross, CRGNSA landscape architect, provided me the following analysis of the Aesthetics portion of the application starting on page 4.2-27. My comments are based on the findings of that portion of the application and the recommendations made by my staff:

1) **Key Viewing Areas (KVAs)**

As mentioned in the application, the effects to scenic resources in the Scenic Area are assessed by analyzing the effects of a project on lands visible from 26 selected public vantage points from which the public views the landscape. It was not foreseen at the time the Act was passed that any development outside of the Scenic Area would be seen from these viewpoints. However, it is clear from the application that several Scenic Area Viewsheds

(the land seen from these vantage points) will be affected.

9 of the 21 viewpoints analyzed are also Key Viewing areas (#6 & 9 were missing).

- 1-SR 141
- 4 & 22- Cook-Underwood Road
- 10-Panorama Point
- 11-I-84 Westbound
- 12-Koberg State Park (Columbia River)
- 13-I-84 Eastbound
- 14-Viento State Park (Columbia River)
- 19-Historic Columbia River Highway

2) **Methodology and Summary of Scenic Impacts**

There are many unknowns in the summary of methods on page 4.2-30-31 of the application. For example, the methods section did not disclose the heights used for the turbines or whether the software placed and sized the turbines or whether this was done in Photo Shop as an art project.

There are also several questions concerning the methods used to 1) choose viewpoints, 2) define visual quality and viewer sensitivity, and 3) represent and make conclusions about impact.

1) Choosing viewpoints in the Scenic Area should be based on Key Viewing Areas. Several of these were missing from the discussion (SR-14, Tom McCall Point) and others are linear viewpoints where only one or no views were picked in the NSA (Columbia River, Hwy 35, I-84, Historic Columbia River Highway). Therefore, it is unclear whether the impacts to NSA scenic resources were adequately captured.

2) The NSA is a nationally known and protected landscape of high quality and high sensitivity. All KVA scenic analyses should reflect this. The results of the applicant's analysis are heavily weighted on the assignment of existing scenic quality and viewer sensitivity. These methods were not tracked and do not represent the reality of the Scenic Area.

3) The conclusions made on the summary chart would more accurately be made using degree of contrast with the natural landscape both during the day and at night, and distance of the viewer from the project area. This assumes that the most visually impacted viewpoints have been found and that the simulations accurately depict the degree of contrast. The impact summaries starting on page 4.2-68 discuss these contrasts but the ratings do not reflect the discussion. For example the text for viewpoint #1 states that "the presence of the turbines would reduce the scene's degree of intactness by introducing a large number of highly visible engineered vertical elements" but the impact rating is low to moderate.

The Summary of Existing Scenic Quality and Project Visual Impacts on page 4.2-67 did not rate any viewpoint as having a high level of impact defined as: turbines "highly

visible in areas with a high number of sensitive viewers" and greatly altering levels of vividness, unity, and intactness. Viento State Park was rated as highest impact (moderate to high) but the photo print did not show any turbines (Figure 4.2-17). It is generally very difficult to fully depict the visual effect of viewing the landscape in a small photo and because of these limitations, pictures with clouds at the skyline should not be used. In addition, many non-NSA viewpoints and non-KVA viewpoints were added making it difficult to assess the effects in the Scenic Area. The scenic impacts both at night and during the day would be better depicted using photos of existing turbines in the Gorge. The existing development east of the Scenic Area provides a better indication of the impact on the scenic resource than represented in these visualizations. The visualizations are important for finding the number and location of the visible turbines, but have limited utility for assessing scenic impact.

The following table summarizes the visible turbines and the viewpoints from which they are visible. The highlighting indicates turbines seen from 4 KVAs or more. (It would be helpful if such a table were included in the applicant's analysis):

Turbine	Key Viewing Area (According to the Applicant)							
	SR-141	Cook-Underwood (2)	Panorama Pt.	I-84 W	I-84 E	Viento (Columbia)	Koberg (Columbia)	HCRH
A1-A5		X	X		X	X		
A7		X	X			X		
A8		X				X		
A9-A13		X				X		
B1-B8						X		
B9				X		X		
B10				X			X	
B11-B14	X			X			X	
B15	X			X	X		X	X
B16				X	X		X	X
B17								
B20	X			X			X	
C1	X			X			X	X
C2-C5	X		X	X			X	X
D1-D3	X			X				X
E1-E2	X			X			X	
F1-F3							X	

3) Recommendations

In order to assure that the scenic resource impact is adequately analyzed, I recommend the following improvements to the scenic resource impact assessment:

- Include a discussion or summary of the most visible turbines,
- Include photographs of existing energy projects visible in the NSA,
- Do not use visual simulations (at a small scale with clouds in the picture) to depict the visual impact of visible turbines,
- Make certain that the most visible viewpoints have been covered, especially with respect to the linear viewpoints, and
- Make certain to include the night-time effects in your analysis.

In order to prevent the scenic impact of the turbines visible from the Scenic Area Key Viewing Areas, I also recommend that the applicant eliminate turbine locations found to be visible from Scenic Area KVAs. I am hopeful that close attention to these impacts will result in a solution which will fit the unique area that this project will potentially benefit.

Sincerely,

/s/ Daniel T. Harkenrider

DANIEL T. HARKENRIDER
Area Manager

cc: Jill Arens
Columbia River Gorge Commission

COMMENT LETTER 301

WR - DEIS
Public Comment #475

Michelle, Kayce (UTC)

From: Wirt T. Maxey [redacted]
Sent: Thursday, August 26, 2010 5:06 PM
To: EFSEC (UTC)
Subject: Comments on Whistling Ridge Energy Project DEIS
Attachments: Title 22 memo.3.1.docm

Attach are comments on the Whistling Ridge DEIS. Please include in the record.

Thank You
Wirt T. Maxey

To: Washington State Energy Facility Site Evaluation Council; Bonneville Power Administration.

From: Wirt T. Maxey

Re: Comments about the Proposed Whistling Ridge Energy Project Draft Environmental Impact Statement

Date: July 15, 2010

THE PROPOSED WHISTLING RIDGE ENERGY PROJECT IS ILLEGAL UNDER TITLE 22 OF THE SKAMANIA COUNTY CODE

Background Facts:

Whistling Ridge Energy LLC is proposing a wind farm in an area of Skamania County which is located just outside the boundaries of the Columbia River Gorge National Scenic Area. (NSA) The proposed wind turbines are 430+/- feet tall and must be equipped with strobe lights at the top to satisfy FAA regulations. Cook Underwood Road is a designated "Key Viewing Area" within the NSA, located in Skamania County. Many, if not all, of the proposed turbines

and the strobe lights thereon will be highly visible from the Cook Underwood Road Key Viewing Area, as well as from numerous points throughout the NSA.

Issue: Is the proposed project legal under Title 22 of the Skamania County Code (Title 22)?

Summary: Although the National Scenic Area Act prohibits the creation of buffer zones[1], there are no provisions in The Act which prevent Skamania County, or any other governmental entity with jurisdiction, from protecting the NSA from scenic intrusions originating from outside the Scenic Area. For example, Oregon has recognized this principal. The Oregon EFSC provides that before issuing a site certificate the Council must determine by a preponderance of evidence that there will be no significant adverse impacts to the

[1] "SEC. 17 SAVINGS PROVISIONS.
(a) Nothing in sections 544 to 544P of this title shall-
(10) establish protective perimeters or buffer zones around the scenic area or each special management area. The fact that activities or uses inconsistent with the management directives for the scenic area or special management areas can be seen or heard from these areas shall not, of itself, preclude such activities or uses up to the boundaries of the scenic area or special management areas. 16 USC 544o (a)(10)."

scenic, aesthetic, recreational, and wildlife resources of the Columbia River Gorge. OAR 345-022-0000(1)(a).

Title 22 includes numerous provisions demonstrating that Skamania County, like Oregon, has protected the NSA Key Viewing Areas within Skamania County from scenic intrusions originating from both inside **and outside** the Scenic Area.

Conclusion: Title 22 protects the "Viewshed" of Cook Underwood Road, and requires that any development which can be seen from Cook Underwood Road be "Visually Subordinate" to its setting as seen from Cook Underwood Road. Because the proposed Whistling Ridge Energy Project cannot meet the test of visual subordination the project is illegal. The proposed project violates both the letter and the spirit of Title 22.

Analysis: This comment is directed to sections 3.8.2 (Applicable Land Use Regulations) of the DEIS. Section 3.8.2 of the DEIS briefly

mentions Title 22 and incorrectly assumes that, because the Whistling Ridge project is located outside the NSA boundaries, Title 22 is not applicable.

Section 22.02.050 of Title 22 provides, in pertinent part, that "This title applies to all lands in that portion of Skamania County lying within the Columbia River Gorge National Scenic Area...and to no other lands within the county..." The Cook Underwood Road Key Viewing Area lies within the National Scenic Area. Thus, Title 22 applies to the Cook Underwood Road Key Viewing Area.

"Viewshed" is defined in Section 22.04.010 as "a landscape unit seen from a key viewing area."[2]

"Development" is defined in Section 22.04.010 to mean "any land division or structure, including but not limited to new construction

[2] "Landscape Unit" is an undefined term and must therefore be given its' ordinary and common meaning, which would include any structure which is visible from a key viewing area.

of buildings and structures, and mining, dredging, filling, grading, paving and excavation."

Section 22.04.010(j) of Title 22 designates Cook Underwood Road as a "Key Viewing Area".

Section 22.18.030 entitled "ADDITIONAL STANDARDS GOVERNING NEW DEVELOPMENTS VISIBLE FROM KEY VIEWING AREAS" provides extensive standards for developments, such as the Whistling Ridge Energy Project, which are visible from key viewing areas. Section 22.18.030A provides that "The provisions in this section shall apply to proposed developments on sites topographically visible from key viewing areas". ***Thus, to the extent any of the turbines and/or their strobe lights are visible from Cook Underwood Road, (or any other key viewing area) the requirements of Section 22.18.030 must be met.***

In order to meet the requirements of Section 22.18.030B, the portion of the Whistling Ridge Project which is visible from Cook Underwood Road must be "visually subordinate to its setting as seen from" Cook Underwood Road. Visually Subordinate is defined in Section 22.04.010 as follows:

> "Visually Subordinate" means a description of the relative visibility of a structure or use where that structure or use does not noticeably contrast with the surrounding landscape, as viewed from a specified vantage point, generally a key viewing area. As opposed to structures that are fully screened, structures that are visually subordinate may be partially visible. They are not visually dominant in relation to their surroundings. Visually subordinate forest practices in the SMA shall repeat form, line, color, or texture common to the natural landscape, while changes in their qualities of size, amount, intensity, direction, pattern, etc., shall not dominate the natural landscape setting". (Emphasis added).

Clearly, the proposed wind turbines and their strobe lights which are visible from Cook Underwood Road can not pass the test of visual subordination.

Additionally, Section 22.18.030L of Title 22 provides that "Exterior lighting shall be directed downward and sided, hooded and

shielded such that it is not highly visible from key viewing areas". Section O. provides that "The silhouette of new buildings shall remain below the skyline of a bluff, cliff or ridge as seen from key viewing areas". Clearly, the proposed Whistling Ridge project cannot pass these tests.

The project's proponents are likely to point to the language in Section 22.02.050 of Title 22 stating that "This title applies to all lands in that portion of Skamania County lying within the Columbia River Gorge National Scenic Area...*and to no other lands within the county...*"and argue that, based on the italicized language, Title 22 is not applicable to the proposed project because it lies (in some cases approximately just 60+/- feet) outside the NSA. While it may be true that the project lies outside the NSA,[3] **it is undeniable that Cook Underwood Road does lie within of the NSA**. **It is also undeniable that some or all of the turbines and their strobe lights will be highly visible from Cook Underwood Road and**

[3] The proposed project is so close to the NSA, that an on the ground survey should be required to insure no encroachment.

therefore lie within the view shed of Cook Underwood Road. ***Application of Title 22 to the Cook Underwood Road "Key Viewing Area" results in the proposed project being illegal, because the proposed project would impact the Cook Underwood Road view shed in a manner that is prohibited by Title 22.***

Section 22.02.050 merely states that lands lying outside the NSA boundaries are not entitled to scenic protection and in no way whatsoever states or implies that Key Viewing Areas within the NSA are not protected from scenic intrusions originating outside the boundaries of the NSA.

The project's proponents may also point to section 22.02.120(A)(10) of Title 22 and argue that, since Title 22 does not create "buffer zones", Title 22 does not apply to the project. Section 22.02.120(A)(10) provides:

> A. Nothing in this Title shall:
> 10. Establish protective perimeters or buffer zones outside

of the Columbia River Gorge National Scenic Area.

"Buffer Zone" is a defined term in Title 22, therefore in order to interpret section 22.02.120(A)(10) it is necessary to consider and apply the statutory definition of "buffer zone". Section 22.04.010 (18) of Title 22 provides:

> 18. **BUFFER or BUFFER ZONE** means an area adjacent to a water resource or other sensitive area that is established and managed to protect sensitive natural resources ***from human disturbance.*** In instances that involve a wetland, stream or pond, the buffer zone includes all or a portion of the riparian area.(emphasis added)

Reading section 22.02.120(A)(10) in conjunction with the statutory definition of "buffer zone" makes it plain that the prohibition against buffer zones in no way detracts from the protection given to key viewing area viewsheds elsewhere in Title 22. ***Rather, it merely provides that nothing in Title 22 shall be interpreted to protect areas outside the NSA from "human disturbance".*** WRE is legally entitled to disturb the project areas outside the NSA however they wish (subject to Skamania County Zoning and Comprehensive Plan

limitations), so long as the project doesn't impinge on the protection granted Key Viewing areas elsewhere in Title 22.

If title 22 had been intended to limit the protection granted key viewing areas to intrusions originating from within the NSA, then the definitional and other sections referenced herein would have been so written and so limited and SCC 22.02.120(A)(10) would read something like; ... 'Establish protective perimeters or buffer zones outside the NSA, *or prohibit visual intrusions on key viewing areas which originate from outside the boundaries of the NSA.'* Alternatively, the definition of "buffer zone" would have been written differently to specifically negate the scenic protections granted key viewing area viewsheds elsewhere in Title 22.

Although the National Scenic Area Act prohibits the creation of buffer zones, there are no provisions in The Act which prevent Skamania County, or any other governmental entity with jurisdiction, from protecting the NSA from scenic intrusions originating from outside the Scenic Area. For example, Oregon has recognized this

principal. The Oregon EFSC provides that before issuing a site certificate the Council must determine by a preponderance of evidence that there will be no significant adverse impacts to the scenic, aesthetic, recreational, and wildlife resources of the Columbia River Gorge. OAR 345-022-0000(1)(a).

Title 22 includes numerous provisions demonstrating that this Ordinance protects the NSA Key Viewing Areas within Skamania County from scenic intrusions originating from both inside and outside the Scenic Area. Title 22 clearly asserts jurisdiction over visual impacts seen from Cook Underwood Road which originate from outside the NSA boundaries and clearly prohibits intrusions on the Cook Underwood Road view shed which originate from outside the NSA.

Viewshed is defined in Section 22.04.010 as "a landscape unit ***seen from*** a key viewing area". (emphasis added) This definition is

not limited to landscape units which originate from within the NSA boundaries.

Section 22.04.010 provides that "Development means ***any*** land division or ***structure,*** including but not limited to new construction of buildings and structures, and mining, dredging, filling, grading, paving and excavation."(emphasis added) Section 22.04.010 ***does not*** define development to mean "any land division or structure, including but not limited to new construction of buildings and structures, and mining, dredging, filling, grading, paving and excavation ***within the National Scenic Area Boundary***" *The definition or the term "development"* ***is not limited*** *to developments which are located within the NSA boundaries.*

Section 22.18.030A provides that "The provisions in this section shall apply to proposed developments on sites topographically visible from key viewing areas". Section 22.18.030A ***does not state "***...shall apply to proposed developments on sites ***within the National Scenic***

Area Boundary topographically visible from key viewing areas". *The protection afforded the Cook Underwood key viewing area view shed by Section 22.18.030,* ***is not limited*** *to protection form visual impacts of development located within the NSA boundaries.*

Section 22.18.030O. provides similar support for the conclusion that Title 22 protects the Cook Underwood Road key viewing area from scenic impacts originating from outside the NSA boundaries. Section O. provides that "The silhouette of new buildings shall remain below the ***skyline*** of a bluff, cliff or ridge as seen from key viewing areas".(emphasis added) This section ***does not state*** that "The silhouette of new buildings ***within the National Scenic Area Boundary*** shall remain below the skyline of a bluff, cliff or ridge as seen from key viewing areas".

"Skyline" is defined by Section 22.04.010 as follows: " Skyline means the line that represents the place at which a landform, such as a cliff, bluff of ridge, meets the sky, as viewed from a specified

vantage point, only a key viewing area... " Once again, this definition is ***not limited*** to skylines within the NSA.

As well, as a matter of fact, the only "skyline of a bluff, cliff or ridge" within Skamania County which can be seen from the Cook Underwood Road Key Viewing Area is from looking in a Northerly direction, towards the proposed project. Cook Underwood Road itself is located on the Underwood bluff and to the south the topography slopes downward to the Columbia River. Oregon lies on the other side of the river.

Pursuant to well established rules of statutory construction, if Title 22 had been intended to protect the view shed of the Cook Underwood Road Key Viewing Area (or any other key viewing area) only from visual impacts originating from within the boundaries of the NSA, the Ordinance would have specifically done so by including that limitation in the definitional sections discussed above. **Since no such limitations exists in Title 22, it is clear that the View Shed of**

Cook Underwood Road is protected by the express provisions of Title 22 from visual impacts originating from both within and outside of the NSA boundaries.

Title 22 includes numerous provisions demonstrating that Skamania County, like Oregon, has protected the NSA Key Viewing Areas within Skamania County from scenic intrusions originating from both inside and outside the Scenic Area.

THE PROPOSED WHISTLING RIDGE ENERGY PROJECT IS ILLEGAL UNDER TITLE 22, BECAUSE IT CANNOT PASS THE TEST OF VISUAL SUBORDINATION.

Respectfully Submitted

Wirt T. Maxey

COMMENT LETTER 302

WR - DEIS
Public Comment #476

Michelle, Kayce (UTC)

From: Jessica Walz [redacted]
Sent: Thursday, August 26, 2010 5:21 PM
To: EFSEC (UTC)
Subject: Comments on DEIS for Whistling Ridge Energy Facility
Attachments: Whistling Ridge Project DEIS Comments.doc

Please accept the attached comments on behalf of the Gifford Pinchot Task Force in regards to the Draft Environmental Impact Statement for the Whistling Ridge Energy Project. If you have any questions or concerns regarding the attached comments please call Jessica at [redacted] or by e-mail [redacted]

Thank you,

Jessica Walz

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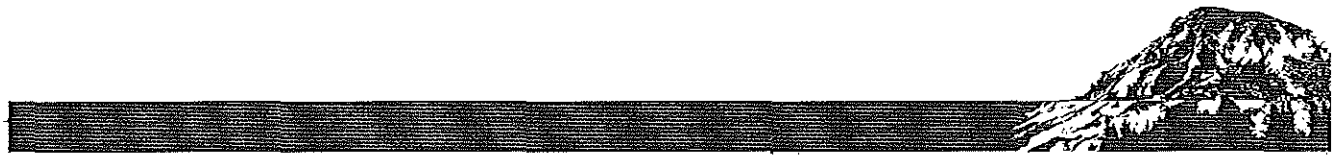
Jessica Walz
Conservation Program Director
Gifford Pinchot Task Force
[redacted]
~~~~~~~~~~~~~~~~



GIFFORD PINCHOT TASK FORCE

May, 18, 2009

Andrew M. MOntani
Environmental Protection Specialist
Bonneville Power Administration
P.O. Box 3621 KEC-4
905 NE 11th Avenue
Portland, Oregon 92708-3621

Stephen Posner,
Energy Facility Site Manager
Washington EFSEC
905 Plum Street SE
Third Floor
Olympia, WA 98504-3172

Re: **Whistling Ridge Energy Project, Draft Environmental Impact Statement**

Submitted VIA E-mail to efsec@commerce.wa.gov

Dear Responsible Official:

I am writing on behalf of the Gifford Pinchot Task Force (GP Task Force) to comment on the Draft Environmental Impact Statement (DEIS) for the Whistling Ridge Energy Project. The Task Force supports the biological diversity and communities of the Northwest through conservation and restoration of forests, rivers, fish, and wildlife. The GP Task Force is a non-profit organization with over 4,000 members in the Pacific Northwest. One of our primary campaigns focuses on protection and restoration of public lands and the preservation of critical habitat for endangered and threatened wildlife. Although we are supportive of finding alternative

ways of producing energy, we are concerned by the clearing of the forest landscape necessary for this project as well as the potential for interference with bird and wildlife migration, nesting, and foraging. Thank you for the opportunity to comment on the plan.

The project is likely to cause significant adverse impacts to the natural resources of the area because of the considerable forest land clearing that must be undertaken for the 50 + wind turbines that will be sited in this location. Some of the effects include direct impacts to wildlife habitat, wildlife displacement, avian death, fragmentation of wildlife migration corridors, and severe edge effects to intact interior forest habitat.

Clearing traditionally forested land close to an intact forest boundary (i.e the Gifford Pinchot National Forest (GPNF)) can create severe edge effects including increased disease incursion on the edge environments, noxious weed invasion, significant changes in microclimates, increase risk of fire, and increase nest predation for birds nesting in traditionally interior habitat. The most glaring failure of this DEIS is the lack of adequate data on potential effects this land clearing will have on barred owl and spotted owl competition. This project will clear forest land near historic activity centers for spotted owl and within the White Salmon spotted owl special emphasis areas (SOSEA). Although the DEIS discusses these areas and claims that destruction of the forested landscape will have little if any effect on spotted owl (DEIS, Page 3-49 - 3-56) it does not discuss or analyze the effects this large clearing can have on increased competition on spotted owl habitat on the edges of this cleared land.

Barred owls are known to be a more dominant species and can easily force spotted owl to move from nesting sites. Barred owls are more adept at using edge forests and second growth forest and will aggressive defend territories. By forcing barred owl into other locations through loss of their current foothold habitats in this area and creating environments more suitable for barred owl encroachment will create unsuitable spotted owl habitat and force spotted owls out of current occupied territory. By failing to analyze this effect of loss of forest habitat the DEIS fails to properly assess the true effects of this project on spotted owl.

The DEIS also fails to properly assess this area for wildlife migration corridors. While the DEIS does specifically look at some species of concerns like the western gray squirrel and indicates that other wildlife were present in the area (DEIS, Page 3-69) it fails to properly assess the loss of this habitat or any potential use as migration corridor from the Gorge to the Gifford Pinchot National Forest. Clearing these areas will significantly affect use of the area by large mammals like bear and cougar as migration routes and will significantly alter use by deer and elk especially if forge is not available for the ungulate species. The private forest lands along the edge of the GPNF are important as migration travel ways from the gorge to the forests. These areas have traditionally been frequented by the large elk herds of south Mount St. Helens, deer, and a variety of predators including black bears and cougar. Clearing these forest lands is forcing more of these animals into dangerous urban areas to meet their migratory needs. The DEIS fails to properly assess direct and indirect impacts to wildlife because it neglects to analyze an important need of many predator and herd species: migration corridors.

Birds suffer direct impacts from wind turbines. Establishing a wind turbine facility in an important migratory passageway such as the Gorge could significantly increase the risk to the population. The DEIS does measure the risk to Bald and Golden Eagles as relatively low (DEIS, 3-77) however wind facilities have notoriously killed more birds then predicted in their DEIS. Siting turbines in canyons and on ridgelines increases the risk of fatalities for migrating birds. Studies done in Montana and California have found greater increases in bird fatalities along migratory passways when siting occurred at low and high points. (Harmata et. al (2000), Smallwood and Thelander (2005), and Thayer (2007)). The siting of turbines in the locations as planned are likely to have a higher impact then what is estimated in the DEIS.

One of the most prolific threats to our national forest is the change in use of forested acreage surrounding national forest lands. The clearing of the land so near one of our national forest for a wind project only increases this threat. Significant impacts can result from the loss of forest habitat including: direct impacts to wildlife, sediment in streams due to increase in roads, as well as climate change effects. The Gifford Pinchot National Forest is the 4th largest carbon storage forest in the country and the loss of its surrounding forested habitat puts this valuable forest at risk of increased fires, microclimate changes, soil decimation, and many other threats.

The DEIS fails to look at the direct and indirect impacts this wind project can and will have on the surrounding forest environments including on the GPNF.

We applaud the DEIS for incorporating an extensive section on visual impacts, however one of the major flaws of the DEIS is a failure to include much analysis of the visual impacts from hiking trails or viewpoints from within the Gifford Pinchot National Forest. The Gifford Pinchot National Forest is used extensively throughout the year as a destination for hikers, bikers, mount climbers, cross country skiers and other outdoor enthusiasts. One of the main draws is its views including views of Mount Hood from across the Gorge, the Gorge itself, as well as areas surrounding the GPNF. One of the potential impacts to the view shed is looking toward the northeast to Mount Adams and to the southeast to Mount Hood. We would like additional visual analysis done from areas on the GPNF which include visual simulations of the views from that area to be included in the Final Environmental Impact Statement.

Roads also have a tremendous impact on the environment. Roads wash sediment into streams, they fragment habitat, and they can fail causing more damage to stream environments. Very little to no analysis is given to the environment affects of increasing the road mileage on the area (DEIS, Page 3-226-3-227). The Final Environmental Impact Statement should include the analysis of sediment from gravel as well as paved road leaching into streams.

Thank you for the opportunity to comment on the DEIS for the Whistling Ridge Project. If you have any questions or concerns please do not hesitate to contact me at [redacted].

[redacted]

Thank You,

Jessica Walz

Jessica Walz
Conservation Director
Gifford Pinchot Task Force

Michelle, Kayce (UTC)

From: [redacted]
Sent: Thursday, August 26, 2010 5:39 PM
To: EFSEC (UTC)
Subject: I support Whistling Ridge

Hello Energy Facility Site Evaluation Council,

I would like to voice my strong support for the Whistling Ridge Energy Project. This wind farm will give the Skamania County economy the boost it needs. We are too dependent on timber harvests and federal timber payments. Too many residents are stuck in low-income brackets while unemployment ranks far above the state average. Fortunately, Skamania has another natural resource to develop: wind. Bringing another industry here is exactly what our county needs. It will stimulate local spending, create jobs, and provide new tax revenues. How can that be a bad thing? Skamania County needs to diversify its resources and revenue, and Whistling Ridge can make that happen. I hope the Council approves the SDS application and that the project advances quickly.

Sincerely,
Jim & Keenan Webber
[redacted]

COMMENT LETTER 304

WR - DEIS
Public Comment #479

Michelle, Kayce (UTC)

From: [redacted]
Sent: Thursday, August 26, 2010 5:49 PM
To: EFSEC (UTC)
Subject: SDS wind turbines in the Columbia River Gorge

Please don't allow SDS to put the wind turbines in the natural beauty of the Columbia River Gorge. We have been working with visitors to the Gorge for 27 years at Lost Lake, Mt. Hood National Forest and they come from all over the world to see the Gorge. Please consider how poorly it will effect our wildlife and views. Please PLEASE don't allow it. Thank You, Roy & Barbara Hillmick

COMMENT LETTER 305

WR - DEIS
Public Comment #481

Michelle, Kayce (UTC)

From: Heidi Venture [redacted]
Sent: Thursday, August 26, 2010 5:57 PM
To: EFSEC (UTC)
Subject: Letter from a Columbia Gorge Wildflower Lover

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

The area where this project would be built is home to many species of wildflowers, birds and mammals. There can be no doubt that they will be adversely affected by the destruction of habitat that wind turbines require. The Columbia Gorge Region is home to over 700 species of wildflowers, many of which grow only here.

I'm also concerned about birds. The nearby wind project in Klickitat County is killing hundreds of birds and bats every year. And it isn't even an area where there are lots of birds. The ridge top project could very well be even more destructive to birds.

Lastly, the Columbia Gorge Scenic area includes the skyline, at least the quality of the scenic area does. This project will have a horrible impact on the scenic beauty of this area. There is no place like it in our country. It's worth protecting.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Heidi Venture
[redacted]

COMMENT LETTER 306

WR - DEIS
Public Comment #483

Michelle, Kayce (UTC)

From: [redacted]
Sent: Thursday, August 26, 2010 7:05 PM
To: EFSEC (UTC)
Subject: I support Whistling Ridge

Hello Energy Facility Site Evaluation Council,

The Whistling Ridge Energy Project helps the state utilities reach the goals set by Initiative 937. It on industrial timber lands and the project plans are compatible with the State Forest Practices Act and County Planning Regulations. This is a west side wind project which is the most feasible and most cost-effective option for bringing 15% new renewable energy on the grid by 2020. SDS Lumber has developed a good plan for join us of its timber lands to generate clear energy. This is a unique match that helps stabilize a major employer from cyclical financial cycles of the lumber market. The are has been used as an industrial timber lands for over 100 years. Environmental studies show that the impacts are minimal.

I urge you to approve the EFSEC Certificate for this project.

Sincerely,
David McClain
[redacted]

COMMENT LETTER 307

WR - DEIS
Public Comment #484

Michelle, Kayce (UTC)

From: Don Stephens [redacted]
Sent: Thursday, August 26, 2010 8:00 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

I spend many spring, summer and fall evenings in White Salmon near Pucker Huddle Road viewing sunsets over Underwood Mountain. I strongly oppose use of this site for wind energy production. It does not belong here in the most scenic area of the Gorge.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

The DEIS has other flaws. The DEIS fails to adequately analyze the potential cumulative impacts of this project when considered with other existing and likely future wind energy projects and other development projects in the region. The photo simulations in the DEIS are inadequate and misleading. Some of them have cloudy backgrounds, thus not adequately representing the full extent of the impacts, and other simulations are out scale. Additional viewpoints need to be considered, including views from the Historic Columbia River Highway. The DEIS erroneously concludes that the scenic impacts would not be significant, even though most of the turbines would be visible from designated key viewing areas within the National Scenic Area. In addition, the BPA and EFSEC have not adequately consulted with the Yakama Nation to ensure the protection of cultural resources.

Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Don Stephens
[redacted]

COMMENT LETTER 308

WR - DEIS
Public Comment #488

Michelle, Kayce (UTC)

From: Ellynne Kutschera [redacted]
Sent: Thursday, August 26, 2010 10:21 PM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing about the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

I am concerned because this project appears to have questionable use while impacting wildlife and the Gorge area in a significantly negative way. The Columbia River Gorge National Scenic Area still needs to be preserved in as high a quality state as possible, not only because it is a treasure but because in-tact ecosystems are of increasing value in the face of ever continuing development.

I sincerely hope alternatives will be seriously considered, and am supporting the following concerns:

The DEIS has other flaws. The DEIS fails to adequately analyze the potential cumulative impacts of this project when considered with other existing and likely future wind energy projects and other development projects in the region. The photo simulations in the DEIS are inadequate and misleading. Some of them have cloudy backgrounds, thus not adequately representing the full extent of the impacts, and other simulations are out scale. Additional viewpoints need to be considered, including views from the Historic Columbia River Highway. The DEIS erroneously concludes that the scenic impacts would not be significant, even though most of the turbines would be visible from designated key viewing areas within the National Scenic Area. In addition, the BPA and EFSEC have not adequately consulted with the Yakama Nation to ensure the protection of cultural resources.

Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Ellynne Kutschera
[redacted]

COMMENT LETTER 309

WR - DEIS
Public Comment #493

Michelle, Kayce (UTC)

From: Paul Metzger [redacted]
Sent: Friday, August 27, 2010 6:12 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am a strong supporter of solar and wind energy development, but I am also a strong supporter of preserving our natural heritage. The Columbia River Gorge is a scenic treasure ever bit as important to preserve and protect as the Grand Canyon, or Yellowstone Park, or Niagara Falls.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

The DEIS has other flaws. The DEIS fails to adequately analyze the potential cumulative impacts of this project when considered with other existing and likely future wind energy projects and other development projects in the region. The photo simulations in the DEIS are inadequate and misleading. Some of them have cloudy backgrounds, thus not adequately representing the full extent of the impacts, and other simulations are out scale. Additional viewpoints need to be considered, including views from the Historic Columbia River Highway. The DEIS erroneously concludes that the scenic impacts would not be significant, even though most of the turbines would be visible from designated key viewing areas within the National Scenic Area. In addition, the BPA and EFSEC have not adequately consulted with the Yakama Nation to ensure the protection of cultural resources.

Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Paul Metzger
[redacted]

[redacted]

Michelle, Kayce (UTC)

From: Paul Metzger [redacted]
Sent: Friday, August 27, 2010 6:12 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am writing to comment on the DEIS for the Whistling Ridge Energy Project, proposed in the Underwood, WA area, near the Skamania and Klickitat county lines.

This proposal is likely to have different and greater wildlife impacts than any other wind energy facility proposed in the State of Washington, because it is proposed along a forested ridgeline in the foothills of the Cascade Mountains and on the boundary of the Columbia River Gorge National Scenic Area. The proposed project would cause significant negative impacts to sensitive wildlife and plant habitat, and would degrade the outstanding scenic beauty of the Lewis and Clark National Historic Trail and Columbia River Gorge National Scenic Area.

I am a strong supporter of solar and wind energy development, but I am also a strong supporter of preserving our natural heritage. The Columbia River Gorge is a scenic treasure ever bit as important to preserve and protect as the Grand Canyon, or Yellowstone Park, or Niagara Falls.

I am concerned that the DEIS is fundamentally flawed because it fails to provide a credible alternatives analysis. EFSEC and BPA need to consider other alternatives, including other means of providing electricity (including increasing efficiency and reducing consumption), other sites for wind energy, other configurations, deleting turbines to reduce impacts, alternative routes for hauling turbines to avoid traffic impacts to the National Scenic Area, etc. Only two alternatives are meaningfully considered in the DEIS (the proposal and the no-action alternative). This is inadequate.

The DEIS has other flaws. The DEIS fails to adequately analyze the potential cumulative impacts of this project when considered with other existing and likely future wind energy projects and other development projects in the region. The photo simulations in the DEIS are inadequate and misleading. Some of them have cloudy backgrounds, thus not adequately representing the full extent of the impacts, and other simulations are out scale. Additional viewpoints need to be considered, including views from the Historic Columbia River Highway. The DEIS erroneously concludes that the scenic impacts would not be significant, even though most of the turbines would be visible from designated key viewing areas within the National Scenic Area. In addition, the BPA and EFSEC have not adequately consulted with the Yakama Nation to ensure the protection of cultural resources.

Lastly, EFSEC and BPA need to fix the flaws in the DEIS, issue a revised or supplemental DEIS, and make substantial revisions to the EIS to fully inform the public about the true environmental impacts of the project. If another DEIS is issued the 50-turbine layout should be rejected.

Thank you for extending the public comment period and allowing me to submit these comments into the record.

Paul Metzger
[redacted]

[redacted]

COMMENT LETTER 310

WR - DEIS
Public Comment #495

Michelle, Kayce (UTC)

From: Alison Bryan [redacted]
Sent: Friday, August 27, 2010 7:55 AM
To: EFSEC (UTC)
Subject: Whistling Ridge

To those charged with making a decision on the proposed Wind turbine project on Whistling Ridge:

We support wind energy projects,

however:

Not near houses
Not where they are visible to the National Scenic area.
Not in the middle of a forest where animals become endangered.

Perhaps the Broughton Lumber Company would be able to trade the proposed site for one further removed from houses and the Gorge.

Alison and John Bryan
[redacted]

COMMENT LETTER 311

WR - DEIS
Public Comment #497

Michelle, Kayce (UTC)

From: repar [r[redacted]
Sent: Friday, August 27, 2010 9:06 AM
To: EFSEC (UTC)
Subject: Comments-Whistling Ridge--Repar-1
Attachments: Comments_DEIS_BPA_Inadequate_27Aug2010.doc; BPA_Wind_Power_Efforts_March_2010.pdf; BalancingArea.pdf

Importance: High

Dear EFSEC,
Attached, please find one of my comment memos and attachments on the Whistling Ridge wind farm proposal. Thank you.

Mary J. Repar

[redacted]

Mary J. Repar
[redacted]

27 August 2010

EFSEC
905 Plum Street SE
Olympia, WA 98504-3172
e-mail: efsec@commerce.wa.gov

BPA
Public Affairs Office – DKE -7
P.O. Box 14428
Portland, OR 97293-4428
Toll-free comment line: 800.622.4519
FAX: 503.230.3285
503. 230. 4145
www.bpa.gov/comment

Re: Comments on the Whistling Ridge DEIS--BPA's inadequate input on areas that should be covered by the DEIS--such as cumulative impacts on ecosystems, fish and other wildlife; transmission lines; land use issues; etc.

Dear EFSEC and BPA,

In this process of evaluating the Draft Environmental Impact Statement for the Whistling Ridge wind farm proposed project, the Bonneville Power Administration (BPA) has been a strangely absent co-proponent. SDS has been front and center as a strong proponent of this wind farm proposal, the first-ever that might be situated in the middle of the Northwest forest. But, BPA and their technical expertise and knowledge do not appear to be adequately presented in this DEIS. Why not? BPA is a Federal agency and they are subject to all the rules and regulations of the National Environmental Policy Act but in this DEIS their input is strangely silent and non-existent, especially in some very critical areas that require in-depth analysis and discussion. The public should be able to address all aspects of this proposal.

For example, BPA seems to be proposing a lot of different transmission projects throughout WA and other states; one such project is their I-5 Corridor Reinforcement Project. [**I-5 Corridor Reinforcement Project EIS (DOE/EIS-0436)**[1]

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[1] **The I-5 Corridor Reinforcement Project Environmental Impact Statement will evaluate the environmental impacts of BPA's proposed 500-kilovolt transmission line and substations.**

What is the scope of the analysis in the Draft EIS?

The EIS will evaluate environmental impacts potentially created from the construction, operation and maintenance of a new 500-kV transmission line and substations. See Where the I-5 Corridor Reinforcement Project Could be Located for EIS project area maps. In the EIS, BPA will identify environmental impacts

that could be created by the project. The EIS will also propose mitigation measures that could avoid or reduce potential impacts. Impacts and any mitigation measures that would avoid or reduce impacts would be analyzed for each environmental resource. All components of the project would be addressed, including the following:

- Towers,
- Conductors,
- Counterpoise,
- Fiber Optic Cable,
- Right-of-Way Clearing,
- Access Roads,
- Staging Areas,
- Gates,
- Substation Facilities

Specifically, the Draft EIS will include the following chapters:

- Summary
- Purpose and Need for Action
- Alternatives
- Affected Environment
- Environmental Consequences
- Consultation, Permit and Review Requirements
- EIS Preparers
- List of Agencies, Organizations and Persons Sent the EIS
- References
- Glossary and Acronyms
- Index

What alternatives will be analyzed in the I-5 Corridor Reinforcement Project EIS?

Alternatives that will be considered in the EIS include the following:

- Action alternatives that propose building a new transmission line on specific routes and building substations at specific locations. The number of action alternatives will be determined after the scoping process is complete and public comments and additional technical studies are analyzed; and
- A **No Action alternative** that will analyze the impacts of not building a new transmission line and substations.

What impacts and issues will be addressed in the I-5 Corridor Reinforcement Project EIS?

BPA is asking for comments on the proposal and suggestions about topics to consider in the EIS. Typical issues that BPA has considered on similar projects are listed below. Each project is unique and BPA wants to know if you are aware of issues in the project area that are not on this preliminary list.

The EIS will evaluate direct, indirect and cumulative impacts to:

- Land Use
- Cultural Resources
- Aesthetics

http://www.bpa.gov/corporate/i-5-eis/what-included.cfm] These projects do not appear to be connected through one, all-encompassing DEIS that would address the cumulative impacts and effects of BPA's past, present, and future building of bigger and bigger transmission lines throughout our region. I'm not sure whether BPA thinks that none of us will notice and not connect the transmission lines! But I noticed and I'm sure a lot of other people have, too.

Cumulative impacts and effects analyses, under NEPA, are not done on a project by project basis. They are done on a regional and/or geographical area. BPA is the regional energy producer for WA, OR, ID and parts of Montana. ***See attached PDF file BPA_Wind_Power_Efforts_March_2010.pdf.*** BPA has not adequately addressed the impacts of all their regional transmission projects that are allegedly supposed to carry all the energy that is or will be produced by beau coup wind farms in WA, OR, and other parts of the West, and also by the proposed Whistling Ridge wind farm project. ***See attached PDF file BalancingArea.pdf.***

BPA needs bigger and bigger transmission lines because they have to do something to integrate and balance all the wind energy that is being produced. They do not have adequate transmission capability for all of these wind farms. The question one may ask then is: Why are so many wind farms being subsidized into existence so that BPA has to build 200 foot tall new transmission lines all over the West?? Isn't there a better way? Can't we do more to conserve energy, use more efficiencies in existing technologies in order to save and conserve energy so that we won't have to build more, and more transmission lines, more backup gas plants to balance wind energy inefficiency, and wind farms in our rural areas? Are our rural areas being used up, being subjected to environmental injustices, being degraded through their industrialization—just to supply more and more energy to metropolitan urban areas, areas that cannot seem to get enough energy?? If we produce it, they will suck it up. It is time to turn off the energy tap from the NW. Let us all learn to live within our energy means.

In reading the Whistling Ridge DEIS, I couldn't help but notice BPA's absence throughout the document. After some research, I came across BPA's I-5 Corridor Reinforcement Project DEIS **(DOE/EIS-0436). See footnote 1 for full text.** What quickly became obvious to me, after reading about this I-5 project to build a 500-kilovot transmission line and substations, was that the Whistling Ridge DEIS didn't have any of

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- Sensitive Plants and Animals and their Habitats
- Fish and Water Resources
- Erosion and Soils
- Socioeconomics and Public Services
- Electric and Magnetic Fields
- Noise
- Public Health and Safety
- Air Quality
- Recreation
- Environmental Justice

the information, as far as I was able to (not) find, about the existing transmission lines that would be used by the wind farm project and whether new ones would be proposed at some future date, the substation that is being proposed and what effects it would have on the environment, etc. The I-5 EIS "will evaluate environmental impacts potentially created from the construction, operation and maintenance of a new 500-kV transmission line and substations." Why aren't the BPA transmission lines that Whistling Ridge would use not evaluated in the Whistling Ridge DEIS? The I-5 EIS continues, "All components of the project would be addressed, including the following:

- Towers,
- Conductors,
- Counterpoise,
- Fiber Optic Cable,
- Right-of-Way Clearing,
- Access Roads,
- Staging Areas,
- Gates,
- Substation Facilities."

I don't even know what counterpoise is but I sure would like to know its meaning! What are staging areas? Why aren't all these "components" addressed by BPA in the Whistling Ridge DEIS? Cumulative impacts are measured in the past, present, and future and BPA has built transmission lines in the past, present, and will in the future. Cumulative impacts have to be done on a regional basis, not on a project basis. Why hasn't BPA done cumulative impacts analyses for their transmission lines and substations? For their towers and conductors? For their access roads? For their staging areas? Gates? Substation facilities? So many questions, so few answers.

In the I-5 BPA proposal, the following talks about "No Action Alternative": "A **No Action alternative** that will analyze the impacts of not building a new transmission line and substations." So, why doesn't the Whistling Ridge DEIS have a BPA analysis about the impacts of not building any new transmission lines, or using the old transmission line, or substations? Why isn't the "No Action Alternative" addressed more fully and thoughtfully in the DEIS? SDS Lumber, the co-proponent, made a lackadaisical effort to address the "No Action Alternative" (probably because they don't want one!) but I sensed that their heart wasn't in it. However, BPA is a Federal agency and we all know that they have no heart, so I do expect them to whole-heartedly address, in excruciating technical detail, what the impacts of a "No Action Alternative" would be.

Further, the I-5 EIS goes on to say that it "...will evaluate direct, indirect and cumulative impacts to:

- Land Use
- Cultural Resources
- Aesthetics
- Sensitive Plants and Animals and their Habitats

- Fish and Water Resources
- Erosion and Soils
- Socioeconomics and Public Services
- Electric and Magnetic Fields
- Noise
- Public Health and Safety
- Air Quality
- Recreation
- Environmental Justice."

From the Whistling Ridge DEIS, it is very apparent that BPA did not address any of these issues as they pertain to transmission lines and substations, technology that BPA should know something about! They should. Their own BalancingArea.pdf (see attachment), states the following impacts to fish:

"BPA's Balancing Area: Balancing Fish, Water, and Wind

Potential cumulative impacts to fish and other aquatic resources from past, present, and future development in the region include the **loss of riparian habitat**, increased sediment loading, **increased stream temperatures**, pollution from herbicide and insecticide use, changes in peak and low stream flows, **fragmentation of fish habitat**, decreases in stream bank stability, and altered nutrient supply. Since wind projects in the region are typically located in upland areas and generally well away from fish habitat, these projects are not expected to have a significant contribution to direct cumulative impacts to fish species.

However, the interconnection of existing and proposed wind-powered generation projects in the region to the BPA transmission system does poses the potential for cumulative impacts to listed Columbia River fish species through a somewhat complex relationship among the wind projects, general Columbia River hydrosystem operations (see map below), and operation of the hydrosystem to meet Clean Water Act (CWA) and Endangered Species Act (ESA) requirements for listed fish species." [my bold emphasis]

So, there is a cumulative impacts issue for fish. This is not adequately addressed in the Whistling Ridge DEIS, and it is apparent from this document that BPA has knowledge about the issue and could have addressed it in the DEIS. SDS is not the lone proponent on this wind farm project and cumulative impacts are not done on a single project basis. ALL of BPA's regional infrastructure has cumulative impacts on fish and it should be part and parcel of this wind farm DEIS.

Other areas not addressed in the Whistling Ridge DEIS are electric and magnetic fields from transmission lines. Why didn't BPA address this issue in the DEIS? Are there health effects for humans and wildlife from transmission lines? If bigger and taller transmission lines are built are there bigger electric and magnetic fields? Can transmission lines cause forest fires? What are the environmental impacts of

transmission lines? Habitat fragmentation? How much pesticide is used on an annual basis to keep the transmission area free of vegetation and pests? What are the environmental effects of this pesticide use? Etc., etc., etc.

I've got a lot of questions about BPA's portion of this DEIS and my questions have not been adequately addressed or answered.

All of the above direct and indirect cumulative impacts should have been addressed by BPA in the Whistling Ridge DEIS, especially as they pertain to the technical aspects of regional energy production. And, BPA is a regional energy producer.

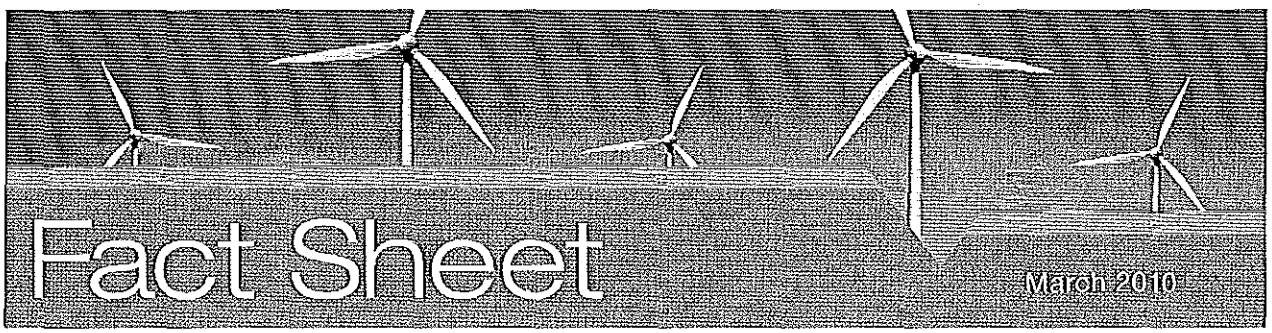
BPA has not, as they are obligated to do through Federal regulations, actively participated in this NEPA process for the Whistling Ridge wind farm proposal. The DEIS is fatally flawed and incomplete because of their lack of technical input about the cumulative impacts and effects of this project on our environment and ecosystems. BPA needs to be an active participant in this process and so far they have totally abrogated their regulatory obligations under NEPA. The Whistling Ridge wind farm DEIS is incomplete and should be redone with BPA's input.

Thank you.

Sincerely,

/e-signature/Mary J. Repar
27 August 2010

BONNEVILLE POWER ADMINISTRATION



BPA's wind power efforts surge forward

As the nation seeks new sources of clean electricity, wind has emerged as the most mature and promising new resource. It is free of CO_2 emissions, relatively cost effective compared to other new generating resources and is, thus far, the most viable non-hydro renewable resource available on a large scale. Its assimilation into the U.S. and Pacific Northwest generation resource base is advancing rapidly, thanks to concerted efforts to meet and overcome challenges to dealing with wind's variability.

Others, primarily independent companies, are developing wind resources. The Bonneville Power Administration's major role is to provide the reliable transmission that delivers electricity from wind farms, often located in remote areas, to the region's communities. Bringing a variable and difficult to predict energy resource, such as wind, onto the power grid in large amounts is one of the great engineering and economic challenges in the power industry today. BPA is maintaining a remarkable pace of connecting wind power onto its transmission system and has among the highest levels of wind power in its transmission system compared to load of any grid balancing authority in the country.

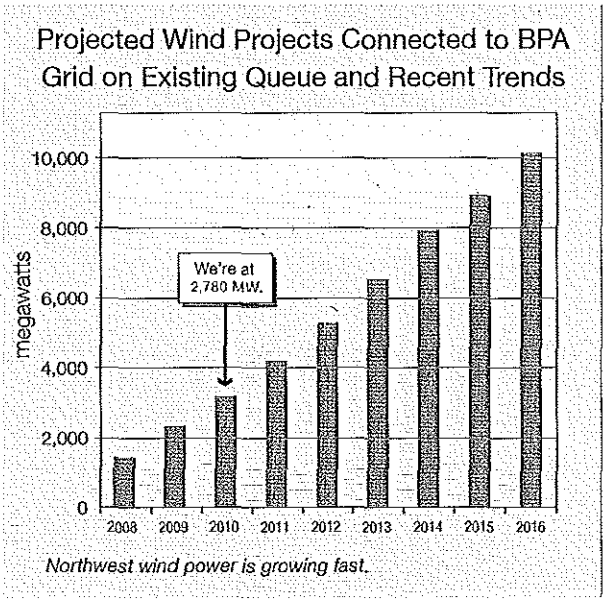
Growth rate fuels progress

All but one of the states in BPA's service territory have enacted renewable electric generation standards for their retail utilities. These requirements, coupled with those of other Western states, have set off a "gold rush" of wind developers to the region.

The growth rate of wind interconnections is astounding. In 2009 alone, the amount of wind power integrated into BPA's transmission system went from 1,500 megawatts to more than 2,500 megawatts. It is now above 2,700 megawatts. In the next two years, BPA expects a near doubling of wind on its system. By 2013, BPA may have more than 6,000 MW of wind power on its system.

As wind power continues to grow, the energy industry faces dramatic change. This is an exciting time for the industry, and BPA is helping lead the nation into a new age of renewable power.

BPA and the region's wind community have been working aggressively to adapt to wind power's rapid growth. In 2009, the agency released an accelerated



Northwest wind power is growing fast.

18-month work plan for wind integration activities. BPA's Wind Integration Team is tackling five projects to better manage large amounts of wind power in BPA's balancing authority area. All of these projects, summarized below, are on or ahead of schedule.

Making it work

Given the challenges, how can 6,000 megawatts of wind, and perhaps more ultimately, successfully operate in a balancing area with just under 11,000 megawatts of peak load? BPA is focusing its efforts in four areas to make it work.

- Building transmission to support wind integration.
- Using existing transmission capacity in new ways.
- Exploring new sources of generation capacity reserves.
- Developing partnerships with other utilities and the wind power community.

Building transmission to support wind integration

The region needs new transmission to meet growing demand for energy, particularly renewable energy. Because BPA owns and operates three-quarters of the region's high-voltage transmission, the agency plays a vital role in facilitating the development of renewable energy. Simply put, wind and other resources will not be developed unless transmission is available to get those resources to market. This is particularly challenging because, on average, wind projects in the BPA service territory only operate at about 30 percent of their capacity.

To determine transmission needed to support additional wind generation, as well as to shore up reliability, BPA initiated a new process called Network Open Season in 2008 to better manage the queue of customers seeking BPA's transmission services. Previously, many potential developers had sought to reserve transmission for plants still in the planning stage or plants that might never be built. The result was a long and unmanageable queue. Under Network Open Season, BPA offers firm network transmission service to customers who request it, but the customers must make a financial commitment for that service. This winnows out the speculative requests for transmission.

In 2009, BPA confirmed financial commitments for 6,410 megawatts of transmission service requests. Three-quarters of the requested service capacity were for wind generation.

BPA was able to accommodate more than 20 percent of the requests with existing capacity. It was also able to offer a new "conditional firm service" to provide still more transmission service from existing capacity of the system. Conditional firm allows some curtailment of service under certain conditions. This allowed BPA to make the most efficient use of its existing system before proposing new construction.

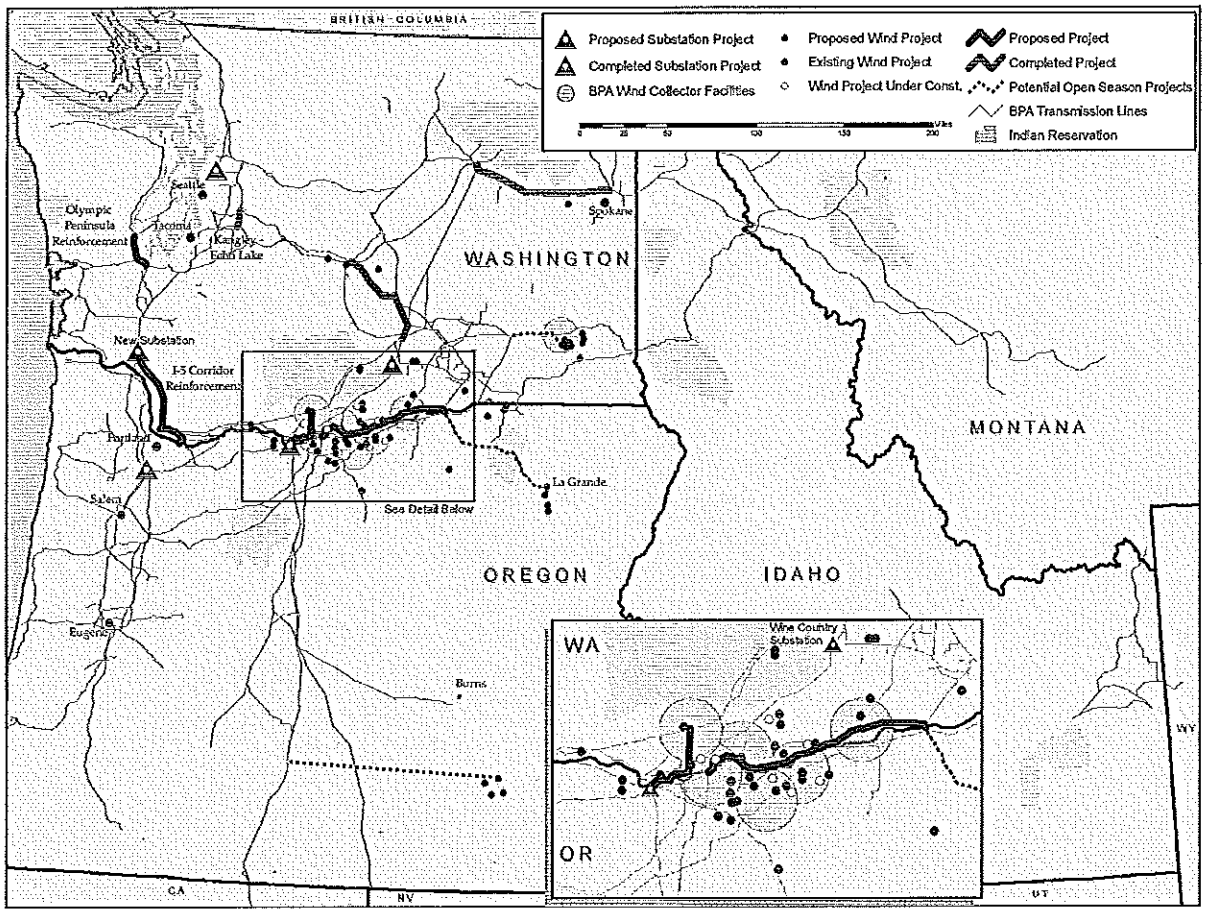
Network Open Season did show, however, that BPA needs to move forward with four new transmission projects. Together, these projects would bring 1,800 megawatts of new wind generation to the region. BPA is ahead of schedule on the construction of the first project and is conducting environmental work on the others. The feasibility of these projects was enhanced by access to increased borrowing authority granted BPA under the American Recovery and Reinvestment Act. BPA will pay this money back with interest to U.S. taxpayers, but the expanded borrowing authority provides increased capital for critical projects. BPA is completing its second Network Open Season and plans to conduct the process annually.

> BPA wind initiatives are stretching the capability of the existing system.

Changing grid management for wind power integration

BPA's Wind Integration Team is developing new processes and systems to wring as much efficiency as possible out of existing transmission and generating reserve assets. Basically, BPA is stretching the capability of the existing system through efficiencies from operational improvements. If these initiatives succeed and are implemented over the long term,

Completed and Proposed BPA Transmission Line & Wind Projects



Most of the wind power in the Northwest is clustering in the heart of BPA's grid.

they could make a significant dent in the amount of balancing reserves needed to support a tripling of the wind generation interconnected to BPA's system.

New protocols manage extreme wind ramps

BPA has seen unscheduled wind generation swings of more than 1,000 megawatts in less than an hour on its system. New operating protocols introduced in 2009 help manage sudden fluctuations in wind generation. When wind picks up and unscheduled generation threatens to deplete BPA's balancing reserves, BPA dispatch now automatically sends an electronic signal to wind plants to reduce their generation to scheduled levels. So far, BPA dispatchers have applied the protocols several times a month. Likewise, when large decreases in scheduled wind generation deplete BPA's ability to provide balancing energy, BPA revises the wind schedules downward, and receiving utilities must make up the difference with their own resources.

Shorter scheduling intervals

Historically, utilities schedule power deliveries by the hour. As a pilot project, BPA is allowing within-hour changes to power schedules for wind projects that are exceeding their hourly schedule. Intra-hour scheduling can help wind generators avoid curtailment of excess generation and could make it possible for them to sell excess power that otherwise might be limited. This has the potential to help reduce reserve requirements and generation imbalance charges. BPA is evaluating possible expansion of this project.

The challenge

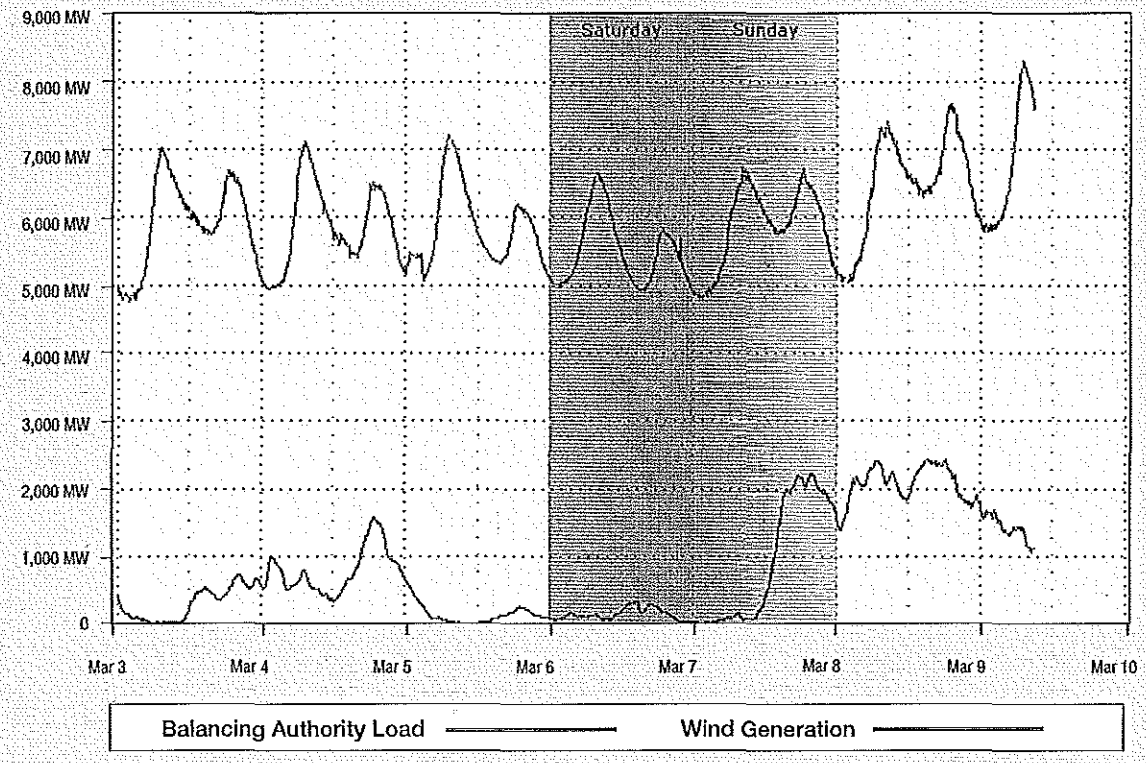
Wind is a variable power resource that is hard to predict. That's a challenge because, unless generation matches demand second by second, the transmission system will destabilize. If the system becomes unbalanced, blackouts can result. Think of it in terms of a computer. We use surge protectors to prevent a sudden increase in electricity. Some sensitive electronic equipment also incorporates voltage sag protectors. Without these protections, equipment can suffer the equivalent of a "black out."

To maintain system balance in the high-voltage grid, utilities use balancing reserves, or generation held available to manage fluctuations between power load and power generation. In the Northwest, the hydro system has historically provided all the balancing reserves we need, because hydro generation can be increased or decreased quickly. But the hydro system has limits. To support continued large-scale wind power growth, we are learning to operate the existing system in new ways.

As with most coastal climates, Northwest winds are not steady. They tend to ramp up or down quickly and often unexpectedly. System operators are inventing new techniques to maintain the constant balance needed between power loads and generation levels. Some solutions already have been put in practice; others are on the way.

BPA Balancing Authority Load & Total Wind Generation

March 3–10, 2010



BPA now operates the hydro system to respond to and balance both variations in power loads and unexpected changes — up and down — in wind power output.

New wind forecasting applications

Wind output is difficult to predict, making it hard to schedule accurately. This uncertainty increases the amount of reserves BPA must hold to keep loads and generation in balance. BPA has installed 14 anemometers throughout the region to better predict wind availability and is using the data to develop a more accurate wind power forecast system for the Columbia Basin.

Dynamic transfer

Dynamic transfer is one of the most important techniques to reliably and cost-effectively integrate large amounts of variable renewable generation resources. This technique would allow a dispatcher in one balancing authority to control and take responsibility for supplying balancing reserves for a generator located in another balancing authority. A study identifying available dynamic transfer capacity on 11 key transmission paths completed in February 2010 found moderate amounts of available dynamic transfer capability. BPA is making this capability available to its customers on a pilot basis.

Managing large wind fleets is proving most efficient when handled across large geographic areas.

Customer-supplied imbalance reserves

Also known as self-supply, this project would allow wind generators in the BPA balancing authority area to supply their own imbalance reserves rather than relying on BPA for such services. BPA plans to launch this project on a pilot basis in October 2010, once the necessary technical adjustments are in place on both BPA and participating wind project systems. Wind project owners likely will use the Joint Initiative's Dynamic Scheduling System to facilitate supplying their reserves.

There are more than 30 discrete balancing authorities in the Western Electricity Coordinating Council (see box, page 6.). The result is numerous system operators, each of whom has individual requirements to maintain a constant balance between load and generation. This fragmentation is a challenge for the development of wind power in the Northwest, because wind generated in one balancing authority often serves consumers in another balancing authority that may be located across several intervening balancing authorities.

Exploring generation capacity reserves

Wind project operators in BPA's balancing authority pay for integration services for their projects, so that the consumers who pay to purchase wind power both receive the benefits of wind power and pay the costs of the resource. For 2010–2011, the rate reflects the costs of generation imbalance reserves provided from federal hydropower resources.

As the wind resource grows, even with efficiencies, new resources likely will be needed to provide balancing services for variable renewable resources. In preparation, BPA has begun to explore options for adding flexibility capacity.

Key terms

Balancing Authority: A balancing authority is an entity that is responsible for maintaining a constant balance between power load and power generation in a geographic area. It is usually a utility or other transmission provider such as a regional transmission organization. There are 14 balancing authorities in the Pacific Northwest. BPA's balancing authority area includes primarily rural portions of Oregon and Washington, plus small portions of northern Idaho and northwest Montana.

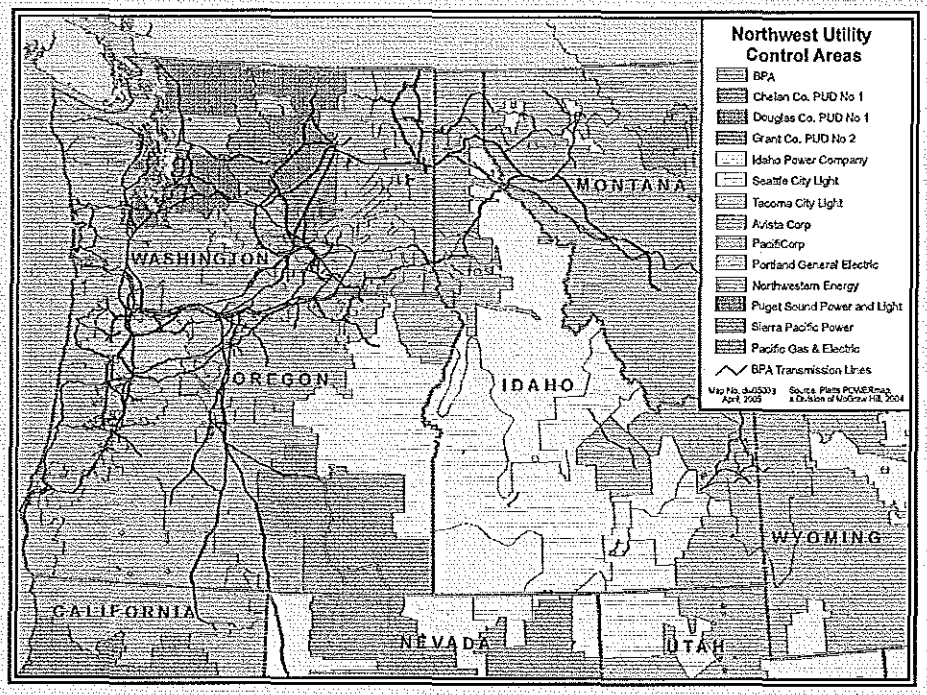
Balancing Reserves: Generation held available to be ready to use if needed to maintain the balance between power load and power generation as loads fluctuate and/or as real-time generation differs from scheduled generation.

Part of a much larger picture

Most of the Northwest's wind generation is in rural portions of eastern Oregon and Washington, while most consumers of wind power are in larger metropolitan areas in balancing authorities managed by other utilities. Worldwide, managing large wind fleets is proving most efficient when handled in unified systems that cover large geographic areas with millions of people and many, diverse power sources, such as in Spain and Texas.

Utilities in the Northwest are working together to realize similar benefits across their smaller balancing authorities. BPA is among many Western utilities participating in a Joint Initiative of ColumbiaGrid, WestConnect and the Northern Tier Transmission Group — entities managing and coordinating some transmission issues among utilities — to develop common approaches to wind integration. For example, the Joint Initiative is creating a common system for dynamically scheduling control of a wind generator from a resident balancing authority to another balancing authority where the wind power is being consumed.

On a still larger scale, utilities throughout the Western Interconnection — the interconnected power system of the Western United States, British Columbia, Alberta and small parts of Mexico — are working to redesign transmission and power resource planning and adapt the way the grid works to help meet state and national renewable power objectives. The Western Electricity Coordinating Council, the reliability organization for the Western Interconnection, is leading this effort.



BPA is the balancing authority responsible for maintaining a constant balance between the power load and power generation in the area shown in teal. (A balancing authority is also known as a control area.) Most of the wind power on line and planned for the Pacific Northwest is clustered in BPA's balancing authority at the eastern end of the Columbia River Gorge. However, 80 percent of the wind power in BPA's balancing authority area serves loads in other utilities' balancing authorities.

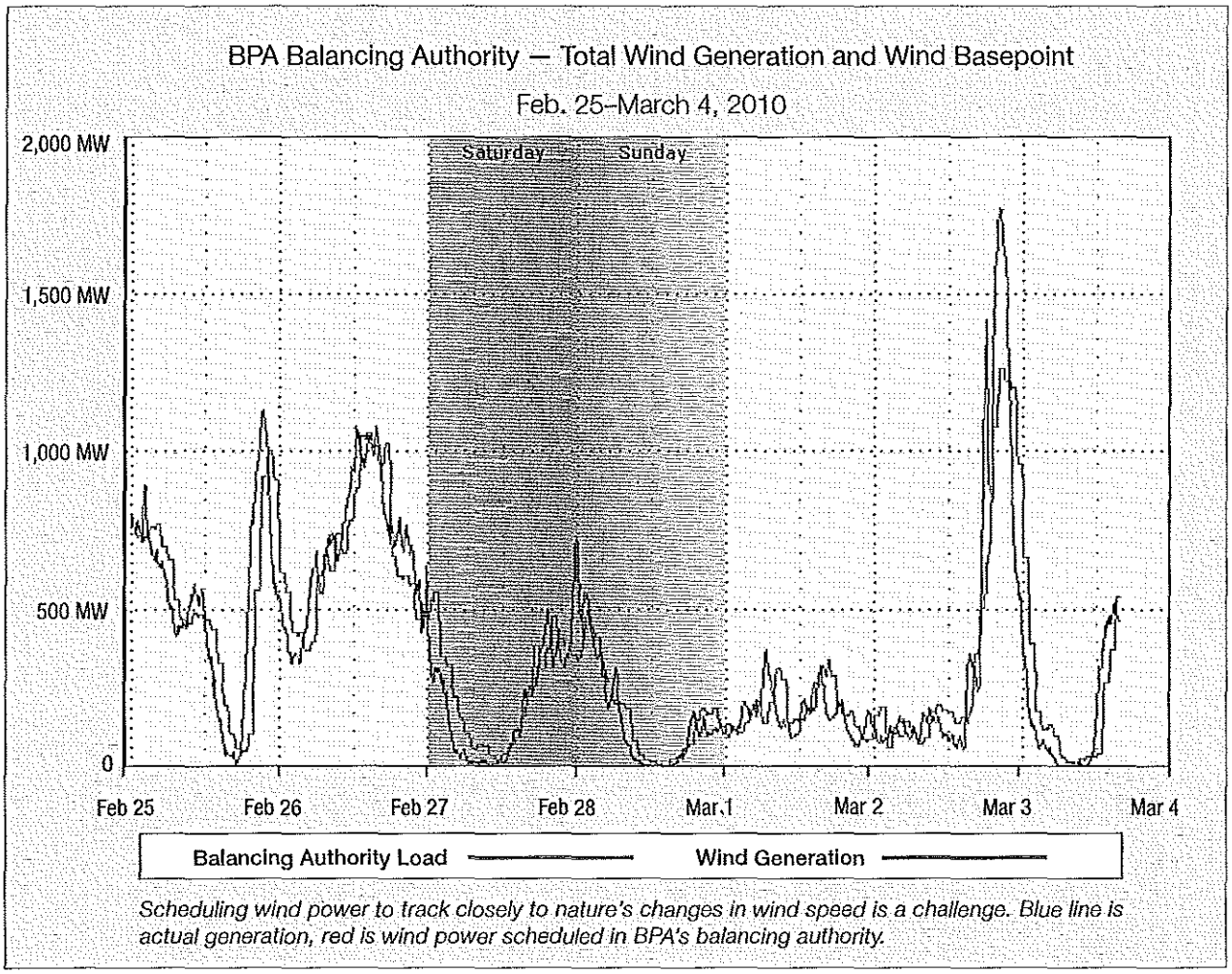
Energy storage technologies could be a valuable source of such flexibility to the degree they can absorb excess wind energy when it is not needed and return it to the grid during periods of greater demand. For example, BPA is working with the Pacific Northwest National Laboratory on its study of various options including pumped storage, compressed air storage, batteries and flywheels. PNNL is also examining residential applications such as hot water heaters as potential sources of energy storage for the grid.

BPA is working with the U.S. Army Corps of Engineers and the Bureau of Reclamation on the potential for pumped hydro storage in the Northwest. This represents a new application of an existing but evolving technology that could help fill the need for more frequent uses of ramping generation to respond to wind variability.

BPA has begun to explore options for adding flexibility capacity.

Follow our progress

To follow BPA's wind integration work or participate in its efforts, go to *www.bpa.gov/go/wind,* contact Eric King at *evking@bpa.gov* or call BPA at 1-800-622-4519.



Scheduling wind power to track closely to nature's changes in wind speed is a challenge. Blue line is actual generation, red is wind power scheduled in BPA's balancing authority.

BONNEVILLE POWER ADMINISTRATION
DOE/BP-4146 • MARCH 2010

BPA's Balancing Area
Balancing Fish, Water, and Wind

Potential cumulative impacts to fish and other aquatic resources from past, present, and future development in the region include the loss of riparian habitat, increased sediment loading, increased stream temperatures, pollution from herbicide and insecticide use, changes in peak and low stream flows, fragmentation of fish habitat, decreases in stream bank stability, and altered nutrient supply. Since wind projects in the region are typically located in upland areas and generally well away from fish habitat, these projects are not expected to have a significant contribution to direct cumulative impacts to fish species.

However, the interconnection of existing and proposed wind-powered generation projects in the region to the BPA transmission system does poses the potential for cumulative impacts to listed Columbia River fish species through a somewhat complex relationship among the wind projects, general Columbia River hydrosystem operations (see map below), and operation of the hydrosystem to meet Clean Water Act (CWA) and Endangered Species Act (ESA) requirements for listed fish species.

Many of the region's wind generators are located within what is known as the BPA Balancing Area. In BPA's balancing area, like in all balancing areas, there must be a match between generation and load at all times. Within BPA's Balancing Area, most existing and proposed wind projects are concentrated in one geographic area, located to the east of the Columbia River Gorge. Because of this concentration, the amount of wind power on BPA's transmission system tends to vary with the sometimes widely fluctuating wind velocities (and hence wind project output) in this area. That is, when wind speeds are low in this area, there is very little wind power generated, and the amount of wind power on BPA's system is low. Conversely, when wind speeds are high, the wind projects are generating close to or at full capacity, and the amount on BPA's system is high.

The proportion of wind power on BPA's transmission system has grown quickly and dramatically in recent years, and even greater future growth is expected. As of January 2010, there were more than 2,700 MW of total wind generation interconnected to the BPA system. In addition, BPA expects to have up to 6,000 MW of total wind generation interconnected to the system by 2013.

The combination of an increasingly large proportional share of wind power on BPA's system and the natural fluctuation of this power results in large, unscheduled swings in wind generation of up to several hundred megawatts within a single hour. **To address this situation, BPA currently reserves capacity in the hydrosystem to provide balancing services for these swings when needed.**

The potential for impacts to Columbia River fish arises when the electrical output from wind generators in the region exceeds their hourly generation schedules. In such situations, BPA must immediately decrease generation elsewhere in the system to maintain the constant balance of generation and load needed to keep the system stable. This can be accomplished in one of three ways. First, BPA can reduce overall Columbia River water flows and generation by releasing less water from Columbia River hydroprojects and putting the water into storage. Second, BPA can decrease hydroproject generation by spilling water at the dams rather than running it through the dam turbines. Third, BPA can reduce other sources of generation within the BPA Balancing Area.

During certain times and conditions, the first option of reducing flows is not available because reservoir space is being maintained for required flood protection at the hydro projects. At these times, river flows are already high due to spring runoff or other required drafts to maintain flood control space. Because of these flood control requirements, there simply is no space at the reservoirs in which to store additional water to decrease generation during these periods.

Likewise, the second option – spilling water at the dams – is not available during certain times and conditions because this spilling results in elevated levels of total dissolved gases developing in the river. As the amount of water spilled increases, so does the level of total dissolved gases. The CWA standards for total dissolved gases, which were established to protect fish, limit the level of dissolved gas saturation permissible in the river when migrating salmon are present. Naturally occurring levels of gas in the Columbia and Snake rivers varies between 105 and 120 percent of equilibrium total gas saturation pressure (ambient atmospheric pressure). The state standard for saturation in these rivers is limited to 110 percent of saturation at any point of sample collection without a state waiver. The U.S. Army Corps of Engineers has obtained a state waiver from Oregon and Washington that allows the level of gas in the rivers to be 120 percent. Running the river to this level, but no higher, to avoid CWA violations has become a fundamental component of how spill and resultant fish passage has been managed at hydroelectric power generation facilities.

Another issue with the second option is the increased potential to actually harm ESA-listed fish species. Higher levels of gas supersaturation associated with increased spilling increases the risk of ESA-listed fish species being affected by gas bubble trauma from excessive uncompensated gas pressure which they cannot avoid. Species, life-stage, size and genetics are all important factors in determining the tolerance of fish to supersaturated waters. Acute mortality will occur when gas bubbles are present in the heart in sufficient quantity to prevent the movement of blood. Various sublethal effects have also been reported to significantly impact

mortality, most importantly blindness, decreased tolerance to stress, loss of lateral sense, and secondary infections. Permanent affects to individuals and large-scale mortality in populations may occur after only short-term exposure to high levels of gas, especially in environments where compensating pressures do not exist. Avoiding such impacts to ESA-listed fish species is also a fundamental component of how spill and resultant fish passage has been managed at hydroelectric power generation facilities.

Because of these issues with the first and second options, BPA currently is working towards implementing the third option. Accordingly, BPA is working with wind project developers and operators to develop measures for temporarily reducing sources of wind generation within the BPA Balancing Area when necessary. As part of a comprehensive review of wind project interconnections and their effects that was conducted in winter 2008, BPA has established transmission operation protocols under which BPA's dispatch system automatically instructs wind project operators to reduce their generation to specified levels if necessary for reliability and ESA or CWA compliance. BPA has issued Dispatcher Standing Order (DSO) 216 to document these protocols, and is continuing to refine and clarify this DSO as more is learned about wind project operations relative to BPA's transmission system (visit *http://www.transmission.bpa.gov/wind/op_controls/default.cfm* for more information). These measures ensure that wind power on BPA's transmission system does not cumulatively impact Columbia River hydro operations necessary for listed fish species.

The Federal Columbia River Power System (purple dams) as seen on the Columbia and Snake Rivers.

COMMENT LETTER 312

Michelle, Kayce (UTC)

From: [redacted]
Sent: Friday, August 27, 2010 9:50 AM
To: EFSEC (UTC)
Subject: I support Whistling Ridge

Hello Energy Facility Site Evaluation Council,

Wind power is our future. It goes with hydro power hand in glove. Fosil power is affordable now, but as sources of coal and gas decline, and as global demand for them increases, these electricity generating fuels will make fosil power by far the most expensive source. Not in ten years, but in five. The sates with the highest percentage of wind power will be the most prepared for that high cost future.
I\'ve been on the turbine roads at Whistling Ridge (and Coyote Crest). The sites are challenging, but the wind resource is strong. The developers have solid plans for high quality projects. It\'s time to get wind power generation a little closer to the people who use it.
Thank you,
Dave Malen

Sincerely,
Dave Malen
[redacted]

Michelle, Kayce (UTC)

From: Annette Lange Hildebrand [redacted]
Sent: Friday, August 27, 2010 9:50 AM
To: EFSEC (UTC)
Subject: Whistling Ridge Negatively Impacts Columbia Gorge

I am so saddened by even the thought of Whistling Ridge Energy Project in the Underwood Washington area.
The impact would last a life time, not only to the world acclaimed scenery that is beyond price, but to the sensitive habitat and wildlife as well.

There is a need for wind and solar energy, yes.
However, there are other areas, especially in Sherman County and other areas in NE Oregon, beyond the scenic area of the Columbia River.
There are places that migrating birds are not passing through as well.
Please, please reconsider the location of this project.

Thank you for allowing me to submit these comments into the record.

Sincerely,
Annette Lange Hildebrand
[redacted]

Annette Lange Hildebrand
[redacted]

Michelle, Kayce (UTC)

From: repa[redacted]
Sent: Friday, August 27, 2010 10:12 AM
To: EFSEC (UTC)
Subject: Comments-Whistling Ridge DEIS-EJ-Repar-3
Attachments: Comments_DEIS_Environmental Justice_27Aug2010.doc; NEPA_ej_guidance_nepa_epa0498.pdf; EJ_presidential order_12898.pdf

Importance: High

Dear EFSEC,
Attached, please find my comments on Environmental Justice, for the Whistling Ridge DEIS, with attachments. Thank you.

Mary J. Repar

[redacted]

Mary J. Repar
[redacted]

27 August 2010

EFSEC
905 Plum Street SE
Olympia, WA 98504-3172
e-mail: efsec@commerce.wa.gov

BPA
Public Affairs Office – DKE -7
P.O. Box 14428
Portland, OR 97293-4428
Toll-free comment line: 800.622.4519
FAX: 503.230.3285
503. 230. 4145
www.bpa.gov/comment

Re: Inadequacy of the Environmental Justice analyses for the proposed BPA and SDS Lumber Whistling Ridge wind farm project located in rural Skamania County; and, cumulative impacts of environmental injustice on the rural environment and inhabitants, both human and wildlife

Dear EFSEC and BPA,

An area which I thought got very short shrift and not enough in-depth analysis, in the DEIS, was the subject of Environmental Justice (EJ). To me, a lay person, EJ means that the exploitation of the environment (including wildlife, ecosystems, habitats, etc.) and humans should not be allowed by individuals, entities, and agencies, in order to benefit themselves. BPA and SDS are both entities, one Federal, the other private. BPA certainly must adhere to Executive Order 12898, "Federal Actions to address Environmental Justice in Minority populations and Low-Income Population."

In doing my research on the EJ issue, I came across the following statement from the Environmental Protection Agency (EPA) **(see attachment, entitled NEPA_ej_nepa_epa0498.pdf)**; although this is EPA-specific, I believe it also pertains to another Federal agency, BPA: 'On February 11, 1994, President Clinton issued Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." This Executive Order is **designed to focus the attention of federal agencies on the human health and environmental conditions** in minority communities and low-income communities. **It requires federal agencies to adopt strategies to address environmental justice concerns within the context of agency operations.** In an accompanying Presidential memorandum, the President emphasizes existing laws, including the **National Environmental Policy Act (NEPA) should provide opportunities for federal agencies to address environmental hazards in minority communities and low-income communities**. In April of 1995, the U.S. Environmental Protection Agency (EPA) released the document titled "Environmental

Justice Strategy: Executive Order 12898." The document defines the approaches by which EPA will ensure that **disproportionately high and adverse human health or environmental effects on minority communities and low-income communities are identified and addressed.** It establishes Agency-wide goals for American Indian, Alaska Native, and other indigenous peoples (e.g., Native Hawaiian). It also establishes Agency-wide goals for environmental protection, and lists actions the EPA would take to incorporate environmental justice into its mission." [my bold emphasis]

There is a section in the Executive Order 12898 **(see attachment EJ_presidential order_12898.pdf)** on EJ, "Sec. 4–4. Subsistence Consumption of Fish and Wildlife, 4–401. Consumption Patterns. In order to assist in identifying the need for ensuring protection of populations with differential patterns of subsistence consumption of fish and wildlife, Federal agencies, whenever practicable and appropriate, shall collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence. Federal agencies shall communicate to the public the risks of those consumption patterns" which is pertinent to the DEIS and I believe was NOT adequately addressed. BPA must have a lot of information on the Indian tribes, who "principally rely on fish and/or wildlife for subsistence" so they didn't they include it in the EJ section of the DEIS? There are cumulative impacts to wildlife and humans from BPA's energy generation. Where are the cumulative impacts and effects analyses in the DEIS?

Another section deals with discrimination, "6–602. *Executive Order No. 12250.* This Executive order is intended to supplement but not supersede Executive Order No. 12250, which requires consistent and effective implementation of various laws prohibiting discriminatory practices in programs receiving Federal financial assistance. Nothing herein shall limit the effect or mandate of Executive Order No. 12250." Well, I think that rural areas are being discriminated against by being littered with Federally subsidized wind farms whose impermeable surfaces and hundreds of miles of environment-destroying, prairie criss-crossing maintenance roads are highly destructive to the rural environment. Why aren't these wind farms located in urban areas, areas which they primarily serve with their energy production?

The "No Action" Alternative for the Whistling Ridge DEIS was also not adequately explored in the EJ section. In Morongo Band of Mission Indians v. Federal Aviation Administration, 161 R.3d. 569, 98 Cal. Daily Op. Serv. 8560 (9th Cir. 11/23/1998)[1], it states **"NEPA's regulations require agencies to "[r]igorously explore**

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[1] Morongo Band of Mission Indians v. Federal Aviation Administration, 161 F.3d 569, 98 Cal. Daily Op. Serv. 8560 (9th Cir. 11/23/1998)

[1] U.S. Court of Appeals, Ninth Circuit

[2] No. 98-70033

[3] 161 F.3d 569, 98 Cal. Daily Op. Serv. 8560, 1998.C09.42034 http://www.versuslaw.com

[4] November 23, 1998

and objectively evaluate all reasonable alternatives." 40 C.F.R. S 1502.14. "The `existence of a viable but unexamined alternative renders an environmental impact statement inadequate.' [my bold emphasis] Where is the rigorous exploration of the "No Action" alternative in the DEIS? It does not exist. That is one big reason why DEIS should NOT be written by the proponents of projects—they tend to be heavily biased toward having their project built!

In the EPA document (see attachment) that I have already cited, there is the following statement: **"EISs are required to be broad in scope, *addressing the full range of potential effects of the proposed action on human health and the environment.* Regulations established by both the Council on Environmental Quality (CEQ) and EPA require that socioeconomic impacts associated with significant physical environmental impacts be addressed in the EIS." [my bold and *italic emphasis*]."** There is certainly no "full range of potential effects of the proposed action on human health and the environment" analysis in the DEIS. Health effects that might or would occur—audio, visual, environmental—are downplayed in the EIS and information that is contradictory is not included. What are the benefits and detriments of siting hundreds if not thousands of wind farms in rural environments? What are the impacts to the rural communities and their way of life? What are the impacts to water resources? To air quality? Wind farm proponents talk about turbines as if they are do not change air quality, but propellers whirling around do change the chemical composition of air. Where is the analysis to look at this air quality issue? Wind turbines can change the flow of wind in the area where they are located. How do wind turbines changing local wind patterns affect the local area? How does it affect crops? Rainfall? Rural areas have

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[5] **MORONGO BAND OF MISSION INDIANS, PETITIONER, v. FEDERAL AVIATION ADMINISTRATION; WILLIAM WITHYCOMBE, REGIONAL ADMINISTRATOR, FAA, RESPONDENTS.**

[15] SUMMARY

[16] OPINION

[17] The Morongo Band of Mission Indians ("Morongo Band" or "Tribe") petitions for review of a Record of Decision ("ROD") of the Federal Aviation Administration ("FAA"), implementing the Los Angeles International Airport ("LAX") East Arrival Enhancement Project ("AEP"). The Morongo Band raises claims under the National Environmental Policy Act ("NEPA"), 42 U.S.C. SS 4321-4370d, section 106 of the National Historic Preservation Act ("NHPA"), 16 U.S.C. S 470f, section 4(f) of the Transportation Act, 49 U.S.C. S 303(c), and various FAA regulations.

[48] NEPA's regulations require agencies to "[r]igorously explore and objectively evaluate all reasonable alternatives." 40 C.F.R. S 1502.14. "The `existence of a viable but unexamined alternative renders an environmental impact statement inadequate.' " Resources Ltd. v. Robertson, 35 F.3d 1300, 1307 (9th Cir. 1994) (quoting Idaho Conservation League v. Mumma, 956 F.2d 1508, 1519 (9th Cir. 1992)). An agency, however, is "entitled to identify some parameters and criteria -- related to Plan standards -- for generating alternatives to which it would devote serious consideration. Without such criteria, an agency could generate countless alternatives." Id. (quoting Mumma, 956 F.2d at 1522). The "touchstone for our inquiry is whether an EIS's selection and Discussion of alternatives fosters informed decision-making and informed public participation." City of Angoon v. Hodel, 803 F.2d 1016, 1020 (9th Cir. 1986) (internal quotations and citation omitted).

water resources that are used by many urban areas. If these water resources are used and abused, we will all suffer.

In conclusion, the environmental justice section of the Whistling Ridge DEIS, p. 3-250+, is not adequately address by BPA, a Federal agency. Nor is it adequately addressed by SDS, the co-proponent of this wind farm project. Rural areas are being disproportionately impacted by these Federally-subsidized wind farms, and thorough, data-rich, regional cumulative impacts analyses have not been done, to date, by BPA or SDS. Environmental justice practices demand a complete analysis of cumulative impacts on human health and the environment. BPA should, as a Federal agency, know this and should have done its Federally-mandated environmental justice analysis of the cumulative impacts and effects of its actions on rural communities in its region of energy production.

/e-signature/Mary J. Repar
27 August 2010

Federal Register
Vol. 59, No. 32
Wednesday, February 16, 1994

Presidential Documents

Title 3—

The President

Executive Order 12898 of February 11, 1994

Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:

Section 1–1. *Implementation.*

1–101. *Agency Responsibilities.* To the greatest extent practicable and permitted by law, and consistent with the principles set forth in the report on the National Performance Review, each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions, the District of Columbia, the Commonwealth of Puerto Rico, and the Commonwealth of the Mariana Islands.

1–102. *Creation of an Interagency Working Group on Environmental Justice.* (a) Within 3 months of the date of this order, the Administrator of the Environmental Protection Agency ("Administrator") or the Administrator's designee shall convene an interagency Federal Working Group on Environmental Justice ("Working Group"). The Working Group shall comprise the heads of the following executive agencies and offices, or their designees: (a) Department of Defense; (b) Department of Health and Human Services; (c) Department of Housing and Urban Development; (d) Department of Labor; (e) Department of Agriculture; (f) Department of Transportation; (g) Department of Justice; (h) Department of the Interior; (i) Department of Commerce; (j) Department of Energy; (k) Environmental Protection Agency; (l) Office of Management and Budget; (m) Office of Science and Technology Policy; (n) Office of the Deputy Assistant to the President for Environmental Policy; (o) Office of the Assistant to the President for Domestic Policy; (p) National Economic Council; (q) Council of Economic Advisers; and (r) such other Government officials as the President may designate. The Working Group shall report to the President through the Deputy Assistant to the President for Environmental Policy and the Assistant to the President for Domestic Policy.

(b) The Working Group shall: (1) provide guidance to Federal agencies on criteria for identifying disproportionately high and adverse human health or environmental effects on minority populations and low-income populations;

(2) coordinate with, provide guidance to, and serve as a clearinghouse for, each Federal agency as it develops an environmental justice strategy as required by section 1–103 of this order, in order to ensure that the administration, interpretation and enforcement of programs, activities and policies are undertaken in a consistent manner;

(3) assist in coordinating research by, and stimulating cooperation among, the Environmental Protection Agency, the Department of Health and Human Services, the Department of Housing and Urban Development, and other agencies conducting research or other activities in accordance with section 3–3 of this order;

(4) assist in coordinating data collection, required by this order;

(5) examine existing data and studies on environmental justice;

(6) hold public meetings as required in section 5–502(d) of this order; and

(7) develop interagency model projects on environmental justice that evidence cooperation among Federal agencies.

1–103. *Development of Agency Strategies.* (a) Except as provided in section 6–605 of this order, each Federal agency shall develop an agency-wide environmental justice strategy, as set forth in subsections (b)–(e) of this section that identifies and addresses disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. The environmental justice strategy shall list programs, policies, planning and public participation processes, enforcement, and/or rulemakings related to human health or the environment that should be revised to, at a minimum: (1) promote enforcement of all health and environmental statutes in areas with minority populations and low-income populations; (2) ensure greater public participation; (3) improve research and data collection relating to the health of and environment of minority populations and low-income populations; and (4) identify differential patterns of consumption of natural resources among minority populations and low-income populations. In addition, the environmental justice strategy shall include, where appropriate, a timetable for undertaking identified revisions and consideration of economic and social implications of the revisions.

(b) Within 4 months of the date of this order, each Federal agency shall identify an internal administrative process for developing its environmental justice strategy, and shall inform the Working Group of the process.

(c) Within 6 months of the date of this order, each Federal agency shall provide the Working Group with an outline of its proposed environmental justice strategy.

(d) Within 10 months of the date of this order, each Federal agency shall provide the Working Group with its proposed environmental justice strategy.

(e) Within 12 months of the date of this order, each Federal agency shall finalize its environmental justice strategy and provide a copy and written description of its strategy to the Working Group. During the 12 month period from the date of this order, each Federal agency, as part of its environmental justice strategy, shall identify several specific projects that can be promptly undertaken to address particular concerns identified during the development of the proposed environmental justice strategy, and a schedule for implementing those projects.

(f) Within 24 months of the date of this order, each Federal agency shall report to the Working Group on its progress in implementing its agency-wide environmental justice strategy.

(g) Federal agencies shall provide additional periodic reports to the Working Group as requested by the Working Group.

1–104. *Reports to the President.* Within 14 months of the date of this order, the Working Group shall submit to the President, through the Office of the Deputy Assistant to the President for Environmental Policy and the Office of the Assistant to the President for Domestic Policy, a report that describes the implementation of this order, and includes the final environmental justice strategies described in section 1–103(e) of this order.

Sec. 2–2. *Federal Agency Responsibilities for Federal Programs.* Each Federal agency shall conduct its programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons (including populations) from participation in, denying persons (including populations) the benefits of, or subjecting persons (including populations) to discrimination under, such programs, policies, and activities, because of their race, color, or national origin.

Sec. 3-3. *Research, Data Collection, and Analysis.*

3-301. *Human Health and Environmental Research and Analysis.* (a) Environmental human health research, whenever practicable and appropriate, shall include diverse segments of the population in epidemiological and clinical studies, including segments at high risk from environmental hazards, such as minority populations, low-income populations and workers who may be exposed to substantial environmental hazards.

(b) Environmental human health analyses, whenever practicable and appropriate, shall identify multiple and cumulative exposures.

(c) Federal agencies shall provide minority populations and low-income populations the opportunity to comment on the development and design of research strategies undertaken pursuant to this order.

3-302. *Human Health and Environmental Data Collection and Analysis.* To the extent permitted by existing law, including the Privacy Act, as amended (5 U.S.C. section 552a): (a) each Federal agency, whenever practicable and appropriate, shall collect, maintain, and analyze information assessing and comparing environmental and human health risks borne by populations identified by race, national origin, or income. To the extent practical and appropriate, Federal agencies shall use this information to determine whether their programs, policies, and activities have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations;

(b) In connection with the development and implementation of agency strategies in section 1-103 of this order, each Federal agency, whenever practicable and appropriate, shall collect, maintain and analyze information on the race, national origin, income level, and other readily accessible and appropriate information for areas surrounding facilities or sites expected to have a substantial environmental, human health, or economic effect on the surrounding populations, when such facilities or sites become the subject of a substantial Federal environmental administrative or judicial action. Such information shall be made available to the public, unless prohibited by law; and

(c) Each Federal agency, whenever practicable and appropriate, shall collect, maintain, and analyze information on the race, national origin, income level, and other readily accessible and appropriate information for areas surrounding Federal facilities that are: (1) subject to the reporting requirements under the Emergency Planning and Community Right-to-Know Act, 42 U.S.C. section 11001-11050 as mandated in Executive Order No. 12856; and (2) expected to have a substantial environmental, human health, or economic effect on surrounding populations. Such information shall be made available to the public, unless prohibited by law.

(d) In carrying out the responsibilities in this section, each Federal agency, whenever practicable and appropriate, shall share information and eliminate unnecessary duplication of efforts through the use of existing data systems and cooperative agreements among Federal agencies and with State, local, and tribal governments.

Sec. 4-4. *Subsistence Consumption of Fish and Wildlife.*

4-401. *Consumption Patterns.* In order to assist in identifying the need for ensuring protection of populations with differential patterns of subsistence consumption of fish and wildlife, Federal agencies, whenever practicable and appropriate, shall collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence. Federal agencies shall communicate to the public the risks of those consumption patterns.

4-402. *Guidance.* Federal agencies, whenever practicable and appropriate, shall work in a coordinated manner to publish guidance reflecting the latest scientific information available concerning methods for evaluating the human health risks associated with the consumption of pollutant-bearing fish or

wildlife. Agencies shall consider such guidance in developing their policies and rules.

Sec. 5-5. *Public Participation and Access to Information.* (a) The public may submit recommendations to Federal agencies relating to the incorporation of environmental justice principles into Federal agency programs or policies. Each Federal agency shall convey such recommendations to the Working Group.

(b) Each Federal agency may, whenever practicable and appropriate, translate crucial public documents, notices, and hearings relating to human health or the environment for limited English speaking populations.

(c) Each Federal agency shall work to ensure that public documents, notices, and hearings relating to human health or the environment are concise, understandable, and readily accessible to the public.

(d) The Working Group shall hold public meetings, as appropriate, for the purpose of fact-finding, receiving public comments, and conducting inquiries concerning environmental justice. The Working Group shall prepare for public review a summary of the comments and recommendations discussed at the public meetings.

Sec. 6-6. *General Provisions.*

6-601. *Responsibility for Agency Implementation.* The head of each Federal agency shall be responsible for ensuring compliance with this order. Each Federal agency shall conduct internal reviews and take such other steps as may be necessary to monitor compliance with this order.

6-602. *Executive Order No. 12250.* This Executive order is intended to supplement but not supersede Executive Order No. 12250, which requires consistent and effective implementation of various laws prohibiting discriminatory practices in programs receiving Federal financial assistance. Nothing herein shall limit the effect or mandate of Executive Order No. 12250.

6-603. *Executive Order No. 12875.* This Executive order is not intended to limit the effect or mandate of Executive Order No. 12875.

6-604. *Scope.* For purposes of this order, Federal agency means any agency on the Working Group, and such other agencies as may be designated by the President, that conducts any Federal program or activity that substantially affects human health or the environment. Independent agencies are requested to comply with the provisions of this order.

6-605. *Petitions for Exemptions.* The head of a Federal agency may petition the President for an exemption from the requirements of this order on the grounds that all or some of the petitioning agency's programs or activities should not be subject to the requirements of this order.

6-606. *Native American Programs.* Each Federal agency responsibility set forth under this order shall apply equally to Native American programs. In addition, the Department of the Interior, in coordination with the Working Group, and, after consultation with tribal leaders, shall coordinate steps to be taken pursuant to this order that address Federally-recognized Indian Tribes.

6-607. *Costs.* Unless otherwise provided by law, Federal agencies shall assume the financial costs of complying with this order.

6-608. *General.* Federal agencies shall implement this order consistent with, and to the extent permitted by, existing law.

6-609. *Judicial Review.* This order is intended only to improve the internal management of the executive branch and is not intended to, nor does it create any right, benefit, or trust responsibility, substantive or procedural, enforceable at law or equity by a party against the United States, its agencies, its officers, or any person. This order shall not be construed to create any right to judicial review involving the compliance or noncompliance

of the United States, its agencies, its officers, or any other person with this order.

THE WHITE HOUSE,
February 11, 1994.

[FR Citation 59 FR 7629]

Final Guidance For Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses

April 1998

DISCLAIMER AND ACKNOWLEDGMENTS

The mention of company or product names is not to be considered an endorsement by the U.S. Government or by the Environmental Protection Agency. With the technical assistance of Science Applications International Corporation (SAIC), this document was prepared in partial fulfillment of EPA Contract 68-WE-0026, Work Assignment 72-IV.

This guidance was prepared under the direction of an EPA Workgroup co-chaired by Arthur Totten and Bill Dickerson of the Office of Federal Activities and helped by Karen Norris. The Workgroup members included the following:

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This guidance is intended to improve the internal management of EPA with respect to environmental justice under NEPA. It will not be deemed to create any right, benefit or trust obligation either substantive or procedural, enforceable by any person, or entity in any court against the agency, its officers, or any other person. Compliance with this guidance will not be justiciable in any proceeding for judicial review of agency action.

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1.0 PURPOSE

On February 11, 1994, President Clinton issued Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." This Executive Order is designed to focus the attention of federal agencies on the human health and environmental conditions in minority communities and low-income communities. It requires federal agencies to adopt strategies to address environmental justice concerns within the context of agency operations. In an accompanying Presidential memorandum, the President emphasizes existing laws, including the National Environmental Policy Act (NEPA) should provide opportunities for federal agencies to address environmental hazards in minority communities and low-income communities. In April of 1995, the U.S. Environmental Protection Agency (EPA) released the document titled "Environmental Justice Strategy: Executive Order 12898." The document defines the approaches by which EPA will

ensure that disproportionately high and adverse human health or environmental effects on minority communities and low-income communities are identified and addressed. It establishes Agency-wide goals for American Indian, Alaska Native, and other indigenous peoples (e.g., Native Hawaiian). It also establishes Agency-wide goals for environmental protection, and lists actions the EPA would take to incorporate environmental justice into its mission.

In August 1997, the EPA Office of Environmental Justice released the "Environmental Justice Implementation Plan." The Implementation Plan supplements the EPA environmental justice strategy. It provides estimated time frames for undertaking revisions, identifying the lead agents and determining the measures of success for each action item. Several EPA offices are developing more specific plans and guidance to implement Executive Order 12898 and this Agency-wide strategy.

This document serves as a guidance to incorporate environmental justice goals into EPA's preparation of environmental impact statements (EISs) and environmental assessments (EAs) under NEPA. The National Environmental Policy Act of 1969 (42 U.S.C. §4321 et seq.) serves as the Nation's basic environmental protection charter. A primary purpose of NEPA is to ensure that federal agencies consider the environmental consequences of their actions and decisions as they conduct their respective missions. For "major Federal actions significantly affecting the quality of the human environment," the federal agency must prepare a detailed environmental impact statement (EIS) that assesses the proposed action and all reasonable alternatives. EISs are required to be broad in scope, addressing the full range of potential effects of the proposed action on human health and the environment. Regulations established by both the Council on Environmental Quality (CEQ) and EPA require that socioeconomic impacts associated with significant physical environmental impacts be addressed in the EIS.

Environmental assessments have also become very important components of the NEPA process. Originally intended to serve as a mechanism for determining whether an agency's action was significant, thereby meriting an EIS, EAs are important analyses on their own. As a matter of policy, EAs completed by EPA regularly address

socioeconomic effects associated with environmental impacts of Agency actions.

The purpose of this guidance is to assist EPA staff responsible for developing EPA NEPA compliance documentation, including EISs and EAs, in addressing a specific concern -- that of environmental justice. Because analyzing and addressing environmental justice may assist in determining the distributional effects of environmental impacts on certain populations, it is entirely consistent with the NEPA process. This guidance is intended to:

• heighten awareness of EPA staff in addressing environmental justice issues within NEPA analyses and considering the full potential for disproportionately high and adverse human health or environmental effects on minority populations and low-income populations;

• present basic procedures for identifying and describing junctures in the NEPA process where environmental justice issues may be encountered;

• present procedures for addressing disproportionately high and adverse effects to evaluate alternative actions, and;

• present methods for communicating with the affected population throughout the NEPA process.

As seen throughout this guidance document, environmental justice issues can be and should be analyzed and addressed using many of the same tools currently intrinsic to the NEPA process.

1.1 Background

1.1.1 What is Environmental Justice?

Environmental Justice has been defined by a variety of organizations interested in the topic. EPA's Office of Environmental Justice offers the following definition:

"The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people,

including racial, ethnic, or socioeconomic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies."

The goal of this "fair treatment" is not to shift risks among populations, but to identify potential disproportionately high and adverse effects and identify alternatives that may mitigate these impacts.

1.1.2 Executive Order 12898

Executive Order 12898 and its accompanying memorandum have the primary purpose of ensuring that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations ..."[1] The Executive Order also explicitly called for the application of equal consideration for Native American programs. To meet these goals, the Order specified that each agency develop an agency-wide environmental justice strategy.

The Presidential Memorandum that accompanied the Executive Order calls for a variety of actions. Four specific actions were directed at NEPA-related activities, including:

1. Each federal agency must analyze environmental effects, including human health, economic, and social effects, of federal actions, including effects on minority communities and low-income communities, when such analysis is required by NEPA.

2. Mitigation measures outlined or analyzed in EAs, EISs, or Records of Decision (RODs), whenever feasible, should address significant and adverse environmental effects of proposed federal actions on minority communities and low-income communities.

3. Each federal agency must provide opportunities for community input in the NEPA process, including identifying potential effects and mitigation measures in consultation with affected communities and improving

accessibility of public meetings, official documents, and notices to affected communities.

4. In reviewing other agencies' proposed actions under Section 309 of the Clean Air Act, EPA must ensure that the agencies have fully analyzed environmental effects on minority communities and low-income communities, including human health, social, and economic effects.

As noted earlier, the purpose of this guidance is to assist EPA personnel in identifying and evaluating disproportionately high and adverse human health or environmental effects in minority communities and low-income communities within the context of NEPA documents prepared by EPA for actions which EPA complies with the procedural requirements of NEPA (*e.g.*, research and development activities, facilities construction, wastewater treatment construction grants, EPA-issued National Pollutant Discharge Elimination System (NPDES) permits for new sources, and programs under the EPA Voluntary NEPA Compliance Policy), including instances where EPA satisfies its NEPA compliance obligation as a cooperating agency. It is also meant to improve the affected communities' access to the NEPA process.

1.2 Principles/Philosophy of this Guidance

This guidance highlights important ways in which EPA-prepared NEPA documentation may help to identify and address EJ concerns. The rationale and associated implications of the guidance will be described in the remainder of this document. This section provides a summary listing of the major implications.

EPA officials should be vigilant in identifying where EPA actions may have disproportionately high and adverse human health or environmental effects on minority and/or low-income communities.

Identification should occur as early as possible, preferably during any initial screening exercise. The screening exercise should identify the presence of minority or low-income communities and whether such communities are likely to experience adverse environmental or human health effects as a result of proposed EPA actions.

The sensitivity to environmental justice concerns should sharpen the focus of the analysis. While the analytical tools to be used are similar, the analysis should focus both on the overall affected area and population and on smaller areas and/or communities within the affected area.

It is desirable that EPA NEPA analysts tasked with identifying and addressing environmental justice issues work as a team. This team should be comprised of an interdisciplinary staff that includes individuals familiar with environmental justice issues, public participation mechanisms and outreach strategies, Native American concerns and issues and who are experienced in the risk assessment process. Additionally, the team should consult with EPA's Regional Environmental Justice coordinators (refer to Appendix A), who are valuable resources in identifying local community groups among other functions.

Where proposed actions may affect tribal lands or resources (e.g., treaty-protected resources[2], cultural resources and/or sacred sites[3]) EPA will request that the affected Indian Tribe[4] seek to participate as a cooperating agency (40 CFR 1508.5). Where differences occur regarding the preferred alternative or mitigation measures that will affect tribal lands or resources, the affected Indian Tribe may request that a dispute resolution process be initiated to resolve the conflict between the tribe and the Agency.

Environmental justice concerns may lead to more focused analyses, identifying significant effects that may otherwise have been diluted by examination of a larger population or area. Environmental justice concerns should always trigger the serious evaluation of alternatives as well as mitigation options.

Identifying the "affected community" is particularly important. The effects of the proposed action will often vary depending on the distance of the affected community from the action and the type of effect created by the action (*e.g.,* airborne or waterborne pollution, increased traffic, etc.). Effects on the community should be discussed in terms of reasonable increments from the site of the action.

Community involvement is particularly important in cases involving potential environmental justice issues. Early and sustained communications with the affected community

throughout the NEPA process is an essential component of environmental justice.

For meaningful community involvement to be achieved in circumstances where environmental justice is an issue, technical assistance supplied by EPA should be available to the community to assist in their full participation (e.g., interpretation of scientific documents, development of alternatives or mitigation measures).

EISs and RODs, and EAs and FONSIs (Finding of No Significant Impact) should document the analyses used to identify the presence or absence of disproportionately high and adverse effects and present the results of those analyses. The ROD and the FONSI should document the conclusion of these analyses (i.e., whether the action will or will not have a disproportionately high and adverse effect on minority and/or low-income communities) and describe any mitigation that will be undertaken to avoid or minimize such effects.

1.2.1 EPA Actions Requiring NEPA Compliance

EPA is required to comply with NEPA for its research and development activities, facilities construction, wastewater treatment construction grants under Title II of the Clean Water Act and under certain Appropriations Acts, and EPA-issued National Pollutant Discharge Elimination System (NPDES) permits for new sources subject to new source performance standards. The Agency is exempted by statute for actions taken under the Clean Air Act and for most Clean Water Act programs. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), requires EPA to comply only with the substantive, not the procedural, requirements of other environmental laws for on-site responses. In the case of other EPA programs, the courts have found EPA procedures to be "functionally equivalent" to the NEPA process and therefore these EPA programs are exempt from NEPA procedural requirements. Also, EPA voluntarily prepares EISs for a number of actions pursuant to a long-standing statement of Agency policy.

Exhibit 1 identifies EPA's major program areas and indicates which actions are subject to NEPA, which Congress has exempted from NEPA, which have been

found to be functionally equivalent to NEPA, and which receive NEPA-like analyses. This guidance is applicable solely to EPA programs and actions subject to NEPA and not those identified as "functionally equivalent" in Exhibit 1. However, this should not preclude its use as reference where "functionally equivalent" programs or actions processes may benefit from the information contained therein.

1.2.2 EPA Review of Proposed Actions Under Clean Air Act §309

As a result of §309 of the Clean Air Act, EPA has a key role in the overall implementation of NEPA. Specifically, §309 mandates that EPA "review and comment in writing on the environmental impact of any matter relating to duties and responsibilities granted pursuant to this chapter or other provisions of the authority of the Administrator, contained in any (1) legislation proposed by any federal department or agency, (2) newly authorized federal projects for construction and any major federal agency action (other than a project for construction) to which Section 4332(2)(C) of this title applies [subject to Section 102(2)(C) of NEPA], and (3) proposed regulations published by any department or agency of the Federal government. Such written comment shall be made public at the conclusion of any such review" (42 U.S.C. §7609(a)).

In conducting §309 reviews, EPA is further directed by the Presidential Memorandum that accompanied Executive Order 12898 to ensure that agencies fully analyze environmental effects of their proposed actions on minority and low-income communities, including human health, social, and economic effects. As a result of both §309 and the Presidential Memorandum, EPA is able to assist other federal agencies in evaluating proposed actions that are subject to NEPA by identifying possible environmental justice concerns that may result from such actions and by offering alternative solutions and mitigation measures for unavoidable impacts.

Although mention is made here of EPA's responsibilities under §309, this document is not intended to provide guidance for §309 reviews. EPA's §309 guidance should be used for that purpose. This guidance supplements the Council on Environmental Quality's *"Environmental*

Justice Guidance Under the National Environmental Policy Act" and is tailored to EPA's conduct in actions for which EPA must comply with NEPA and where EPA has jurisdiction as a cooperating agency. It does not provide guidance related to other federal agencies' actions or for EPA's review of other federal agencies' EISs.

1.3 Organization of this Guidance

The remainder of this guidance is organized as follows: **Chapter 2** describes key environmental justice terms and factors and the application of the key definitions and factors in the context of standard NEPA analyses; **Chapter 3** describes key steps in the NEPA process, including both EISs and EAs, where analyses of environmental justice concerns should be incorporated; **Chapter 4** discusses public participation approaches of direct relevance to minority and/or low-income communities; and **Chapter 5** provides a brief overview of methodological tools that can be used to identify and assess potential disproportionately high and adverse effects.

2.0 KEY TERMS AND FACTORS FOR CONSIDERATION IN EVALUATING ENVIRONMENTAL JUSTICE CONCERNS

The purpose of this section is to introduce key terms and concepts to heighten the EPA analyst's awareness of how disproportionately high and adverse effects may be identified. The discussion is based on guidance prepared by a task force of the Interagency Working Group on Environmental Justice (IWG). The IWG was created by Executive Order 12898 and is comprised of the heads (or representatives) of 17 departments and agencies.

The identification and analysis of disproportionately high and adverse human health or environmental effects on minority communities and low-income communities should occur throughout the NEPA process, from the initial phases of the screening analysis through the consideration and communication of all alternatives and associated mitigation techniques.

In conducting an EPA NEPA analysis that is sensitive to environmental justice concerns, the inter-disciplinary team

of EPA NEPA analysts should have an understanding of key terms central to environmental justice and should understand what factors need to be considered to ensure that all relevant concerns are identified and evaluated in a direct and explicit manner. The team should include experts familiar with available and appropriate public participation procedures and strategies and, where such concerns may arise, individuals familiar with the unique concerns of Native American Tribes and populations. Developing a keen sensitivity to potential environmental justice concerns and modifying the scope of the analysis can have a dramatic impact on whether environmental justice concerns are identified and addressed adequately and appropriately. Therefore, the EPA NEPA analyst must be sensitive to what issues and factors to look for to avoid the possibility that disproportionately high and adverse effects may be inadvertently missed, incorrectly characterized, or inappropriately minimized. So as to avoid potential oversights of environmental justice concerns, the EPA NEPA analyst should work closely with the affected community in drafting an EIS or EA, and where the community's concerns warrant, EPA should formalize this interaction (e.g., community advisory boards).

Appendix A includes the Council on Environmental Quality's (CEQ's) "Environmental Justice Guidance Under the National Environmental Policy Act" which incorporates the IWG-developed guidance on key terms in Executive Order 12898 that are pertinent to environmental justice analyses. That guidance was developed to assist federal agencies in conducting analyses of disproportionately high and adverse effects of their programs, policies, and activities. The guidance is not static but provides for informed judgment in every case; this means that EPA NEPA analysts will need to make careful decisions to ensure that environmental justice concerns are identified and addressed.

The remainder of this chapter is organized into two sections. The first section addresses terms that should be considered in identifying the existence of minority communities or low-income communities. The second section identifies factors that often are associated with disproportionately high and adverse effects, including cumulative and indirect impacts, on minority or low-

income members of the larger community. Methodological approaches for conducting analyses appear in Chapter 5.

2.1 Defining Minority and/or Low-Income Population

The purpose of this section is to assist the analyst in determining whether there is a minority community or low-income community that may be addressed in the scope of EPA's NEPA analysis.

2.1.1 Minority and Minority Population

The first part of the guidance on minority population provided by the IWG provides a numeric measure: over 50 percent of the affected area. The remainder of the guidance calls for the analyst to use his or her best judgment in evaluating the potential for EJ concerns. It is important that the EPA NEPA analyst consider both the circumstances of any groups residing within the affected area, as well as the percentage of the affected community that is composed of minority peoples.

Within its guidance, the IWG explains that a minority population may be present if the minority population percentage of the affected area is "meaningfully greater" than the minority population percentage in the general population or other "appropriate unit of geographic analysis." The term "affected area," although not defined by the guidance, should be interpreted as that area which the proposed project will or may have an effect on. The IWG guidance also advises agencies not to "artificially dilute or inflate" the affected minority population when selecting the appropriate unit of geographic analysis. Clearly, a key element here is the selection of the appropriate level of geographic analysis; that is, selecting a comparison population to which the population in the affected area will be compared to identify if there are "meaningfully greater" percentages. The selection of the appropriate unit of geographic analysis may be a governing body's jurisdiction, a neighborhood census tract, or other similar unit. This is done to prevent artificial dilution or inflation of the affected minority population. In an EPA NEPA analyses, the analyst should use the potentially affected population under various alternatives as a benchmark for comparison wherever possible. In addition, a simple demographic comparison to the next larger geographic area or political jurisdiction

should be presented to place population characteristics in context and allow the analyst to judge whether alternatives adequately distinguish among populations. For example, all preliminary locations for a project could fall in minority neighborhoods, therefore, a comparison among them would not reveal any population differences. Consequently, an additional alternative would be necessary to allow any disproportionately high and adverse effects to be identified.

The fact that census data can only be disaggregated to certain prescribed levels (*e.g.*, census tracts, census blocks) suggests that pockets of minority or low-income communities, including those that may be experiencing disproportionately high and adverse effects, may be missed in a traditional census tract-based analysis. Additional caution is called for in using census data due to the possibility of distortion of population breakdowns, particularly in areas of dense Hispanic or Native American populations. In addition to identifying the proportion of the population of individual census tracts that are composed of minority individuals, analysts should attempt to identify whether high concentration "pockets" of minority populations are evidenced in specific geographic areas.

The IWG guidance also advises agencies to consider both groups of individuals living in geographic proximity to one another, or a geographically dispersed/transient set of individuals, where either type of group "experiences common conditions" of environmental exposure or effect within the guidance provided for minority population. This can result from cultural practices, educational backgrounds, or the median age of community residents (*e.g.*, disproportionate numbers of elderly residents, children, or women of child bearing age may be more susceptible to environmental risks).

A factor that should be considered in assessing the presence of a minority community is that a minority group comprising a relatively small percentage of the total population surrounding the project may experience a disproportionately high and adverse effect. This can result due to the group's use of, or dependence on, potentially affected natural resources, or due to the group's daily or cumulative exposure to environmental pollutants as a result of their close proximity to the source. The data may show that a distinct minority population may be below the

thresholds defined in the IWG key terms guidance on minority population. However, as a result of particular cultural practices, that population may experience disproportionately high and adverse effects. For example, the construction of a new treatment plant that will discharge to a river or stream used by subsistence anglers may affect that portion of the total population. Also, potential effects to on- or off-reservation tribal resources (e.g., treaty-protected resources, cultural resources and/or sacred sites) may disproportionately affect the local Native American community and implicate the federal trust responsibility to tribes.[5]

The EPA NEPA analyst should look at each situation on a case-by-case basis to determine if there may be disproportionately high and adverse effects on a minority population.

The EPA NEPA analyst should make every effort to identify the presence of distinct minority communities residing both within, and in close proximity to, the proposed project, and to identify those minority groups which utilize or are dependent upon natural resources that could be potentially affected by the proposed action. Non-traditional data gathering techniques, including outreach to community-based organizations and tribal governments early in the screening process, may be the best approach for identifying distinct minority communities and/or tribal interests within the study area. See Chapter 4 for a discussion of public outreach techniques.

2.1.2 Low-Income Population

This guidance recommends that pursuant to the CEQ guidance, low-income populations in an affected area (that area in which the proposed project will or may have an effect) should be identified with the annual statistical poverty thresholds from the Bureau of the Census' Current Population Reports, Series P-60 on Income and Poverty. In conjunction with census data, the EPA NEPA analyst should also consider state and regional low-income and poverty definitions as appropriate. In identifying low-income populations, agencies may consider as a community a group of individuals living in geographic proximity to one another or set of individuals (such as migrant workers or Native Americans) where either type of group

experiences common conditions of environmental exposure.

As with the identification of minority communities, the level of aggregation of available data is an issue of concern when seeking to determine whether one or more low-income communities may be affected by a project. Also, as with minority communities, "pockets" of low-income individuals may be masked by aggregated data. The level of aggregation of data, as well as how current the available data are, should be taken into account by the EPA NEPA analyst.

Determining the existence and location of low-income and minority communities within the reaches of a projects' influence can be a difficult task. Several means of gathering this information are available; however, it is up to the EPA NEPA analyst to ascertain which techniques will best suit the project at hand. Further, the EPA NEPA analyst must be flexible and open to consider additional avenues which may be unique to select projects or geographic areas. The use of national decennial census data in depicting low-income/poverty and minority statistics is one of the most common methods used. While the census provides valuable information for the EPA NEPA analyst, there are often many gaps associated with the information. Therefore, it may be necessary for the EPA NEPA analyst to validate this information with the use of additional sources. The additional methods available in locating the populations of interest include contacting local resources, government agencies, commercial database firms, and the use of locational/distributional tools. (Please see Chapter 5 regarding the use of locational/distributional tools.)

Local resources should be sought for local and up-to-date knowledge of a given area and its inhabitants as well as a lead to other sources of information. Examples of local resources include: community and public outreach groups, community leaders, and state universities (i.e., economic departments).

State government agencies such as the Department of Economic Development, Planning and Development Department, State Minority Business Office, and State Enterprise Zone Offices are also valuable resources to contact. For example, if an area is designated as an

"enterprise zone", unique economic and demographic data may exist in that particular area, access to which could enhance the EPA NEPA analyst's ability to assess the economic situation of a given area.

Local resources and state governments can both be contacted for information regarding factors that are characteristic of low-income communities and which may assist in identifying these communities. These factors may include: limited access to health care, an inadequate, overburdened or aged infrastructure, and particular dependence of the community, or components of the community, on subsistence living (*e.g.*, subsistence fishing, hunting, gathering or farming). In some cases, these factors can be evaluated directly from traditional information sources. For example, the age and condition of water treatment facilities and presence of lead service lines should be available from municipal utilities. Outreach to community groups may be the most reliable data collection method in other cases, such as those where the degree to which the cultural and dietary habits of low-income or minority families and their economic condition dictate subsistence living. Consequently, where the community median household income may exceed that of the poverty line, conditions generally associated with low-income communities may be present, resulting in cumulative effects that may meet the threshold for environmental justice concerns.

Commercial database firms are often capable of tailoring census data information of human communities and income/poverty level to specified areas of geographic detail. For example, by manipulating specified census bureau tract data with customized buffer areas, statistics can be generated to accommodate current growth estimates from local government agencies or planning departments. Locational/distributional tools are also capable of determining the locations of certain human communities. Examples include maps, aerial photographs, and geographical information systems (GIS). Further explanations of these tools are presented in Chapter 5.

2.2 Considering Effects

This section discusses the term "disproportionately high and adverse human health or environmental effects" and

provides an overview of some factors that should be considered in assessing the presence of such effects. It also addresses how the concept of environmental justice plays in conducting cumulative and indirect impact analyses in support of NEPA.

2.2.1 Disproportionately High and Adverse Effects

Disproportionately high and adverse effects encompass both human health and environmental effects. The IWG's guidance suggests the need for the analyst to exercise informed judgments as to what constitutes "disproportionate" as well as "high and adverse." This, in turn, suggests some level of comparative analysis with the conditions faced by an appropriate comparison population. As noted in Section 2.1.1, alternatives need to be drawn so that the potentially affected populations under various alternatives are distinctive and allow disproportionality to be assessed.

2.2.2 Cumulative and Indirect Effects

EPA NEPA analyses must consider the cumulative effects on a community by addressing the full range of consequences of a proposed action as well as other environmental stresses which may be affecting the community. Cumulative impacts are defined in 40 CFR 1508.7, as "the incremental impact(s) of the action when added to other past, present, and reasonably foreseeable future actions...." For example, when considering a project that will have a permitted discharge to the surrounding surface waters, it may be of concern to populations who rely on subsistence living patterns (*i.e.,* fishing) and already receive public water through lead service lines; the cumulative effects associated with both the discharge and the lead service lines must be taken into account. In such cases, mitigation measures need to be developed and analyzed to reduce an adverse cumulative effect. In addition, minority populations and low-income populations are often located in areas or environments that may already suffer from prior degradation. EPA analysts need to place special emphasis on other sources of environmental stress within the region, including those that have historically existed, those that currently exist, and those that are projected for the future. Common variables of concern may include:

• Number/concentration of point and nonpoint release sources, including both permitted and non-permitted.

• Presence of listed or highly ranked toxic pollutants with high exposure potential (*e.g.*, presence of toxic pollutants included within EPA's 33/50 program).

• Multiple exposure sources and/or paths for the same pollutant.

• Historical exposure sources and/or pathways.

• Potential for aggravated susceptibility due to existing air pollution (in urban areas), lead poisoning, existence of abandoned toxic sites.

• Frequency of impacts.

Source data, including historical, existing, and projected sources, yielding projected effects in concert with that from the resulting proposed action should be analyzed with respect to minority or low-income receptors. As noted above, these include cultural, health and occupation-related variables such as:

• Health data reflective of the community (*e.g.*, abnormal cancer rates, infant and childhood mortality, low birth weight rate, blood-lead levels).

• Occupational exposures to environmental stresses which may exceed those experienced by the general population.

• Diets, or differential patterns of consumption of natural resources[6], which may suggest increased exposures to environmental pathways presenting potential health risk.

The EPA NEPA analyst may have difficulty in determining the point at which stress levels become too great, exceeding risk thresholds. This lack of a definitive threshold should encourage the EPA NEPA analyst to compare the cumulative effects of multiple actions with appropriate community, regional, state, or national goals, standards, etc. to determine whether the total effect is significant.

With respect to natural resources, analysts should look to the community's dependence on natural resources for its

economic base (*e.g.,* tourism and cash crops) as well as the cultural values that the community and/or Indian Tribe may place on a natural resource at risk. Further, it is essential for the EPA NEPA analyst to consider the cumulative impacts from the perspective of these specific resources or ecosystems which are vital to the communities of interest.

Several methods for determining cumulative effects are described within CEQ's January 1997 handbook entitled, "Considering Effects Under the National Environmental Policy Act." The EPA NEPA analyst may wish to consider these methods in assessing cumulative effects on low-income and/or minority communities.

In the process of determining future actions, for example, it is essential for the EPA NEPA analyst to apply judgment and experience, to go beyond the number of projects that are funded in the area, and predict which of the actions in the early planning stage have realistic potential to move forward. The EPA NEPA analyst should use the best available information from similar projects in the region and also consult with local government planning agencies which may have master development plans in the region. In addition, private land-owners and organizations may be willing to disclose their future land use plans.

Although cumulative effects analyses commonly involve assumptions and uncertainties, exhausting all applicable analyses will provide the greatest likelihood of accurately depicting the possibility of disproportionately high and adverse effects on low-income and/or minority communities. Analysts should be as resourceful as possible in addition to seeking information from traditional sources. Decisions should be supported by the best data currently available and/or the best data gathering techniques in conjunction with all appropriate analyses.

EISs and EAs must also address indirect impacts [40 CFR 1502.16(b), 1508.8(b) 1508.9], which are characterized as those that are caused by the action and are reasonably foreseeable, but that occur later in time and/or at a distance. Indirect effects include growth effects related to induced changes in the pattern of land use; population density and/or changes to infrastructure; or growth rates and related effects to the air, water and other natural systems, including ecosystems.

Increased urbanization may occur around a new facility due to increased employment or due to transportation system upgrades. This may result in disproportionately high and adverse effects to low-income communities due to increased air pollution, lower housing values, and reduced access to fishing/farming locations. In addition, recreational lands and water may be indirectly affected by government actions. In the case of activities potentially affecting Native Americans, potential impacts, both direct and indirect, can occur to sacred sites and/or other natural resources used for cultural purposes. For example, the loss of a sacred site, or other impacts to larger areas of religious and spiritual importance may be so absolute that religious use of the site abruptly ceases--a direct impact. However, discontinued use may result in other indirect impacts. Proposed actions may also result in business failures, and associated unemployment, erosion of tax bases, and reduced public services. These types of effects may be exacerbated for low-income communities and minority communities due to an inability to relocate, to travel long distances to find alternative means of employment, or to attract new industry or commerce.

The potential for indirect impacts to affect a community is best understood when the analytical team is thoroughly familiar with the local community. It is important that the EPA NEPA analyst gain a full understanding of potential cultural impacts to the community. This is best accomplished through direct communication using effective public participation and consultation. A discussion of public participation approaches appears in Chapter 4.

2.2.3 Environmental Exposure

Executive Order 12898 provides that environmental human health research, whenever practicable and appropriate, shall include diverse segments of the population in epidemiological and clinical studies, including segments at high risk from environmental hazards, such as minority and low-income populations and workers who may be exposed to substantial environmental hazards. The Executive Order further states that environmental human health analyses, whenever practicable and appropriate, shall identify multiple and cumulative exposures.

In addressing the term "environmental hazard" for the purpose of research, data collection and analysis provisions in the Executive Order, the IWGKey Terms guidance states that it is "a chemical, biological, physical or radiological agent, situation, or source that has the potential for deleterious effects to the environment and/or human health." The IWG points out that the factors that may be important in defining a *substantial*[7] environmental hazard are the likelihood, seriousness, and the magnitude of the impact. The IWG Key Terms provides guidance for "multiple environmental exposure" and "cumulative environmental exposure."

The EPA NEPA analyst should include individuals who are familiar with collecting and analyzing data that assesses the potential environmental and human health risks potentially borne by minority and low-income communities as a result of the project or activity. EPA NEPA analysts gain a better understanding of potential environmental risks to the community by directly using effective public participation and consultation techniques. An assessment of such potential risks should then be used to determine whether disproportionately high and adverse effects may be borne by minority communities or low-income communities.

2.3 Summary of Factors to Consider in Environmental Justice Analyses

This section provides an overview of many of the factors that should be considered when identifying and evaluating environmental justice concerns. Given the subjective nature of some of the elements that are important to environmental justice analyses, some consideration of the *factors* or characteristics that may lead to disproportionately high and adverse effects to a community may prove to be useful when conducting such analyses. EPA's Office of Environmental Justice points out that an understanding of the underlying factors that contribute to environmental justice concerns allows for a more thorough identification of the concerns and the development of more effective mitigation measures.

In focusing the identification of environmental justice concerns, the EPA NEPA analyst may approach the analysis of environmental justice from three vantage points: 1) whether there exists a potential for disproportionate risk;

2) whether communities have been sufficiently involved in the decision-making process; and 3) whether communities currently suffer, or have historically suffered, from environmental and health risks or hazards. The factors listed in this section are provided within the context of these three approaches for identifying potential environmental justice concerns and provide the EPA NEPA analyst with a starting point in determining what factors to consider in an environmental justice assessment. However, almost every situation will have its own nuances. As such, the EPA NEPA analyst should be prepared to apply these factors flexibly to fit a specific situation, just as the IWG guidance provided above may require judgments to ensure that communities are defined in a fair manner (See Exhibit 3 for Summary of Factors).

Exhibit 3. SUMMARY OF FACTORS TO CONSIDER IN ENVIRONMENTAL JUSTICE ANALYSIS

FACTORS ASSOCIATED WITH POTENTIAL EXPOSURE TO/AND RISKS FROM ENVIRONMENTAL HAZARDS

The general factors that should be considered include DEMOGRAPHIC factors, GEOGRAPHIC factors, ECONOMIC factors, and HUMAN HEALTH and RISK factors. For each of these, specific variables for consideration are listed.

DEMOGRAPHIC FACTORS

Demographic factors are one of the key components of environmental justice. Race, ethnicity, and low-income status are some of the primary considerations of the environmental justice movement. However, numerous other demographic factors also may play vital roles in an environmental justice assessment. These include, but are not limited to:

Population Age	Older or younger populations may be more susceptible to risks, when taking into account special health concerns of the elderly and potential for greater exposure in younger populations (*e.g.*, ingestion of soil). In addition, children's immature bodily defense systems may make them more susceptible to toxic effects.
Population Density	High population density may promote a synergistic effect between industrial pollutants and typical urban pollutants (*e.g.*, ground level ozone), especially if industry is located in close proximity (5 miles or less) to high density populations. Low population density may lead the NEPA analyst to underestimate the actual environmental harm to the affected population when conducting a risk assessment.
Population Literacy	If documents are technically complex and not adequately explained communities with lower levels of education may encounter difficulty in its ability to understand or sufficiently identify and interpret risk

	and other factors.
Population / Economic Growth	Rapid or severe changes in population or economic growth rate may result in potential impacts to existing community or public services and infrastructure. Changes in growth rate may include: (1) an increase in low-income or minority population(s) in an area (*e.g.*, migration), (2) high birth rates, and (3) cumulative impacts due to multiple sources of population increases.
GEOGRAPHIC FACTORS Certain communities may be at high risk from environmental hazards or exposed to substantial environmental hazards due to geographic factors that isolate them from other surrounding communities or that tend to allow pollutants to accumulate in the environment surrounding the community. Such factors include, but are not limited to:	
Climate	Weather patterns (*e.g.*, prevailing winds) that may concentrate pollutants in a certain area, allow pollutants to migrate, increase certain exposure pathways (such as respiration), or cause pollutants to behave in a manner that differs from that expected under normal weather conditions.
Geomorphic Features	Mountains, hills, or other surface features, natural or human in origin, that may affect pollutant dispersal and may focus or funnel pollutants in particular directions or to particular locations.
Hydrophic Features	Presence of surface water and/or aquifers that may provide drinking water, subsistence fisheries, cultural significance and use, and recreational use.
ECONOMIC FACTORS Economic factors can be divided into two categories: the economic condition of the individuals in the community in question, and the overall economic base of the community. The economic condition of the individuals in the population, if poor, may exacerbate risk factors and may preclude avoidance of risk factors. The economic condition of the community at large may result in situations that preclude the local government's ability to adequately protect the population or may promote the acceptance of disproportionately high and adverse effects. Such factors include, but are not limited to:	
Individual Economic Conditions **Income Level / Health Care Access**	This includes such issues as whether affordable or free quality health care is available and, whether any cultural barriers exist to seeking health care. Many low-income and/or minority communities lack adequate levels and quality of health care, often due to lack of resources or lack of access to health care facilities.
Infrastructure Conditions	Consideration should be given to whether existing infrastructure provides sufficient protection from adverse impacts (*e.g.*, protection of domestic water supply, especially if the community relies on

	public or non-public drinking wells or surface water; adequacy of sewage facilities) and the effect that new facilities may have on the ability of existing infrastructure to be reliable and provide adequate protection. In many low-income and/or minority communities, historic allocation of resources has resulted in inadequate infrastructure development and maintenance.
Life-Support Resources	This includes subsistence living situations (*e.g.*, subsistence fishing, hunting, gathering, farming), diet, and other differential patterns of consumption of natural resources. If a community is reliant on consumption of natural resources, such as subsistence fishing, an additional exposure pathway may be associated with the community that is not relevant to the population at large. Similarly, dietary practices within a community or ethnic group, such as a diet low in certain vitamins and minerals, may increase risk factors for that group.
Distribution of Costs	Consideration of the distribution of costs to pay for environmental projects to the extent that regulations and programs are paid for by user fees on necessary goods and services (e.g., sewer and water bills, garbage services, electric bills, gasoline taxes). These have a substantial negative effect on low-income families who must pay a disproportionate fraction of their income for these goods and services, the addition of user fees for another plant or facility may add to the disparate treatment of those individuals.
Community Economic Base **Industrial**	Reliance on polluting industries for jobs and economic development. If the community is reliant on polluting industries for jobs and tax revenue, there may be reluctance to take actions that would avoid risk to health and the environment at a cost to the industry. In addition, minority or low-income communities may not enjoy other benefits in proportion to the risks or impacts they bear.
Brownfields	Communities with low revenues may be unable to finance economic rehabilitation efforts that would improve the physical environment of a community.
Natural Resources	Reliance on natural resources for economic base (*e.g.*, tourism, crops; use of resources to create salable items, such as woven baskets among Native Americans; subsistence and commercial fisheries).
Other	Other indirect effects which a low-income or minority population, due to economic disadvantage, may not be able to avoid, that will have a synergistic effect with other risk factors (*e.g.*, vehicle pollution, lead-based paint poisoning, existence of abandoned toxic sites, dilapidated housing stock).
HUMAN HEALTH AND **RISK FACTORS**	

Evaluation of human health and risk factors relevant to environmental justice concerns may prove to be complicated when detailed technical analyses of risk factors and interaction of toxic chemicals are undertaken. However, the following include, but are not limited to, factors which allow for consideration of whether more detailed risk assessments or analyses specific to minority or low-income populations are appropriate:	
Emissions	Number of point and nonpoint sources of emissions including permitted and non-permitted (violations) releases.
Toxics	Presence of or exposure to highly toxic pollutants.
Exposures	Multiple exposure sources and/or paths for the same pollutant.
Pollutants	Exposure to multiple pollutants.
Pesticides	Exposure to pesticides by workers and to the misuse of pesticides.
Locations	Exposure through multiple locations (*e.g.,* workplace, home, school, ambient).
Concentrations	Exposure to emissions from concentrated locations of the same type of industry (or industries).
Health Data	Health data for population in question (*e.g.,* abnormal levels of cancers, asthma, emphysema, birth defects, low birth weight, infant and childhood mortality blood-lead levels asbestosis). This data could indicate historical hazards and health risks which, in concert with the effects of the proposed action could cumulatively or indirectly raise environmental justice issues.
Research Gaps	Research gaps (*e.g.,* subsistence consumption, demographics dietary effects, synergistic effects of chemicals).
Data Collection	Data collection/analysis reliability and validity.
FACTORS RELATED TO CULTURAL AND ETHNIC DIFFERENCES AND COMMUNICATIONS CONCERNS When determining whether communities have been afforded opportunity for meaningful involvement, broad factors for consideration include the following. Other considerations for public participation are discussed in Chapter 4 of the *" Guidance on Environmental Justice in EPA's NEPA Compliance Analyses."*	
Public Access	Whether community members have access to the decision-making process (*i.e.*, whether the community is fairly represented on commissions, boards, etc., and whether the community is fairly made aware of their role in the decision-making process).
Cultural Expectations	Cultural expectations and understanding of the decision-making process.
Meaningful Information	Access to meaningful and understandable information, such as clear presentation of what a facility produces, what pollutants it releases, how these are managed, and the potential risk to the population.
Job Security	Potential for fear within the community that participating in the process may jeopardize job security.

Literacy Rate	If a low literacy rate exists, consideration should be given to the clarity and accuracy of presentations to the community and whether non-written materials, such as videos, have been considered for use in presentations.
Translations	Consideration of non-English translations, both written and oral during community presentations or public meetings.
Community Representation	Consideration should be given to whether representatives were selected by community decree or by outside sources without proper consultation with the community.
Community Identification	Whether identification of minority and/or low-income communities took into account all potentially-impacted communities. If communities were geographically defined rather than culturally defined, certain communities that are impacted, given other cultural factors, may be unfairly excluded.
Indigenous Populations	In addition, when projects or activities may affect tribal lands or resources or Native American communities, the NEPA analytical team should include one or more analysts familiar with Native American issues and culture, and the Agency should formally request the affected Indian Tribe(s) to seek participation as a cooperating agency. Specific factors to consider in such situations include, but are not limited to: The trust responsibility to and treaties, statutes and executive orders with federally-recognized Indian Tribes. Effect of insufficient financial and technical resources for the development and implementation of tribal environmental programs.
FACTORS RELATED TO HISTORICAL AND POLICY ISSUES Environmental justice assessments may require looking at historical conditions, existing conditions, and the impact of future actions. Many of the factors discussed above, such as cumulative risk, will necessarily address this question, but certain other factors may also require consideration, including:	
Industrial Concentration	Concentration of industries that may create a high risk of exposure to environmental hazards for the community's economic base. Factors that may lead to such a result include government/industry arrangements that may reduce available public funding for adequate protection of low-income or minority populations (*e.g.*, tax breaks provided to certain industries to encourage the location of such industries to a certain area).
Inconsistent Standards	Non-uniformity in enforcement and site-selection standards across communities including methods for pursuing enforcement targeting, compliance actions and compliance initiatives.
Research Gaps	Research gaps and past data collection practices and validity. For

	example, data relevant to low-income communities may not be adequately collected and analyzed given the potential for inadequate resources within the community to collect and analyze data.
Program Gaps	Program gaps between tribal, state, and federal programs (such as asbestos worker protection programs) that may have subjected communities to high risk of exposure to environmental hazards. Such gaps include the lack of explicit Congressional authorization for tribal participation in and delegation/authorization of certain EPA programs and the sufficiency of funding and technical assistance for the development of tribal environmental programs.
Non-Inclusive Processes	Decision-making and documentation processes that were non-scientific, and/or non-inclusive in nature (*e.g.*, selection of community representatives by potentially-affected industry rather than by community decree).
Past Practices	Adequacy of past resource allocation practices.
Cultural Diversity	Past and present cultural diversity or lack thereof on decision-making boards, within agencies, commissions, etc.
Obligations	Adherence to prior agreements, such as treaties, statutes and executive orders with tribes. EPA should be particularly careful not to diminish tribal resources, including cultural and natural resources and treaty rights, without tribal concurrence and EPA should ensure the protection of such resources from environmental harm.

3.0 INCORPORATING ENVIRONMENTAL JUSTICE INTO THE NEPA PROCESS

3.1 Overview of the NEPA Process

A general framework for implementing NEPA requirements is presented in regulations (40 CFR Parts 1500 through 1508) promulgated by the Council on Environmental Quality (CEQ). Federal agencies, in turn, have developed their own rules for NEPA compliance that are consistent with the CEQ regulations while addressing the specific missions and program activities of each agency. EPA's regulations are found at 40 CFR Part 6. Over the past 25 years, the NEPA framework for environmental review of proposed federal actions has been substantially refined, based on further congressional directives, action by CEQ, and an extensive body of case law.

As stated in Section 1.0, an EIS is required for major federal actions significantly affecting the quality of the human environment. The basic analytical planning process

for EISs required under NEPA and its implementing regulations for assessing the environmental impacts that may result from a government action includes:

1. **Definition:** Define the purpose and need for the action.

2. **Screening:** Preliminary delineation of potential impacts.

3. **Scoping:** Outline proposed action; define objectives; define scope; identify decisions that need to be made; focus resources; initiate public participation.

4. **Affected Resources:** Define the resources that may be affected if the action meets the proposed objectives.

5. **Alternatives:** Identify and define practical alternatives for meeting objectives.

6. **Mitigation:** Identify possible mitigation measures to minimize or avoid potential impacts.

7. **Consequences:** Predict the environmental impacts and other consequences of the proposed action and alternatives.

8. **Decisions:** Make decisions regarding a course of action, including mitigation measures developed to address environmental effects threatened by proposed actions.

9. **Monitoring:** Observing, recording, and documenting mitigation measures to evaluate their effectiveness.

CEQ regulations (40 CFR Part 1502) dictate the process that federal agencies must follow for all EISs, except where compliance with the regulations would be inconsistent with statutory requirements or where agency procedures allow for exceptions for national security reasons. Public participation and involvement is required throughout the NEPA process, beginning with scoping.

Proposed actions predicted to present less significant impacts often are analyzed in environmental assessments (EAs). As mentioned in Section 1.0, EAs are important analytical tools, originally intended to aid in the determination of significance of the effects of a proposed action. Compared to EISs, there are fewer detailed regulatory requirements for EAs as to content, format or

public participation. The scale of EAs usually depends on the relative significance of the projected impacts.

Environmental justice issues encompass a broad range of impacts covered by NEPA, including impacts on the natural or physical environment and interrelated social and economic effects. The CEQ implementing regulations define "effects" or "impacts" to include those that are "ecological...aesthetic, historic, cultural, economic, social or health, whether direct, indirect or cumulative." In preparing EISs, NEPA requires EPA to consider both impacts on the natural or physical environment and interrelated social and economic impacts. In analyzing social and economic impacts, unique cultural aspects should also be reviewed. EPA, as a matter of policy, will consider interrelated social and economic impacts in EAs. This serves as a base to further the goals of the Executive Order. Environmental justice concerns may arise from impacts on the natural or physical environment, such as human health or ecological impacts on minority populations and low-income populations, or from inter-related social or economic impacts.

Moreover, EISs and EAs should document the extent to which environmental justice issues have been identified and addressed. The initial step in the analysis of potential effects is to assess whether there indeed will be potential physical or natural environmental impacts. If it is determined by the analytical team that there will be no environmental effects, and thus no disproportionately high and adverse effects, then this finding should be documented and no further analysis of effects is necessary.

If preliminary analysis indicates that there is a potential for environmental effects, then a more detailed assessment is conducted to estimate the level of those effects. There are occasions in which "grey areas" may be encountered. The EPA NEPA analyst may be unsure as to whether the environmental effects are *de minimis*, meaning when there are very small effects, or something greater than *de minimis* yet less than significant natural or physical impacts demanding an EIS. This guidance suggests that when the EPA NEPA analyst is unsure whether these environmental impacts are *de minimis* or something more than *de minimis* but less than significant, the EA should include an analysis of interrelated social and economic effects (and, as

described in Section 3.2 below, there now should be an EIS-like scoping process if the screening analysis indicates that there may be disproportionately high and adverse effects on minority and/or low-income communities). The EA should include socioeconomic analyses scaled according to the severity of the impacts.

Following an EIS or EA, the Agency must announce its decision in a Record of Decision (ROD) or a FONSI. The ROD, and where appropriate the FONSIs, should document the conclusion of the findings presented in the EIS or EA (i.e., whether the action will or will not have a disproportionately high and adverse effect on minority and/or low-income communities) and include a description of those mitigation measures that the Agency is committing to implement to reduce or avoid environmental consequences associated with the proposed action.

3.2 Incorporating Environmental Justice Concerns into this Process

One of the most important means by which EPA can ensure that disproportionately high and adverse effects on minority and/or low-income communities are identified and analyzed, is to "institutionalize" the process of identification and analysis. The next sections of this Chapter describe the screening-level analysis that begins the process, and how environmental justice considerations can be integrated into later steps and activities required under CEQ and EPA regulations.

As noted in Chapter 1, one effect of incorporating environmental justice considerations into NEPA analyses will be to more sharply focus these analyses. To do this, it is necessary to assess the distribution of environmental impacts demographically and/or geographically, as well as to assess the overall impacts to the affected communities. As described in Chapter 5, the analytical tools commonly used for analyzing potential impacts may have to be modified to allow this more refined focus. Overall, the evaluation of environmental justice concerns raises a number of issues related to "significance" and to other NEPA procedures. The discussion below describes several issues that are relevant to the determination of significance and the consequent level of analysis; also included are discussions of how consideration of such issues should

affect the determination and subsequent analyses. The analytical team should keep in mind that the presence of disproportionately high and adverse effects may or may not necessarily change the final decision, but will change the focus of the analysis and may result in additional mitigation measures.

3.2.1 Environmental Justice Screening Analysis

In preparing for any proposed action, one of the first actions is a preliminary delineation of potential impacts and of the potentially affected area. A screening for environmental justice concerns should be incorporated into this initial NEPA screening analysis. This section describes a two-step screening process, the results of which then guide subsequent actions related to environmental justice.

The first step in identifying potential environmental justice concerns should be a screening-level analysis to determine the existence of a low-income and/or minority population. Depending on the outcome, it may then be necessary to enhance public participation to gain a fuller understanding of the potential environmental justice issues (see Chapter 4), initiate development of alternatives and mitigation options, and/or initiate analyses to identify and assess disproportionately high and adverse human health or environmental effects (see Chapter 5). In addition, if the proposed project may affect tribal lands or resources, then EPA, in keeping with federal and EPA policies of government-to-government relations, will formally request that affected Indian Tribe(s) seek to participate as a cooperating agency.

The screening analysis should occur as soon as the proposed action is well understood, around the time planning for scoping begins for EISs and planning begins for EAs. Although neither the impacts nor the full area to be affected may be fully understood at this point, it is usually possible to make fair approximations. In the screening analysis, two questions should be addressed, as described below.

Question 1

Does the potentially affected community include minority and/or low-income populations?[8]

If yes, this should trigger both an enhanced outreach effort to assure that low-income and minority populations are engaged in public participation and analysis designed to identify and assess the impacts. Also, a positive response to this question should increase the team's sensitivity to the potential for cumulative impacts.

In general, census and other data should be used to characterize the population within the affected area, in terms of minority (*i.e.,* racial or ethnic), economic, and educational demographics. However, it should be noted that census data have been shown to be unreliable in some cases, in part because the level of aggregation may not offer a fine enough mesh to identify the existence of such communities. Also, census data are based on self-reporting. These data are not always consistent and are prone to undercounting minority populations and low-income populations due to a perceived reluctance for certain populations to divulge information (see Section 2.1.1). This is a screening-level analysis, so extensive efforts to validate census data should not be necessary at this stage, unless there is substantial uncertainty in (a) the answer to the screening question or (b) the ability to delineate the affected area at this early stage. Because the applicability of the census data can only be determined on a case-by-case basis, the EPA NEPA analyst should supplement this information with data from other sources. For example, additional information can be obtained from: local resources through questions, interviews, and research; geographical mapping system (GIS) or other similar overlay mapping systems; and economic impact analyses.

Environmental effects are often realized in inverse proportion to the distance from the location or site of the proposed action (i.e., the closer the population is to the action, the greater the potential impacts). As a result, an effort should be made to correlate the demographic analysis to the area most likely to bear environmental effects. On the other hand, depending on the resource affected, and the users of that resource, proximity to the site may not correlate with the likelihood of disproportionately high and adverse effects on minority communities or low-income communities.

It also is important during the initial screening stages to locate all minority communities or low-income

communities within the region surrounding a proposed location. The analytical teams should keep in mind that sometimes distinct minority communities or low-income communities may be geographically located within another minority community or low-income community. In some cases, a minority community or low-income community that is surrounded by another minority community or low-income community may bear disproportionately high and adverse effects compared to the surrounding communities. In addition, the EPA NEPA analyst should be sensitive to situations where the affected community represents the majority population over the extended area. For example, locations along the United States-Mexico border include entire counties where minority populations represent a majority of the population in the county. These areas are predominantly Latino, although when the county population is compared to the population of the entire state, the proportion represents a much smaller percentage of the population. Similarly, counties in the Mississippi Delta region represent areas where African Americans comprise a majority of the total population.

Question 2

Are the environmental impacts likely to fall disproportionately on minority and/or low-income members of the community and/or tribal resources?

A positive response should trigger both an enhanced outreach effort to assure that low income and minority populations are engaged in public participation and an analysis designed to identify impacts on both the larger population and on minority and/or low-income members of the population. A positive response could result from any of several factors, including the following:

Within a potentially affected area, minority and/or low-income populations could be unevenly distributed, thus subject to different levels or intensity of impacts than the larger population. This pattern should cause concern for cumulative impacts. An example would be subsistence dependence on an affected resource by members of a community.

The impacts may affect a cultural, historical, or protected (*e.g.*, treaty) resource of value to an Indian Tribe or a

minority population, even when the population is not concentrated in the vicinity.

If the answer to both screening questions is "no," then the environmental justice screening analysis should be documented in scoping notices and in EISs/EAs and RODs/FONSIs. In addition, certain unique cultural, geographic, or economic factors may exist within an area that could warrant additional investigation. Also, later information and analyses may show that the screening analysis was mistaken. Indeed, analysts should re-examine the screening questions (and the key factors identified in Chapter 2) at key steps in the NEPA process (*e.g.*, following scoping, in drafting the EIS/EA, in soliciting comments on draft EISs, in responding to comments, and in preparing RODs and FONSIs).

3.2.2 Environmental Justice and the Determination of Significance

CEQ regulations (40 CFR 1508.27) detail factors that should be considered in making a determination of whether a proposed action is significant, thereby requiring a "detailed statement" (*i.e.*, an EIS). Economic or social effects alone do not trigger an EIS [40 CFR 1508.14].

According to CEQ's *Guidance for Considering Environmental Justice under the National Environmental Policy Act*, the "...Executive Order does not change the prevailing legal thresholds and statutory interpretations under NEPA and existing case law. For example, for an EIS to be required, there must be a sufficient impact on the environment to be "significant' within the meaning of NEPA. Agency consideration of impacts on low-income populations, minority populations or Indian tribes may lead to the identification of disproportionately high and adverse human health or environmental effects that are significant and that otherwise would be overlooked." CEQ requires that significance be evaluated in terms of "intensity" or "severity of impact." Here too, the narrowed focus could affect the determination. Several factors that affect the evaluation of intensity are relevant to situations involving environmental justice issues. These include the degree of scientific controversy, uncertainty (since distributional analysis is relatively new in the NEPA context and this

introduces an element of uncertainty in impact assessment), and cumulative significance of related actions.

Environmental justice concerns should sensitize EPA NEPA analysts to the need to focus analyses on relevant contexts. Focusing the analysis may show that potential impacts, which are not significant in the NEPA context, are particularly disproportionate or particularly severe on minority and/or low-income communities. As mentioned previously, disproportionately high and adverse effects should trigger the serious consideration of alternatives and mitigation actions in coordination with extensive community outreach efforts.

3.2.3 Scoping and Planning

Scoping consists of identifying and defining the range of actions, alternatives and impacts that will be considered in an environmental impact statement (40 CFR 1508.25). During the scoping phase of the EIS process, EPA must consider connected, cumulative and similar actions to the proposed action, identify alternatives to the proposed action that may mitigate or avoid potential environmental consequences, and assess potential impacts (direct, indirect, and cumulative). A similar planning process is used for EAs.

The identification of environmental justice concerns and the incorporation of these concerns into the scoping analysis can have implications for the nature and extent of the scoping analysis, the EIS and/or the EA.[9] Indian Tribe representation in the process should be sought in a manner that is consistent with the government-to-government relationship between the United States and tribal governments, the federal government's trust responsibility to federally-recognized tribes, and treaty rights. This will help to ensure that the NEPA process is fully utilized to address concerns identified by tribes and to enhance protection of tribal environments and resources. As defined by treaties, statutes, and executive orders, the federal trust responsibility may include the protection of tribal sovereignty, properties, natural and cultural resources, and tribal cultural practices.

3.2.3.1 Incorporating Environmental Justice Concerns into EA Development

If the environmental justice screening analysis does not identify minority communities or low-income communities, and suggests no disproportionately high and adverse effects on those communities and/or on tribal resources, then the EA and FONSI should describe the analysis and note the conclusion.

If the initial screening analysis identifies an affected community that is minority and/or low-income or identifies a disproportionately high and adverse effect upon a minority community, and/or on tribal resources, or on a low-income community, then a smaller scale scoping analysis (than that undertaken for an EIS) should be conducted and some level of public participation should be designed and implemented to solicit community involvement and input, and to develop alternatives and mitigation measures. Mitigation measures should be developed and alternatives should be crafted so as to allow an evaluation of the relative disproportionality of impacts across reasonable alternatives. The EA also should include a comparative socioeconomic analysis that is scaled and tailored to evaluate the potential effects to the minority and/or low-income community (*i.e.,* in the case of environmental justice concerns, the EA should include socioeconomic analyses scaled according to the severity of the impacts).

3.2.3.2 Incorporating Environmental Justice Concerns in EIS Scoping

If the environmental effects of a project are deemed significant, the scoping notices (including the notice of intent for the EIS) should include a description of the results of the environmental justice screening analysis. If the results of the screening analysis are negative (i.e., any potentially affected population is not a minority community or low-income community and the effects are not likely to fall disproportionately on a minority and/or low-income community, and/or on tribal resources), then the scoping notice should state this finding and request additional information on whether there may be disproportionately high and adverse effects that were overlooked during the screening analysis.

If the environmental justice screening analysis concludes that there is a potential for disproportionately high and

adverse effects, then the EPA NEPA analyst should ensure that the EIS scoping process raises environmental justice concerns and that sufficient data and information are generated to evaluate these potential effects. Prior to the full-scale scoping process, public outreach strategies should be developed and implemented. The public participation process should be used to define and evaluate environmental justice concerns by:

Consulting with community leaders and members of the surrounding communities to seek their assistance in identifying all minority and/or low-income communities that may be affected by the proposed action.

Consulting with officials in tribal, state and/or local government agencies over the environmental and human health concerns within the region and who may be familiar with the demographics of the affected populations. Where environments of Indian tribes may be affected, agencies must consider pertinent treaty, statutory or executive order rights and consult with tribal governments in a manner consistent with the government-to-government relationship.

Soliciting information from the local community on potential environmental justice issues through public participation efforts (see Chapter 4 for a discussion of public participation).

• Soliciting public comment on environmental issues through formal public notice and comment procedures tailored to the community (see Chapter 4).

• If the proposed activity is deemed significant to warrant the development of an EIS, or if the community has raised significant concerns to be addressed in an EA, EPA should establish a community advisory board to work with EPA in the development of the respective NEPA documents.

The public participation efforts designed as part of the scoping effort for an EIS should clearly describe any environmental justice concerns identified by EPA, and should specifically ask the public to suggest alternatives and mitigation measures aimed at reducing or avoiding disproportionately high and adverse effects. The Agency also should design comparative socioeconomic, environmental and health analyses of all reasonable

alternatives and mitigation measures that are tailored and/or scaled to evaluate the impacts to the affected minority and/or low-income community and/or tribal resources.

3.2.4 Identification of Affected Resources

CEQ regulations state that an EIS is required only when there is a significant impact on the physical or natural environment. Notwithstanding, early in the EA and/or EIS process, the EPA NEPA analyst should identify the physical environment and all natural resources that could be potentially affected by the proposed action and by alternative actions. The EPA NEPA analyst should develop a full understanding of baseline demographic, socioeconomic, and environmental conditions so that a comprehensive assessment of the types of impacts that may be imposed upon all human and natural resources (*e.g.,* air, water, soils, wildlife) can be conducted and an understanding of how these impacts may translate into human health concerns can be developed. For a detailed discussion on how effects to human health and natural resources might be determined, please reference Section 2.2.

To account for potential environmental justice concerns, EPA NEPA analysts should be sensitive to identifying whether affected resources are used by a minority or low-income community. In addition, analyses of potential effects on all surrounding resources should be focused narrowly or specifically toward how potential effects to these resources may translate into disproportionately high or adverse human health and/or environmental effects on minority and/or low income communities.

The EPA NEPA analyst should use all means available to identify particular natural resources that, if affected by the proposed action, could have a disproportionately high and adverse effect on minority and/or low-income communities. In particular, natural resources that support subsistence living (*e.g.*, hunting, fishing, gathering) should be identified. In addition, Indian Tribes may have treaty-protected resources on or off reservation lands and may hold some natural resources sacred due to religious beliefs and/or social/ceremonial ties. Alternatives and mitigation measures should be explicitly solicited from the affected community early in the process, such as during scoping.

Throughout the process, but especially beginning in this phase, the Agency should provide affected communities with technical assistance to ensure that the communities thoroughly understand the proposed action and have meaningful participation and input. All resources that could be affected should be thoroughly developed and documented. A discussion of all findings should be shared with potentially affected communities during public participation phases of the NEPA process to ensure full disclosure and to solicit additional public comment and input.

3.2.5 Identification of Alternatives

NEPA and the CEQ regulations require the identification and development of a reasonable array of alternatives. In addition, CEQ requires that all reasonable alternatives, including a "no action" alternative, must be analyzed rigorously and objectively. The selection of potential alternatives should begin early in the evaluation and, in fact, should be part of the scoping process. In addition, if environmental justice issues are identified, then alternatives should be drawn so as to allow an assessment of the disproportionate nature of the effects, as well as the magnitude of the effects, on the communities of concern.

An evaluation of potential environmental justice issues should be conducted for all reasonable alternatives. In addition, for each alternative that may result in potential environmental justice concerns, mitigation measures aimed specifically at those impacts should be identified and analyzed. The results of all analyses of environmental justice issues, including study results that identify no environmental justice issues, should be described fully in scoping documents, EISs and EAs. All results should be fully disclosed during public participation procedures, and public comment and input on the analyses and conclusions should be solicited. Chapter 2 provides an overview of the factors that should be evaluated to identify and define potential environmental justice concerns. These factors will also be helpful in understanding the need for mitigation or additional alternatives and identifying mitigation or alternative options.

The EPA NEPA analyst should keep in mind that the goal of identifying and developing alternatives for mitigating

disproportionately high and adverse effects is not to distribute the impacts proportionally or divert them to a non-minority or higher-income community. Instead, alternatives should be developed that mitigate or avoid effects to both the population at large and any disproportionately high and adverse effects on minority or low-income communities. In other words, the goal of developing reasonable alternatives is not to move the impacts around, but to identify viable alternative actions that meet program goals and avoid or reduce the environmental, socioeconomic, human health and/or ecological effects associated with the preferred action. Generally, the types of alternatives that may potentially lead to the avoidance or reduction of effects include: a) the identification of alternate locations or sites where impacts to susceptible populations or environments will be avoided; b) altering the timing of planned activities or periodic emissions to account for seasonal dependencies on natural resources; c) the adoption of pollution prevention practices and policies to reduce or mitigate emissions and/or impacts; d) reducing the size or intensity of an action; and e) taking no action.

3.2.6 Prediction of Environmental Consequences

CEQ regulations require government agencies to identify, predict and describe reasonably foreseeable beneficial as well as adverse changes to existing conditions that may result from implementing either the proposed action or alternative actions. Impacts across alternatives must be compared. The prediction and description of potential disproportionately high and adverse effects must begin during the screening and scoping stages of the process, as noted above. Throughout the NEPA process, environmental justice concerns should be identified, disclosed, and discussed with affected communities.

In preparing an EIS or EA, ecological and human health risk assessments are conducted to identify and evaluate potential environmental and human health impacts that may be imposed. In addition, interrelated socioeconomic impacts that would result from a proposed action and alternatives are analyzed. Chapter 5 provides an overview of the types of analyses and analytical tools that may be used to analyze these issues and approaches that may be appropriate to assess disproportionately high and adverse

effects. Again, throughout the development and public disclosure of EPA NEPA analyses and findings, full discussions of the analytical process undertaken to identify environmental justice concerns and all findings and conclusions should be disclosed to and discussed with all affected and interested parties.

In evaluating the environmental impacts of the proposed action and alternative actions in an EIS, CEQ regulations (40 CFR 1508.25) require EPA to consider: three types of actions (connected actions, cumulative actions, and similar actions); three types of alternatives (no action, other reasonable course(s) of actions, and mitigation measures not in the proposed action); and three types of impacts (direct, indirect, and cumulative). Environmental justice concerns should be identified and analyzed within the context of all actions, alternatives and impacts. Exhibit 4 provides examples of how environmental justice issues could arise and/or be considered for each of these variables.

3.2.7 Mitigation Measures

Regulations require that mitigation measures be developed to address environmental effects, including cumulative impacts, threatened by proposed actions (40 CFR 1502.14(f) and 1502.16(h)). In addition, mitigation measures should be developed specifically to address potential disproportionately high and adverse effects to minority and/or low-income communities. When identifying and developing potential mitigation measures to address environmental justice concerns, members of the affected communities should be consulted. Enhanced public participation efforts should also be conducted to ensure that effective mitigation measures are identified and that the effects of any potential mitigation measures are fully analyzed and compared (see Chapter 4). Mitigation measures may include a variety of approaches for addressing potential effects and balancing the needs and concerns of the affected community with the requirements of the action or activity. For example, potential mitigation measures for addressing disproportionately high and adverse effects could include:

1. Reducing pollutant loadings through changes in processes or technologies.

2. Reducing or eliminating other sources of pollutants or impacts to reduce cumulative effects.

3. Planning for and addressing indirect impacts prior to project initiation (*e.g.*, planning for alternative public transportation alternatives if the project may result in increased population growth).

4. Providing assistance to an affected community to ensure that it receives at least its fair (i.e., proportional) share of the anticipated benefits of the proposed action (*e.g.*, through job training, community infrastructure improvements).

5. Relocating affected communities, upon request or with concurrence from the affected individuals.

6. Establishment of a community oversight committee to monitor progress and identify potential community concerns.

7. Changing the timing of impact-causing actions (*e.g.*, noise, pollutant loadings) to reduce effects on minority communities or low-income communities.

8. Conducting medical monitoring on affected communities and providing treatment or other responses if necessary.

If mitigation measures are determined to be necessary to reduce disproportionately high and adverse effects on minority and/or low-income communities, and/or tribal resources, then the measures should be committed to in the FONSI or ROD. This provides an additional avenue for public notice and involvement. Other steps that can be considered to ensure that mitigation measures are effective and are implemented include the following:

• Establishing the mitigation measure as a requirement in the permit or authorizing document.

• Requiring financing at the outset of the project for both implementing the measure and monitoring its effectiveness. Ensure clearly defined monitoring guidelines are in place.

• Requiring monitoring reporting, which should be made available to the public.

• Identifying clear consequences and penalties for failure to implement effective mitigation measures.

3.2.8 Decisions

The two NEPA decision documents identified in CEQ regulations are: 1) a ROD following an EIS and, 2) a FONSI following an EA. All EPA NEPA decision documents should include a concise summary of all steps undertaken to identify environmental justice concerns and the results of those steps. In cases where environmental justice concerns are identified, the decision documents should fully discuss these concerns, explain all alternatives and mitigation options that were analyzed, and explain how environmental justice concerns factored into the decision. In cases where effects to tribal lands or resources have been identified and the Indian Tribe and EPA disagree as to the preferred alternative or mitigation measures, the Indian Tribe may request that the EPA initiate a dispute resolution process to resolve this conflict. In addition, public participation efforts related to environmental justice concerns should be documented in the decision document. Finally, mitigation measures that are evaluated, disclosed to the public, and chosen in conjunction with the alternative to be implemented should be identified and discussed. If no concerns are identified, this finding should be stated along with the basis of EPA's conclusion.

4.0 PUBLIC PARTICIPATION

Adequate public participation is crucial to incorporating environmental justice considerations into EPA's NEPA actions, both to enhance the quality of the analyses and to ensure that potentially affected parties are not overlooked and excluded from the process. Public participation under NEPA involves two-way communications, with EPA receiving information, comments, and advice, as well as disseminating information on possible approaches, analyses, and decisions. This is particularly important when there are potential environmental justice issues involved. To sufficiently and adequately address potential environmental justice concerns and communicate with potentially affected communities, the EPA NEPA analyst should include one or more persons who are familiar with environmental justice issues and appropriate communications strategies. It is important that EPA take

steps to encourage and facilitate more active participation by low-income communities and minority communities in its NEPA process. This goal can be accomplished through careful identification of target audiences and aggressive community outreach beyond the traditional forms.

There are established procedures for public participation in NEPA actions and decision-making processes (as in other federal actions). However, these procedures have not always been successful in informing or gaining participation by minority communities and low-income communities. Although they may be most affected, they may be the least informed, simply because of the means of communications used; this can be for any number of obvious reasons, such as language, culture, educational level or geographic location. In most cases, relatively simple approaches--well within the purview of "standard" public participation techniques--can overcome most barriers to informing and seeking involvement of interested or affected communities. This in turn can ensure that federal decisions are consistent with Executive Order 12898 and enhance the actual and perceived fairness of federal actions.

The first subsection below briefly describes public participation that is required during the NEPA process by CEQ and EPA regulations. The next subsection then identifies a number of the special concerns and unique issues that may arise in addressing environmental justice issues, and identifies several mechanisms that may be used in EPA's NEPA process to address those special concerns and issues.

4.1 Public Participation Under NEPA

Public participation is one of the hallmarks of NEPA, and is reflected in CEQ's and EPA's NEPA regulations. According to 40 CFR 6.400(a), "EPA shall make diligent efforts to involve the public in the environmental review process...." There are several clearly defined steps in public participation under NEPA, and these are described below.

Scoping. CEQ regulations require "scoping" following the publication of a notice of intent to prepare an EIS, but before the EIS is prepared. CEQ regulations define scoping as "an early and open process for determining the scope of

issues to be addressed and for identifying the significant issues related to a proposed action" (40 CFR 1501.7). In general, scoping has three broad purposes: identifying public and agency concerns with a proposed action, defining issues and alternatives to be examined in detail, and saving time by ensuring that relevant issues are identified early and drive the analyses (see 40 CFR 1500.4(g), 1500.5(d)). A public meeting is held during scoping, with notice of the meeting made in the *Federal Register*, local newspapers, and utilizing other means of announcing public meetings, depending on case-specific circumstances.

Scoping for EAs is not addressed in either CEQ or EPA regulations. In practice, EA scoping can range from a process more or less identical to that used for EISs, to relatively minimal involvement of outside parties.

CEQ has indicated that the scoping process ends "once the issues and alternatives to be addressed in the EIS have been clearly identified," usually "during the final stages of preparing the draft EIS..." (CEQ "Guidance Regarding NEPA Regulations"). It is emphasized that public participation does not end here, but continues throughout the NEPA process, as described below, and even beyond.

Public review of EISs and EAs. As with scoping, CEQ and EPA NEPA regulations clearly specify the means by which the public is involved in reviewing draft and final EISs. EPA regulations require at least one public meeting on all draft EISs (40 CFR 6.400(c)). The meeting is generally announced in the *Federal Register* and in local newspapers and by other means. Regulations also provide other means of soliciting comments and information. Comments must be solicited from other appropriate federal, tribal, state, and local agencies, and from the public, specifically including a request for comments from "those persons or organizations who may be interested or affected" (40 CFR 1503.1(a)(4)).

EPA then has to consider and address all comments received on the draft EIS in preparing the final EIS, and final EISs must include responses to comments. As with draft EISs, final EISs are noticed in the *Federal Register* and elsewhere. Again, interested parties may submit comments on final EISs prior to EPA's final decisions.

EAs must be made available to the public (40 CFR 1506.6: C.E.Q. 40 Questions, #38). A combination of methods may be used to provide notice of availability; the methods should be tailored to the needs of particular cases. Traditionally there has been limited public involvement before and during EA preparation by EPA unless there is a question of significance (*i.e.,* some question as to whether an EIS is necessary) or some particular public interest.

Public review of RODs and FONSIs. Records of Decision on EISs must be disseminated to all those who commented on the draft or final EIS (40 CFR 6.400(e)). No public review is required prior to or after issuance of the ROD. Findings of No Significant Impact on EAs, in contrast, must be made available for public review before they become effective (40 CFR 6.400(d)), and this involves at least local notice and advertising. The FONSI and "attendant publication" must state that comments disagreeing with the decision may be submitted, and any such comments must be considered by EPA (40 CFR 6.400(d)).

4.2 Mechanisms to Enhance Participation

The public participation provision in Executive Order 12898 and its accompanying memorandum are designed to ensure that there is adequate and effective communication between federal decision makers and affected low-income communities and minority communities. This is consistent with the NEPA mandate to involve the public. The involvement of low-income communities and/or minority communities, however, presents some challenges to what has come to be the "normal" pattern of formal public participation under NEPA. In order to establish trust with all types of stakeholders, interaction with the affected community should:

- Encourage active community participation.

- Recognize community knowledge.

- Utilize cross-cultural formats and exchanges.

In all cases where EPA's initial screening indicates that there is a potential for disproportionately high and adverse effects on low-income and/or minority communities, the

Agency should make a concerted effort to identify stakeholders in the affected community and include the following groups and organizations in their outreach efforts:

- Environmental organizations and agencies
- Minority businesses, associations and trade organizations
- Civic associations and public interest groups
- Grassroots/community-based social service organizations
- Federal elected officials and agencies
- Homeowners' or tenants' associations, neighborhood watch groups and resident organizations
- Labor unions and organizations
- State and local elected officials and agencies
- News media, the Internet and other electronic media
- Tribal governments and Tribal organizations
- Religious groups and organizations
- Libraries, vocational and other schools, colleges and universities
- Medical community
- Legal aid providers
- Rural cooperatives
- Civil rights organizations
- Senior citizen's groups

Other sources of advice are ethnic and cultural-based environmental justice networks (*e.g.*, Indigenous Environmental Network, Southwest Network for Environmental and Economic Justice, Southern Organizing Committee). The *People of Color Environmental Groups*

Directory[10] is a valuable major source of information on such local groups and individuals. Similarly, Historically Black Colleges and Universities, Tribal Colleges and Universities or other higher education institutions located in areas with or serving predominantly minority or low-income areas, may be able to assist EPA in designing (and participating in) public participation strategies. Exhibit 5 identifies a number of particular communications challenges and possible approaches to overcoming these challenges in addressing environmental justice issues. These should be supplemented by case-specific advice--on challenges and on solutions--that are solicited from local experts and others familiar with both the proposed action and the affected community.

Exhibit 5. Communications Issues of Particular Concern in Low-Income and/or Minority Communities

Challenge	Possible Approaches to Overcoming
Language or Communication barriers	• Provide assistance to hearing or sight impaired individuals • Provide simultaneous translation of meetings • Use local translators where possible • Translate key documents in entirety (notices, summaries, etc.) • Establish "comment line" (*e.g.*, 800 number) for callers to leave recorded comments • Advertise meetings/process in alternative-language medium • Design communication strategy to reach all segments of population • Use facilitated meeting rather than conventional stand-up comments to encourage comments
Distance to meeting or inconvenient access (e.g., rural or cross-town)	• Arrange for "comment line" (*e.g.*, 800 number) to provide remote access to meeting or to allow callers to leave recorded comments • Arrange for telephone tie-in from several locations (*e.g.*, from several schools, religious centers)

	• Hold series of shorter meetings (down to 1-2 hours each) in multiple locations • Arrange for alternative transportation (possibly through proponent) • Ensure location is accessible to public transportation and identify itinerary in notices • Use local cable-channel broadcast with telephone call-in • Have proponent provide transportation vouchers • Seek advice of local groups/individuals • Arrange for satellite link-up (perhaps funded by proponent)
Unfamiliar surroundings (government buildings, luxury hotel, etc.)	• Use schools or other local facilities including religious centers, churches, temples, mosques • Have several smaller decentralized meetings, including open-air meetings (possibly with tent backup) in season • Seek advice from local groups/individuals • Use local facilitator • Establish "comment line" (*e.g.,* 800 number) for callers to leave recorded comments or to participate from remote locations
Outside normal EPA communications loops (i.e., *Federal Register*, newspapers)	• Use pro-active approach to identify stakeholder (both groups and affected individuals). Consult with local advocates/public interest groups to identify outreach mechanisms and refer to the *People of Color Environmental Groups Directory.* • Disseminate information through alternative media (neighborhood organization newsletters, religious centers, fliers, local cable access channel, local radio broadcasts, etc.). • Co-sponsor public meetings with local community groups to nurture trust and credibility. • Make announcements to those on the mailing list; make follow-up phone calls to encourage attendance. • Direct consultation with tribal governments and public

	meetings at tribal facilities or on/near tribal lands.
Format of Meetings	• Use town hall type meetings. • Avoid "panel of experts" • Use small focus-group seminars or workshops. • Use community "experts" and comments as part of communication strategy • Seek advice of local groups. • Use a trained facilitator who is sensitive to environmental justice issues.
Schedule conflicts (i.e., conflict with working hours, working days)	• Conduct personal interviews using audio or video recording devices • Hold after-hours and/or weekend meetings or sessions • Hold meetings on successive days • Hold multiple shorter meetings at diverse times/days • Establish "comment line" (*e.g.,* 800 number) for callers to leave recorded comments • Arrange for child-care (possibly funded by proponent)
Technically complex issues	• Provide sufficient background explanations beyond the usual means • Use plain language in meetings and printed material • Seek advice of local groups/individuals • Provide hands-on demonstrations/participation (*e.g.,* tours of similar facilities/locations) • Use visual presentations (*e.g.,*pictures, videos) • Provide two-way communication - Q & A • Use background summary reports, fact sheets, and abstracts • Provide technical and/or financial assistance to community, local organization, and/or tribal government to review,

	evaluate, and comment on the NEPA documents and provide meaningful input throughout the NEPA process.
Trust	• Clearly present goals of NEPA, the proposed action, the public involvement process, and what is expected to be gained from the process • Do not oversell: present uncertainties and limitations • Goals should be written and in clear language • Present experiences and track record, successes and failures

EPA-anticipated impacts and community perceptions of those impacts (and their fairness) can be very different, so both must be considered. When perceptions are the concern, an effort to involve and inform the community can go a long way toward building confidence that EPA's analyses and actions are well-intended and balanced. When actual impacts (i.e., disproportionately high and adverse human health or environmental effects) are the concern, the participation can serve to educate the Agency and help identify the means to identify alternatives and/or mitigate the impacts.

Although EPA and CEQ public participation regulations focus primarily on public meetings, there are other mechanisms that can also facilitate public input. Once community leaders and stakeholders have been identified and a dialogue established, a mailing list should be assembled so that information can be sent to this group, as well as formal announcements of a public meeting.

Another mechanism for providing information to the public is the establishment of information repositories which are accessible to members of the affected community. Locations can include libraries, churches, community centers, etc. Technical documents should contain a summary written to the lay public and translated, if necessary, into the dominant language of the affected community.

Meaningful public participation is based on the proposition that people should have a say in decisions which affect their lives in a significant way. Thus, for the public participation process to be effective, it must:

• Seek out and facilitate the involvement of those potentially affected;

• Contain the implicit commitment by decision makers to seriously consider the input of the public; and

• Communicate to participants how their advice was or was not utilized.

Minority communities and low-income communities are no different than any other in that there are nearly as many opinions as there are people. Thus, it is important not to focus exclusively on one mechanism (or one person or one group) for disseminating or soliciting information. Rather, it is important to use as many avenues as possible to solicit participation and to disseminate information. For example, when there are formal or informal representatives that purport to speak for a wider population, it is always advisable to seek divergent opinions.

Dr. Robert Bullard, Director of the School of Arts and Sciences at Clark Atlanta University, provides a framework for public participation when addressing environmental justice concerns during the NEPA process. Dr. Bullard points out that effective public involvement strategies have four common characteristics: inclusiveness, representation, parity, and communication. Inclusiveness refers to the assurance that all affected communities and stakeholders are represented and involved in the decision-making process. In terms of representation, he points out that it is crucial that the persons who are representing a specific community or stakeholder group truly reflect that community's, stakeholder's, and constituent's views, values, and norms. Parity involves all stakeholder groups having equal opportunity and capacity to provide input and full participation, as well as an equal voice in the decision-making process. Dr. Bullard further points out that an effective communications strategy accounts for different groups weighing and acting upon government actions and policies differently. An effective communications strategy recognizes, respects, and values cultural diversity of communities and stakeholders that represent a specific race, ethnic group, gender, age, geographic region, and a host of other characteristics.

As mentioned above, a recommended approach to ensure adequate public participation by minority and/or low-income communities when the screening analysis indicates there may be disproportionately high and adverse effects is to include a person familiar with environmental justice public participation issues on the "project review team." CEQ "Guidance Regarding NEPA Regulations" recommends that an interagency project review team be used when appropriate, with the team functioning as a source of information, a coordination mechanism, and an expert review team. When environmental justice issues must be faced, the review team should consult with the local community (including but not limited to organized groups concerned with environmental justice) during and following scoping, and should provide specialized expertise to EIS preparers.

The following are additional mechanisms for enhancing participation in the NEPA process: 1) allow public review of RODs; 2) government-to-government consultation with tribal governments, including formal requests for Indian Tribes to seek participation as cooperating agencies; 3) Community Advisory Boards for the development of NEPA documents; 4) community consultants; and 5) technical assistance to affected communities to enhance understanding of proposed action, technical documents, and full range of potential alternatives and mitigation measures.

In general, the effort expended in actively soliciting community involvement after the initial screening process should reflect the potential significance of the effects. As noted above, however, there should be some effort to communicate with stakeholders in all cases, including EAs, where the screening analysis identifies potential disproportionately high and adverse effects. Although the health or environmental impacts analyzed in EAs may not be "significant," from the NEPA standpoint, they may be perceived as significant by affected parties. Although this concern would not trigger an EIS, it should trigger more EIS-like scoping and public participation prior to and following EA preparation. To the extent practicable and consistent with regulations, an EIS-like public participation process should be undertaken for EAs when social or economic impacts will be or are perceived to be substantial, even when the impacts are not expected to be significant.

5.0 METHODS AND TOOLS FOR IDENTIFYING AND ASSESSING

DISPROPORTIONATELY HIGH AND ADVERSE EFFECTS

A fundamental step for incorporating environmental justice concerns into EPA NEPA compliance activities is identifying minority and/or low-income communities that may bear disproportionately high and adverse effects as a result of a proposed action. Once these minority and/or low-income communities are identified and located, the potential for disproportionately high and adverse effects to these communities must be assessed. It is important to understand where such communities are located and how the lives and livelihoods of members of these communities may be impacted by proposed and alternative actions. Minority communities and low-income communities are likely to be dependent upon their surrounding environment (*e.g.,* subsistence living), more susceptible to pollution and environmental degradation (*e.g.,* reduced access to health care), and are often less mobile or transient than other populations (*e.g.,* unable to relocate to avoid potential impacts). Each of these factors can contribute to minority and/or low-income communities bearing disproportionately high and adverse effects. Therefore, developing an understanding of where these communities are located and how they may be particularly impacted by government actions should be a fundamental aspect of the EA and EIS development process.

Currently, EAs and EISs generally evaluate and compare potential environmental, ecological, economic and/or human health risk impacts among and between broadly defined affected areas and populations. Potential impacts to smaller populations, individual communities, neighborhoods, census tracts, or environments (*e.g.,* single lake or watershed within a larger affected area) are not generally isolated, or disassociated from total impacts.

Minority and/or low-income communities are often concentrated in small geographical areas within the larger geographically and/or economically defined population center targeted for study. Minority communities and low-income communities may comprise a very small percentage of the total population and/or geographical area. Therefore,

the assumptions and inputs used in conjunction with traditional analytical tools for studying potential impacts under NEPA, and the results of the analyses, may not fully reflect the impacts that may be borne by these smaller communities or populations. An analysis of disproportionate impacts will develop an understanding of how the total potential impacts vary across individual communities. This allows analysts to identify and understand what portion of the total impacts may be borne by minority or low-income communities, to assess whether they are disproportionately high and adverse, and to develop alternatives and mitigation measures if necessary.

As described in Chapter 3, the first step in identifying the potential for environmental justice concerns is to characterize the population affected by the proposed action in terms of racial and ethnic composition and in terms of relative income distribution. The composition of the population should then be compared to the characteristics of the population (*e.g.*, percentage of minority populations residing near a proposed project versus the percentage of minority populations located within a single or multiple-county area surrounding the proposed project). Populations surrounding the proposed project should be characterized in terms of income distribution levels, as well as in terms of racial and ethnic diversity.

Many of the potential effects that may be borne by minority and/or low-income communities may be analyzed or assessed using the same analytical tools that are currently used in the development of EAs and EISs. However, once a potential environmental justice issue is identified, these tools may need to be modified or more likely, the scope of the analyses may need to be narrowed to focus on a smaller affected area or population.

Several types of analytical tools are currently available and are being refined and/or modified to assist analysts and decision makers in identifying potential environmental justice concerns and assessing potentially disproportionately high and adverse effects on minority and low-income communities. The following sections provide an overview of some of the available tools and the types of analyses that may be useful for identifying and assessing disproportionately high and adverse effects (by evaluating both total effects and effects on a smaller scale). It is not an

exhaustive listing of available tools, since many tools for identifying and assessing environmental justice concerns are still being developed, and it is not meant to promote or endorse one type of tool or analysis over any other. The application of any tool is dependent upon the type of study, the particular attributes of the area under study, and the data available to undertake the study.

5.1 Locational/Distributional Tools

Maps, aerial photographs, and geographical information systems (GIS) can be used to locate geographical areas where potential environmental justice issues may exist. Local maps and aerial photographs may provide a "snap shot," or general overview, of the locations of minority or low-income populations or communities and the proximity of the proposed project to these populations or communities. They also can identify key natural resources that may be affected. Although such tools are relatively simplistic, they may be useful for identifying distinct communities within a geographical area surrounding a candidate site, and for identifying clusters of facilities or sites that may contribute to cumulative impacts to a given region or community. By consulting maps or photographs that depict the locations of minority or low-income communities, as well as maps of the same geographical area that depict the locations of hazardous waste facilities, Superfund sites, Toxics Release Inventory facility sites, and/or wastewater discharges, analysts and EPA decision makers can gain a general understanding of the spatial relationships between the proposed project and the surrounding communities. These tools can assist the EPA NEPA analyst in identifying existing sources of environmental pollution and their proximity to minority and/or low-income communities.

By consulting maps or photographs that depict the locations of minority or low-income communities, as well as maps of the same geographical area that depict the locations of hazardous waste facilities, Superfund sites, Toxics Release Inventory facility sites, and/or wastewater discharges, analysts and EPA decision makers can gain a general understanding of the spatial relationships between the proposed project and the surrounding communities. Aerial photographs can be used to effectively depict the boundaries of an identified community and the spatial

relationship that exists between the community and natural resources and known pollutant sources.

Geographic information systems provide a much more powerful tool for identifying and locating populations of concern. GIS technologies are useful for characterizing environmental justice issues by identifying the locations of minority communities that potentially may be affected by proposed actions and providing a visual understanding of how potential impacts may be distributed within a geographical area. GIS provides the technology for displaying and overlaying locational information and population and site characterization information on one or more maps. GIS allows for the visual display of vast amounts of spatially oriented information. In addition, GIS systems can be used to display alternative "what if" scenarios and provide for relatively quick and easy general comparisons of the potential impacts presented by alternative locations.

Several EPA Headquarters and Regional offices are using and/or investigating the use of GIS technologies for identifying and analyzing environmental justice issues. GIS systems such as ARCINFO and Landview II are geographic references or computerized atlases. These systems can create maps using digitized geographical boundary files such as the U.S. Census Bureau TIGER/Line '92 files, and other commercially available digitized boundary files (*e.g.*, zip code boundaries, county boundaries, water body boundaries) to display locational information and geographical areas. GIS systems also can incorporate, and graphically display on computer-generated maps, other population and demographic information that is available in digitized format. Landview II includes 1990 demographic and economic data from the Bureau of Census, including population and housing characteristics and summary information on income, education levels, employment, race, and age. The census data are available in two databases, STF1A and STF3A, which contain digitized data files. The census databases are then spatially linked to the TIGER files that contain geographic and political boundaries. Each county in the census database is divided into several census tracts that are subdivided into census blocks. The blocks are aggregated into block groups containing between 250 to 550 housing units. This level of data aggregation allows the user to identify locations of

relatively small, homogeneous communities and to visualize, on the computer screen, the relative proximity of these communities to the proposed project and mitigation activities.

GIS allows users to easily display, on a single map, general locational and demographic information (*e.g.,* zip code boundaries, proposed facility site locations, pollutant concentrations, income level, ethnic background, population density). GIS also will allow a user to display data in terms of policy or decision criteria. For example, income distribution data for individual census tracts may be segregated by percent of population below the poverty level (*e.g.,* census blocks shaded differently to correspond to areas where 0 - 25 percent of the population is below the poverty level, 25 - 50 percent is below the poverty level, etc.). GIS also can integrate additional census information on education, employment, race, and age to produce graphic depictions of all of this information on a single map to obtain a comprehensive profile of the communities surrounding the proposed project. More than one project can be displayed on a single map to allow for a comparison of population characteristics surrounding the proposed project. Again, the maps generated by the GIS are useful tools for identifying minority and/or low-income communities that should be targeted for further study due to potential environmental justice concerns.

Although the availability of census demographic information in digitized format can significantly enhance NEPA analytical capabilities, and can be particularly useful for environmental justice analyses, the EPA NEPA analyst should keep in mind that there are limitations associated with the accuracy of census information due to the manner in which the data are collected and tabulated. Census data are useful for screening analyses, but results should always be validated through public participation mechanisms, other data sources, or by touring the community and talking with local officials and community leaders.

Many other types of information pertinent to NEPA project evaluations also are available for use in GIS systems. For example, EPA has made available portions of the Toxics Release Inventory (TRI) database (including facility locations), the Biennial Reporting System (BRS) database, the Aerometric Information Retrieval System (AIRS), the

CERCLA Information System (CERCLIS), and the Permit Compliance System (PCS), in digitized data files for use in GIS applications. DOT's chemicals in transit information is also available for GIS applications.

To enhance the applicability of GIS technologies to NEPA assessments, including the assessment of potential cumulative impacts from existing and proposed projects, the geographical and demographic information provided in Census databases can be integrated with other available EPA information (*e.g.,* facilities located within particular zip codes or counties that reported releases or emissions of a particular chemical in TRI reports, locations of NPL sites, etc.) and integrated with other NEPA factors using digitized data sets on soils, power lines, roads, streams, sources of electricity, locations of threatened and endangered species, and existing archaeological sites. These additional data sets are readily available from the U.S. Forest Service, the U.S. Geological Survey, the Department of Commerce, and state and local government agencies. Additional maps depicting community-specific issues (*e.g.,* locations of subsistence farmers and locations of water bodies supporting subsistence fishing activities) also can be compiled, digitized and incorporated into a GIS system to further depict and analyze more specific environmental justice issues and concerns.

Other GIS, or computer mapping, systems that may enhance NEPA analyses of environmental justice concerns include CAMEO (Computer-Aided Management of Emergency Operations), ALOHA (Aerial Locations of Hazardous Atmospheres) and AILESP (American Indian Lands Environmental Support Project). CAMEO includes chemical-specific information, facility-specific information from EPA's Chemical Inventory database and TRI database, and transportation information. CAMEO integrates MARPLOT, a mapping application tool that generates maps from U.S. Bureau of Census TIGER files. ALOHA is a modeling tool for estimating the movement and dispersion of gases and estimating pollutant concentrations downwind from the source of a potential spill or emission. ALOHA files can be saved and used in a format compatible with CAMEO. AILESP includes permitted facilities on or near Indian lands from various EPA databases (e.g., AIRS, BRS, NCDB, PCS, RCRIS, TRI, CERCLIS), pounds of chemicals released, 1994 spill

and one time release data, pesticide use by county, toxic weighting factors for TRI chemicals, two year inspection and compliance information, 1990 population and census statistics, and stream reaches with fish advisories, contaminated sediments and contaminated fish tissue.

5.2 Ecological and Human Health Risk Assessments

Executive Order 12898 provides for agencies to determine if a proposed action will result in disproportionately high and adverse effects to minority or low-income populations. Due to the fact that the characteristics of these populations may differ significantly from the characteristics of the larger affected population, analyses should address both the minority or low-income population and the comparison populations. See Chapter 2 for a discussion of the environmental and socioeconomic factors that should be considered in identifying and assessing disproportionately high and adverse effects.

EPA has a formal risk analysis process which consists of two related, but separate, processes: risk assessment and risk management. Risk assessment characterizes the likelihood for a chemical or substance to cause adverse health effects to humans and can provide a means for assessing the possible impacts on a population, if exposure occurs. Risk assessment provides an estimate of the probability that human exposure to a chemical agent will result in an adverse health effect to the exposed individual, or an estimate of the incidence of the effect upon an exposed population. Risk management is the process whereby it is decided what actions are appropriate, given an estimate of potential risks and due consideration to other relevant factors. Information developed in the risk assessment process is used to guide decision makers in determining the appropriate action to take within the risk management process. When making risk management decisions in the context of environmental justice concerns, a number of factors should be considered along with human health risk calculations or evaluations. These include social concerns, economic concerns, and acceptance of the proposed action by the affected communities. Within the context of risk management, there is an opportunity to consider relevant environmental justice issues. In the risk management process, decisions are made regarding acceptable levels of exposure and risk.

Risk assessment, as conducted by EPA, conforms to the Agency's published guidelines that include four distinct parts: Hazard Identification, Dose-Response Analysis, Exposure Assessment, and Risk Characterization. These four parts provide the analytical tools for identifying disproportionately high and adverse effects. During the risk management process, criteria must be developed to guide the weighing of information. These criteria provide the basis for risk-based decisions with regard to disproportionately high and adverse effects. For example, risk assessments usually do not account for exposure traits of racial and ethnic groups or accurately account for actual environmental harm to human health where the population density is low (*e.g.*, rural communities, Indian Country). Human activity patterns governed by customs, social class, and ethnic and racial cultures may be introduced and considered during the risk management process to allow for the identification of disproportionately high and adverse effects.

To ensure that environmental justice concerns are considered within the risk management process, risk assessments should be conducted to determine exposure pathways and potential effects and the affected community should be involved in the development and implementation of the process. This can then be overlaid with information obtained from locational analyses using GIS and census data during the risk management process to identify minority or low-income populations that are located within the identified exposure pathways. Racial, ethnic, and cultural information can then be used to further refine the risk management process to account for disproportionately high and adverse effects.

To enhance the analysis of disproportionately high and adverse effects within EPA's health assessment studies, several efforts are underway to make relevant health and exposure information available to these studies. EPA's Office of Research and Development is currently developing the National Human Exposure Assessment Survey (NHEXAS). This survey is designed to generate a human exposure database to address some of the geographic and demographic questions relevant to environmental justice issues. NHEXAS will address exposure concerns by providing information on the magnitude, extent, and causes of human exposure.

EPA's Office of Policy, Planning, and Evaluation is currently developing an environmental justice database that will integrate health effects data from the National Health and Nutrition Examination Survey III (NHANES-III), demographic data from the 1990 Census, environmental data from air monitoring stations, and the Toxic Release Inventory database. This database integration will assist EPA staff in developing disease correlations with air exposure data in high impact populations.

Ecological assessments conducted as components of EAs and EISs generally involve identifying the natural resources (*e.g.*, air, water, soils) that will be used by proposed project or activity and the potentially affected environments (*e.g.*, watersheds, wetlands, wildlife habitats) that may be impacted by the proposed project (including alternatives). After a general cataloging and description of the surrounding environmental and ecological resources is compiled, the potential changes and impacts of the proposed action and alternative actions are assessed. Often, these analyses do not fully substantiate the beneficial or adverse effects on the surrounding geographical area or communities within the area. Instead, impacts may be described generally, with an assumption that they are distributed equally across all communities or residents within the affected region or area. As a consequence, the analysis may overlook or ignore environmental justice concerns. If adverse impacts are not quantified, then special consideration should be given to whether potential impacts could be borne by minority communities or low-income communities residing within the larger area and, if necessary, separate analyses should be designed and conducted to assess this. As discussed above, GIS systems can sometimes be used to identify such populations and to characterize the environments where the populations reside. In addition, county and state planning agencies and housing authorities may be useful sources of information for characterizing the unique aspects and vulnerabilities of these populations.

If environmental, ecological, or human health impacts to the affected geographical area are quantified, the distribution of such impacts should be assessed. The study should attempt to estimate the proportion of impacts borne by low-income and/or minority populations within the area of a project's impact compared to the general population in

and around the project, or the project's region of influence. While traditional risk modeling may not always be used in the NEPA process, impact assessments and risk management tools should be tailored to reflect the characteristics of these communities and study assumptions should reflect the characteristics of the individuals residing in low-income communities and minority-populated communities (*i.e.,* model assumptions should reflect the general health of these individuals and their general living conditions and unique locations relative to pollutant sources). When tailoring risk management tools to consider the distribution of impacts to low-income and/or minority communities, differential patterns of subsistence consumption of natural resources should be considered, including differences in rates of consumption for fish, vegetation, water, and wildlife among ethnic groups and among cultures. Further, it should be recognized that land and water resources not predominantly used by the general population may be important sources of consumption , economy, cultural use, and/or recreation for minority and/or low-income communities. Degradation of these resources may result in direct and disproportionately high and adverse effects to minority and/or low-income communities.

5.3 Socioeconomic Analyses

The analysis and understanding of potential socioeconomic impacts is also important. CEQ regulations note that economic or social effects alone do not trigger an EIS (40 CFR §1508.14). However, if environmental justice concerns are identified during the screening analysis or during the development of an EA, the potential interrelated socioeconomic impacts to both the total affected population (or a "control" population) and to the low-income and/or minority communities of concern should be evaluated, to the extent practicable. Cultural or Social Impact Assessments are additional tools that can be used for analyzing specific socioeconomic impacts to a community that shares a common cultural or spiritual environment.

In the development of EAs and EISs, deterministic models are generally used to predict potential impacts that a particular action may have upon particular economic indicators (*e.g.,* the level of employment and changes to income distribution or property values) for the community

surrounding the proposed project. Standard models provide for analyses of the potential effects that an action may have upon the local economy in both the short term, due to transient or temporary activities (*e.g.,* construction, facility planning and startup activities), and the long term, due to sustained impacts to the area (*e.g.,* permanent employment opportunities, reduction in housing quality, degradation of existing environment). Generally, NEPA modeling activities measure potential shifts in indicators such as income distribution and employment levels across general income distribution categories (*e.g.,* percentage change in annual income to portion of affected population earning less than $15,000, between $15,000 to $20,000, etc.). Standard socioeconomic models also can be used to predict impacts that proposed actions and alternatives may have upon available housing stock, housing quality, and property values.

Generally, standard socioeconomic models are employed to predict shifts and changes in particular socioeconomic indicators such as employment, income levels, and housing quality upon a large geographical area or population center, often a standard, pre-defined economic trade area. The data and information provided as inputs to the model and assumptions made in employing the model (including economic conditions and multipliers) broadly characterize the entire population of the large geographical area or population center surrounding the proposed project. The results of these modeling efforts may include potential impacts to various categories within the overall population characterized by income level or by housing category. However, these models generally do not allow (or at least have not been used so as to allow) for a distributional analysis of potential impacts to specific communities, individual populations, or to small geographical areas.

To predict or characterize more accurately the potential disproportionately high and adverse effects to minority or low-income communities and account for potential environmental justice concerns, standard socioeconomic models currently used for EAs and EISs may have to be modified or specifically tailored to account for an array of new variables, such as subsistence living, treaty-protected resources, cultural use of natural resources, sacred sites, dependence on public transit, community cohesion, and a relatively unskilled labor base. Environmental justice issues

and concerns may be integrated into some traditional socioeconomic analyses by first employing scoping activities and screening tools to identify potential minority and/or low-income communities prior to the employment of specific modeling techniques. It then may be possible to tailor modeling assumptions and input data on specific populations or targeted communities, rather than apply standard modeling techniques to large economic trade areas or standard metropolitan areas and using average input parameters that may not reflect adequately the characteristics of minority or low-income communities (*i.e.,* alter model assumptions to characterize the population affected by the environmental justice concern, rather then characterize the average individual in the entire study area). As noted above, Census databases contain demographic information (*e.g.,* income levels, race, age, employment levels) at the census tract and census block levels. Other potential sources of information include tribal, state and local planning agencies, and state housing, commerce, and welfare agencies. EPA analysts should keep in mind that some information on the characteristics of local communities and environments may be available only from community leaders, local government offices, and/or members of the community. Some information may be available from transcripts of public concerns raised at hearings for other government projects within the same region. In some cases, analysts may need to conduct interviews of local community leaders and members of the targeted population.

One option for modifying or tailoring socioeconomic analyses to identify and evaluate environmental justice concerns is to develop index or ranking systems for identifying and scoring potential disproportionately high and adverse effects to minority and/or low-income communities. Such an index or ranking system could be applied to specifically defined or targeted areas and used as a screening tool to identify environmental justice concerns in communities surrounding one or more candidate locations. Candidate locations that result in high index scores or rankings can either be dropped from consideration, targeted for additional and more thorough socioeconomic and risk analyses to investigate further potential disproportionately high and adverse effects, or development of additional alternative actions or projects designed to mitigate identified impacts.

An environmental justice screening index may be as simple as defining several levels or categories of potential impacts (*e.g.,* changes in employment levels, changes in income levels, and changes in overall health levels) or defining and scoring several socioeconomic indicators (*e.g.,* dependence on subsistence farming or fishing, percent of population below poverty level, average property value) and weighing each category of impact as to its importance to contributing to environmental justice issues. Decision criteria (*e.g.,* undertake further detailed social impact analyses, drop candidate location from consideration) could then be set for different ranges of index scores or rankings. The index also may combine preliminary information on potential economic impacts with information on other potential impacts (*e.g.,* environmental degradation, air emissions) to assign decision criteria for additional targeted analyses or studies.

EPA Region 6[11] developed a relatively sophisticated ranking scheme to determine whether an environmental justice indicator exists. The formula provides a means for determining whether an environmental justice situation exists and includes factors such as population exposed, degree of impact and degree of vulnerability.

Region 6 evaluates sites using an environmental justice formula and ranks facilities or actions on a scale of 0 to 100. Regional officials point out that although higher scores can indicate greater potential environmental justice concerns, the population density, percent minority population, and percent of economically depressed household data are the more important analytical factors. When evaluated independently, they often provide greater insight into potential environmental justice concerns and can be used alone to rank sites. Also, the user should realize that even a location with an index ranking of zero can have significant environmental justice concerns. For example, an unpopulated area will rank a zero, but if owned and/or used by minority and/or low-income groups, the site may have significant environmental justice importance. Recent examples of EPA's use of the EJ index include the draft EIS for Eagle Pass Mine, in Maverick County, Texas, and the Supplemental Draft EIS for Expansion of the Oak Hill Surface Lignite Mine into the DIII Area, Rusk County, Texas. Utilizing the EJ index on a scale of 1 to 100 wherein

higher values indicate more concern, neither EIS warranted a closer examination into EJ issues.

APPENDIX A

Council on Environmental Quality Guidance for
Addressing Environmental Justice
Under the National Environmental Policy Act

(not included on this Internet version of EPA's guidance)

APPENDIX B

Regional Contacts

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APPENDIX C

References

Council on Environmental Quality. March 1998. Guidance for Addressing Environmental Justice under the National Environmental Policy Act (NEPA).

Council on Environmental Quality. January 1997. Considering Cumulative Effects Under the National Environmental Policy Act.

Council on Environmental Quality. November 17, 1980. Guidance on Applying Section 404(r) of the Clean Water Act to Federal Projects Which Involve the Discharge of Dredged or Fill Materials into Waters of the U.S., Including Wetlands.

Council on Environmental Quality. March 23, 1981. Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, as amended. 46 Fed. Reg. 18026.

Earnhardt, Melany. 1995. Using the National Environmental Policy Act to Address Environmental Justice Issues. Clearinghouse Review.

Environmental Justice Resource Center. *People of Color Environmental Groups: 1994-1995 Directory.* Prepared by Robert D. Bullard, Clark Atlanta University, Atlanta, Georgia.

Executive Order 12898 on Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations with accompanying Memorandum. February 11, 1994.

Executive Order 13007 on Indian Sacred Sites. May 24, 1996.

Interagency Working Group on Environmental Justice (IWG). Draft Guidance for Federal Agencies on Key Terms in Executive Order 12898. August 8, 1995.

National Enforcement Training Institute. December 1996. Environmental Justice Training for Enforcement Personnel: Trainer's Manual.

The National Environmental Policy Act of 1969 as amended. 42 U.S.C. 4321-4347. January 1, 1970.

Ross, Heather E. 1994. Using NEPA in the Fight for Environmental Justice. William and Mary Journal of Environmental Law. Volume 18:285.

U.S. Environmental Protection Agency. 1996. The Model Plan for Public Participation.

U.S. Environmental Protection Agency, Office of Federal Activities. October 3, 1984. Policy and Procedures for the Review of Federal Actions Impacting the Environment.

U.S. General Accounting Office. June 1, 1983. Siting of Hazardous Waste Landfills and Their Correlation with Racial and Economic Status of Surrounding Communities.

1. [0] Throughout this guidance, the term "disproportionately high and adverse effects"is used interchangeably with the longer phrase "disproportionately high and adverse human health or environmental effects on minority populations and low-income populations." This is done purely for editorial ease.

2. The term 'treaty-protected resources,' as it is used in the guidance, includes those resources that are protected by treaty, statute and/or executive order.

3. On May 24, 1996, the President issued Executive Order 13007 on Indian Sacred Sites to 1) accommodate access to and ceremonial use of Indian sacred sites, and; 2) avoid adversely affecting the physical integrity of such sacred sites.

4. For consistency throughout the document, the guidance will use the term "Indian Tribe" when referring to federally recognized tribes and "indigenous population" or "community" when generally referring to Native American, American Indian, Alaska Native, and/or Native Hawaiian peoples. Under environmental justice, the Agency's policy is to interact with both the tribal government on a government-to-government basis, as well as with any affected or interested indigenous person(s) as public stakeholders.

5. A distinction must be made between Native American communities that live within their own governmental jurisdictions and those that do not. The CEQ regulations recognize the government-to-government relationship between the federal government and tribal governments, and encourage federal agencies to involve tribal governments in the NEPA process when a proposed project may affect a tribe or tribal lands. See sections 1501.2 [Apply NEPA Early In The Process]; 1501.7(a)(1) [Scoping]; 1502.16 [Environmental Consequences]; 1503.1(a)(2)(ii) [Inviting Comments]; 1506.6(b)(3)(ii) [Public Involvement]; and 1508.5 [Cooperating Agency]. Native American programs include those Federal programs which are to be guided, as appropriate, by the government-to-government relationship, the Federal trust responsibility to federally recognized Indian Tribes, and the role of tribes as governments within the Federal system.

NEPA Compliance Coordinators should consult with the regional Indian Program Coordinator and should request that the Indian Tribes seek participation as a cooperating agency when a tribal government, land, resources, or interest may be affected by a project. While such cases may or may not trigger an environmental justice review, EPA must act consistent with the federal government's trust

responsibility to federally recognized Indian Tribes. Each case should be decided individually; if questions arise please consult with the American Indian Environmental Office and the Office of Federal Activities.

6. [0] The IWG key terms guidance describes differential patterns of consumption of natural resources as relating to "subsistence and differential patterns of subsistence, and means differences in rates and /or patterns of fish, water, vegetation and/or wildlife consumption among minority populations or low-income populations, as compared to the general population."

7. [0] It should be noted that the factors the IWG is providing for assessing environmental hazard were not necessarily developed in the context of NEPA analyses. These factors are, however, similar to the factors used in determining "significant" physical or natural environmental effects under NEPA.

8. Guidance on the terms "minority population" and "low-income population" is contained in Appendix A.

9. See CEQ "*Environmental Justice Guidance Under the National Environmental Policy Act"* page 10, Helpful Information to Inform the Public During the Scoping Process.

10. Environmental Justice Resource Center. *People of Color Environmental Groups: 1994 - 95 Directory.* Prepared by Dr. Robert D. Bullard, Clark Atlanta University, Atlanta, Georgia. 1994.

11. [0] U.S. EPA Region 6, Office of Planning and Analysis. "Computer Assisted Environmental Justice Index Methodology." July, 1994.

Michelle, Kayce (UTC)

From: Will Bloch [redacted]
Sent: Friday, August 27, 2010 10:10 AM
To: EFSEC (UTC)
Subject: Draft EIS re. Whistling Ridge Energy Project
Attachments: Whistling Ridge comments.doc

Attached please find my comments on the Draft Environmental Impact Statement prepared by the EFSEC and BPA regarding the Whistling Ridge Energy Project.

Thank you.

Will Bloch
[redacted]

BEFORE THE STATE OF WASHINGTON ENERGY FACILITY SITE EVALUATION COUNCIL (WEFSEC)

In the Matter of Application
No. 2009-1

Whistling Ridge Energy LLC

Whistling Ridge Energy Project

Comments by
Will Bloch,
private citizen

Commenter Details

I am a retired biochemist and my wife (Dell Rhodes) is a retired psychology professor, both residing at [redacted]
One of Dell's academic specialties was cognitive neuroscience; this fact is relevant to the analysis below. We have lived at this address for about 9 years, having chosen to retire here in order to be close to the extraordinary natural environment in the Columbia Gorge and on the surrounding ridges and peaks. A photo simulation of the wind-farm visual effect at the top of Strawberry Mountain, immediately above our house, (accessible at the Whistling Ridge Project website, though not included in the Draft EIS document) shows considerable impact. However, the farm would not be visible from our residence. As retirees, we have absolutely no economic dependence, direct or indirect, on the outcome of the current site evaluation.

Summary Recommendation and Justification

We urge that the WEFSEC not allow this project to proceed at the present time. Our principal reason is that the May 2010 Draft EIS is fundamentally and legally deficient in applying well known principles of perceptual psychology to the assessment of the visual and auditory impacts of the proposed wind farm. Furthermore, the Whistling Ridge Energy Project would create an essentially permanent, potentially radical, change in the scenic features which motivated the establishment of the Columbia River Gorge National Scenic Area (CRGNSA), recognized nationally and internationally to contain one of the great landscapes of the world. As the WEFSEC currently lacks any rules for factoring cumulative effects into their siting decisions, approval of this major commercial assault on Gorge scenery would almost certainly prejudice in favor of approval of any future wind-

farm proposals flanking the Gorge, if only out of respect for due process (avoidance of arbitrariness). The result would be the effective gutting of the CRGNSA by non-legislative means. Although dismantling of the CRGNSA has been a long-term goal of local conservatives, including many political leaders in Skamania and Klickitat Counties, it seems almost certain that such an outcome would distress a significant majority of local residents, as well as many other Washington residents and even more Gorge-lovers worldwide.

Standing of Visual-Resource Impact in Influencing This Decision

From the mere fact that the WEFSEC devoted a significant fraction of the Draft EIS to Visual Resources and commissioned an ambitious photo simulation of the predicted effect of the wind turbines on approximately 20 views in and flanking the Gorge, it would appear that the WEFSEC recognizes the importance of visual impact to its evaluation. However, project proponents, and Jason Spadaro in particular, have kept up a steady public drumbeat to the effect that scenic impact is irrelevant because the project lies outside the CRGNSA. This position is a spectacular example of the Fallacy of the False Inverse, which should be familiar to anyone with a legal, mathematical, or philosophical background. The Fallacy goes like this: it is a true statement that if the project lay within the CRGNSA boundaries, it would be subject to view-impact regulation; therefore it is true that since the project lies outside the CRGNSA boundaries, it is not subject to view-impact regulation [the second conditional statement is the logical inverse of the first one]. The problem with this deduction is that the rules of logic dictate that the inverse of a true conditional statement is not necessarily true.

The following common-place example helps one understand why the inverse of a true statement may be false. It is true that all Ford cars have four wheels on the road. The inverse of this statement is the following: cars that are not Fords do not have four wheels on the road. The latter is clearly false, because Chevys, Cadillacs, VW's all have four wheels on the road. Back to the present case: the proponents' position is not only fallacious as a matter of logic; it is wrong legally. The lawful authority of the WEFSEC to determine the impact of the Whistling Ridge Energy Project on scenic values inside and outside of the CRGNSA exists independently of the authority of the Gorge Commission in this matter. Both the Gorge Commission and the WEFSEC "have four wheels on the road". The standards that the WEFSEC applies in order to minimize wind-farm visual impact may not be the same

as the CRGNSA rules, but that does not make them any less permissible or necessary. Quite independently of what the Gorge Commission does, the WEFSEC is empowered and charged to apply to an energy project any sort of scenic criteria it determines to be in the public interest. The WEFSEC should not be deflected from its public responsibility by illogic in the propaganda campaign of project proponents.

As the WEFSEC is tasked with considering all impacts of energy projects within the state, it must consider the possibility that the most important impact may be to visual resources in cases where the baseline value of the latter is very high. As the Draft EIS points out, view impact is more subjective than most other impacts; but that does not make it any less important. The CRGNSA is an entity created by the US Congress in recognition of the immense scenic values in the Gorge. Public awareness of and support for Gorge scenic values certainly is even stronger today than it was when the CRGNSA was established. These facts obligate the WEFSEC to high-prioritize the preservation of visual resources in this case.

Deficiencies in the Draft EIS Section on Visual Resources

There appear to be at least three weaknesses to this section of the document.

(1) In outlining the theoretical components of visual-impact analysis, the Draft EIS does not consider three elements of perceptual psychology which will aggravate the visual impact of any wind farm, especially in the Gorge.

(a) In evaluating scenery the mind pays special attention to skylines: the shapes and complexity of the profiles of ridges and peaks. Anything which interrupts a smooth contour is immediately homed in on to assess whether it is a natural or unusual feature. This attentional focus probably is hard wired [possible adaptive value: spotting predators/prey on the horizon] and not subject to habituation or extinction. From this perspective, nothing could be more jarring than a row of wind turbines atop a ridge; they completely interrupt the visual flow of the ridge line. We shall not get used to the interruption over time. The same row of structures against the background of a hillside would be less conspicuous. However, according to conventional wisdom, wind farms in mountainous country must be on top of the ridges, where they also have the greatest potential to distract.

(b) The text states that at higher rotation velocities (i.e., in strong winds), turbine blades would become blurred essentially to the point of

invisiblity, reducing visual impact. This assessment ignores some hard-wired brain circuitry, which is primed to seek out and focus on motion [possible adaptive value: spotting moving predators/prey against a complex, camouflaging visual background]. Modern turbines have relatively low maximum velocities, slow enough that viewers will find their attention drawn toward their rotation even in strong winds. That is certainly my experience with the wind farms along US 97 east of Maryhill. If I detect any motion, my mind wants to watch the turbines, not the road. The same attentional concern has led many cities to ban dynamic billboards as traffic hazards. [It also should be pointed out that the prediction of visual blurring is engineering nonsense. At such a high velocity, the rotors would self-destruct.]

(c) Psychologists understand well an optical illusion which we all have experienced, the so-called "moon illusion". As the moon rises above or approaches the horizon, the mind amplifies its apparent size in the visual field. If you take a digital photo of a moonrise or moonset and compare the resulting image to what you think you are seeing, the discrepancy can be quite a shock. A basic mental process, like the two phenomena described above, underlies the moon illusion and will make wind turbines on the horizon look larger than they really are. As a result, the photo simulations used in the Draft EIS to evaluate wind-turbine visual impact systematically underestimate the perceived size of the turbines to human viewers.

There is nothing soft about the science describing the three perceptual phenomena above. Research psychologists know how to quantify them and easily could verify their importance in the present context by performing the appropriate experiments at existing wind farms.

(2) The Draft EIS uses two arguments to downplay the significance of wind-farm visual impact, arguments so arbitrary and lacking in common sense as to make one wonder whether the EIS sponsors, the WEFSEC and the BPA, already have their minds made up to approve the project.

(a) It is suggested that since the Whistling Ridge area has only about 140 sunny days a year and sunny days are the only ones when the turbines will present a visual contrast to the background sky, the net visual impact of the facility will be minimal. This is nonsense for any number of reasons. The sunny days are concentrated in the summer. That is when there are the most daylight hours in which to enjoy the views. That is when the Gorge population is swollen by visitors, many of whom have come explicitly to enjoy the views. That is when residents spend the most time outdoors, much

of it including enjoyment of the views. Therefore that is when the most Gorge-viewing person-hours occur. Most of us spend little time savoring the view when the Gorge presents a thousand shades of gray, and experience heightened expectations that clear weather will allow us to enjoy the natural environment. View pollution is most likely to bring us down when we want the outdoors to recharge our spiritual batteries, in good weather.

(b) It is suggested that because the local scenery near Whistling Ridge already is significantly degraded by high-tension power lines and towers and by clear-cuts, the additional visual impact of wind turbines will be mitigated by the high background visual degradation. This is essentially the classic argument of polluters that since the environment already is degraded by others, they should have their own license to pollute. Now we don't like to look at clear-cuts and power lines any more than the next guy does. However, we've also learned over the decades that clear-cuts grow out remarkably rapidly to the point that their view is not as jarring as that of a fresh clear-cut; relative to a fresh clear-cut, turbines are forever. Furthermore, we've been indoctrinated that a clear-cut simply models the natural phenomenon of a lightning-caused burn, so looking at a clear-cut induces a warm and fuzzy feeling inside. As for power lines and towers, they do not project nearly as far into the sky as wind turbines will; and they do not move. The lines they trace in the sky are much thinner than a wind tower. Their color tends to blend with the background; the bright white of wind towers is intended explicitly to be seen. Most of them do not occupy ridge lines.

(3) The visual-impact meat of the Draft EIS is contained in the marvelous set of photo simulations of representative views of the proposed wind farm. This dataset has one advantage and one disadvantage compared to the parallel presentation of the simulation data in the Whistling Ridge website put up by Broughton/SDS. The accompanying cartoon versions of the pictures greatly improve one's interpretation of the photos. On the other hand, the Draft EIS includes and discusses only 13 of the views, whereas the website shows 21 different views. [Neither presentation accounts for the missing views numbered 6 and 9 in the series, stimulating inevitable speculation about what those perspectives showed.]

The creator and editor of such a photo dataset have tremendous power over the impressions it fosters, through selection of the exact scenes photographed and through selection of the subset of photos to be analyzed. There is some sign of both kinds of biasing in the complete dataset and in

the Draft EIS. For example, the images of views #7 (Mill A), #17 (Providence Hospital), #20 (OR 35), and #21(Kollock-Knapp and Scoggins Roads) include foreground (power lines, buildings, or trees) which tends to obscure and de-emphasize the wind-farm view. Selection of a different viewing spot in the same vicinity would have increased dramatically the subjective impression of visual impact. The Mill A case is especially obvious, because the Draft EIS commentary employs the considerable baseline visual pollution of a power line in the foreground to decrease the significance of scenery degradation by the wind farm. Now most views of Whistling Ridge from the Mill A community do not include power lines or towers in the foreground. A photo simulation from a more typical Mill A front yard would have to lead to a conclusion of large to extreme, not "low to moderate", Viewer Sensitivity. This biased scene selection must be particularly galling to Mill A residents because this community undoubtedly would feel the greatest impact of visual and sound pollution by the Whistling Ridge Project.

The editor of the May 2010 Draft EIS also chose not to present and analyze views #2 (Strawberry Mountain), #21 (Kollock-Knapp and Scoggins Roads), and #22 (Cook-Underwood and King Roads), even though these images, available on the Whistling Ridge Project website, show some of the greatest wind-farm visual impacts in the entire dataset. These examples reinforce the impression that the sponsors of the EIS already know what conclusions they want to reach.

Visual Pollution: How Much Is Too Much?

Despite any bias which might have influenced design and analysis of the photo-simulation dataset, the May 10 Draft EIS concludes that 7 of the 13 views analyzed showed "moderate" Viewer Sensitivity; 5 showed "low-to-moderate" or "moderate-to-low" Viewer Sensitivity; only one, #19 (Columbia River Highway) showed "low" Viewer Sensitivity. Obviously these findings are not expected to define the bounds of view degradation which the wind farm might cause throughout the affected area; for example, there are no views from within structures through windows facing Whistling Ridge, from the Columbia River itself or from within the Mark Hatfield Wilderness. [The framing of a scene by a window can induce a particularly strong version of the moon illusion, and in any case eliminates a lot of visual background which might de-emphasize a wind-farm image.] Instead, these are representative findings from which one can infer that the turbines would

impact to varying degrees the views from a large fraction of the local land and water surface, in all directions.

The Draft EIS concludes that degradation of Visual Resources is not significant enough to affect the acceptability of the Whistling Ridge Energy Project, despite the fact that the US Congress has designated this area one of great scenic value; apparently "moderate" impact is not a serious concern. A poll of area inhabitants on both sides of the Columbia (especially the older ones) probably would show that many of them treasure their views of the River and the Cascades as much as they do the outdoor activities which also draw many to settle in the area. How much Viewer Sensitivity would one have to show in order to conclude that wind-project visual pollution might suffice to sink this project? The Draft EIS does not discuss a threshold level of visual pollution, avoiding any need to defend such an evaluation and rendering completely arbitrary any decision on this point. Hence, all a critic can do is to invoke the Golden Rule. How much Viewer Sensitivity of visual pollution seen from your front yard would it take for **you** to conclude that the impact is unacceptable? When is "moderate" not enough?

How should the WEFSEC react to this concern in a way which does not sink all wind-farm proposals? Simply keep wind farms away from areas generally recognized as having extreme scenic value. This criterion leaves much of central and eastern Washington still suitable for wind farms.

Sound Pollution

Why I use the term, "sound pollution", rather than "noise pollution", will become evident in a moment. The Draft EIS section on Noise is so detailed, technical, and data-driven that my first impression was to drop an original concern that this might be a crucial environmental issue, at least for the residents of Mill A and Willard, the communities most impacted by the entire proposed array of about 50 wind turbines. However, this reaction was reversed by the section's discussion of the "beats" which can be heard as a result of positive and negative interference within a group of turbines, of low-level periodic sounds from the passage of each turbine's rotor blades past the wind tower. These beats can be louder than the point-source noise and can contain rhythmic complexity not present in the latter.

My basic concern is the mental phenomenon of the "dripping faucet", or "ticking clock". Sometimes, especially at night, our sensitivity to tiny sounds is enhanced [probable adaptive value: detection of predators creeping through the underbrush]. Once awakened, the mind can so focus on intermittent sound, fainter than ambient noise, that sleep becomes impossible. Some irregularity or complexity in a periodic faint sound probably enhances the attentional effect that awakens us; having become sensitized to an intermittent sound, the mind keeps waiting for the next event. This form of auditory alertness is hard to overcome voluntarily. Indeed, efforts to overcome it often seem to amplify the offending sound.

Here we have an aural phenomenon which audio engineers would dismiss as insignificant because the physical magnitude of the triggering noise is so low, in both absolute and relative terms. Furthermore, it varies widely among individuals and even for a given individual on different nights, probably depending in large part on other sources of discomfort which disrupt deep sleep. Finally, if it arises from audio interference among nearby wind towers, it will vary widely among different residences in a single community. However, the resulting sleep deprivation can devastate human physical and mental health. I experienced the phenomenon recently with a motel-room electric clock, cleverly designed to emit an artificial ticking sound with a one-second period. I had to unplug the clock to get back to sleep. My wife, normally much more sensitive to sleep interruption than I, slept through the whole episode and claimed the next morning not to hear the ticking (which, indeed, was much less evident to me in daylight).

If the WEFSEC needs any more prompting to take sound pollution seriously, it should check out an article in the July 31, 2010 edition of the NY Times Online by William Yardley ("Turbines Too Loud for You? Here, Take $5000"). It describes the difficulty Oregon citizens near Ione, OR have had with wind-tower noise, aggravated by the absence of an effective enforcement mechanism for state noise laws. Washington State should not allow residents' lives to be blighted by nearby new wind developments – what amounts to an arbitrary and often uncompensated taking. If necessary, new wind developments in Washington should be placed on hold until the nature of sound pollution is more fully understood and rules are established to protect the neighbors of wind farms.

How should the WEFSEC react to this concern in a way which does not sink all wind-farm proposals? Start by avoiding sites close to

communities and preference sites where there is no serious objection from the neighbors. These conditions probably are met for many wind farms on agricultural land in central and eastern Washington, where population density is very low and the few wind-farm neighbors welcome the compensation for site leases. More technical evaluation of wind-turbine "beat" acoustics also is advisable, especially to determine for sure whether there is any reason for concern in the areas of Willard and Mill A with maximum population density, on the order of a mile distant from the wind farm. It also would be valuable to know how wind direction and velocity affect propagation of this kind of sound, as Willard and Mill A are upwind during the most common wind conditions.

Environmental Justice

The section of the May 2010 Draft EIS on environmental justice is completely inadequate. The section starts by correctly stating that federal regulation requires that an EIS consider disproportionate impacts on ethnic minorities and low-income populations. It then proceeds to ignore the low-income part of the criterion and dismiss the possibility of environmental injustice because no significant minority populations exist in the vicinity of the proposed project. The separate Socioeconomic section treats the entire three-county area affected in any way by the project, ignoring the unevenness of income distribution (and project impact) across the area.

However, it is clear that Willard and Mill A will feel any environmental impact of the Whistling Ridge Project much more than any other community or neighborhood, thanks to a combination of nearness to the turbines, exposure to the largest number of turbines, dependence on the road needed to supply the construction site, and population density. Furthermore, it is quite likely that an economic study of Mill A and Willard would show that these communities qualify for low-income designation. In fact, at least one such survey has been done for a local utility district; the sampled fraction of the Mill A population was found to be low-income relative to the average for Skamania County, itself low-income by state standards. The WEFSEC needs to conduct an economic survey of the entire Willard and Mill A populations.

Placed in a broader socio-economic context, if Willard or Mill A qualifies as a low-income community, the economic imbalance of this project would be spectacular. The holding company backing the Whistling Ridge project is owned by the richest family in the Gorge. The real impetus

for the project is not any passion for green energy, but the need for SDS/Broughton, by far the largest private land-holder in the Gorge, to get some decent economic return from its large unproductive acreage. The richest folks around could end up feeding on the environmental discomfort of some of the least well-off ones. Because it owns the proposed wind-farm site, it does not even have to offer locals any financial compensation.

I do not want to be misinterpreted here. There is nothing wrong with economic success or the accrual of family wealth and political influence over decades of living and working in the area, in a trajectory which has included considerable public service and philanthropy as well. Many Gorge residents owe their livelihood and, to some degree, their quality of life to the Stevenson family. SDS/Broughton may have evolved to the status of "too big to fail", as far as the local economy goes. Counterbalancing this corporate economic and political power, Washington State (through the agency of the WEFSEC) is the major entity with the power and mandate to assure that an economically disadvantaged subset of the population does not pay the principal price for rescuing SDS/Broughton from any current economic difficulties or unwise investment decisions.

Impact of the Construction Process

The Draft EIS concentrates on the effects of the completed project. Its treatment of the impact of the construction process on the surrounding communities, especially the economically disadvantaged communities of Mill A and Willard, is inadequate. The construction process would require the trucking of a very large number of very large loads to the wind-farm site, over narrow, winding Cook-Underwood Road, which the residents of Mill A, Willard, and Underwood use to get to work, school, shopping, and public services. The same route is used by outsiders to get to work at the Willard fisheries facility. It is quite likely that segments of the affected road would be closed (in both directions) to non-construction traffic as wind-tower components move over them. The traffic obstruction would extend beyond the Cook-Underwood Road. The trucks must get to the Cook-Underwood Road from I84 (probably via Boardman) or from a Bingen staging area supplied by river barge or train. So many truckloads are needed to complete a project of this magnitude that the disruption could go on for a long time. Some local residents live close enough to the economic edge that many months of impaired transportation could spell financial disaster for them.

The special transportation requirements of this project are so extreme that the EIS should be revised to include a detailed quantitative breakdown which allows the public to understand how intensively (and for how long) public use of the Cook-Underwood Road and the affected section of WA14 will be reduced: how many loads per day, how many loads (and days) total, how much closure time is needed for each load over each critical segment of the route. The current version of Section 3.11 of the Draft EIS suggests that local road closures will not exceed 20 minutes at a time and that traffic disruption from component shipping will last no more than 3 months. However, no supporting data are provided for these estimates.

A complete EIS also would need to make clear (a) what hours of the day would be used for component movement over roads [presumably night-time transport would be ruled out by noise regulations in Underwood]; and (b) how large the backups in local traffic could be during component transit. The public also needs to know (a) whether (or where) traffic in both directions would have to be stopped as a truck passed; and (b) whether empty trucks, themselves quite large, also would require the halting of oncoming traffic.

The traffic issue is just one more example of what is wrong about siting a wind farm so close to population centers, aggravated in this case by the marginal state of the affected local arterials. This problem would be much less serious for a wind farm located in the wide open spaces of central and eastern Washington.

No NIMBY Here; Need for Statewide or Region-wide Planning

A significant part of the well financed propaganda campaign in favor of the Whistling Ridge Energy Project has been the claim that opponents represent well-off locals who refuse to accept any environmental burden to go with their enjoyment of a high standard of living: chardonnay liberals. The term, "Not In My Back Yard", or NIMBY, often is used to tar opponents with an image of affluent self-indulgence.

The image simply does not work here, and not just because project opponents in Willard and Mill A do not meet any American standard of being "well off". It also ignores the fact that a majority of project opponents live outside the area, simply because the Gorge population is rather small. People all over the country and the world care deeply about the Gorge and

would hate to see such massive man-made structures as windmills degrade its scenery. Establishment of the CRGNSA made clear that the Gorge is not "my" backyard or the domain exclusively of its residents; it is the nation's and even the world's backyard. In asking the WEFSEC to keep this perception in mind, critics of the Whistling Ridge Energy Project are serving a public interest. Finally, "NIMBY" does not apply in this case because in many parts of the Northwest, largely in the under-populated rural center and east, hosting a wind farm is not thought by the locals to impose environmental costs. The scenery is not distinguished and is so completely agricultural that there barely are any remnants of the original natural landscape and plantscape. The rural population is so dispersed that wind farms can be sited well away from any communities. Why should the WEFSEC approve a facility in an area where there is strong opposition and reasonable concern about environmental impacts, when there is so much publicly acceptable acreage, also close to electric transmission lines, elsewhere in the state?

An inescapable consequence of the current politicking is that the WEFSEC should develop a pro-active energy plan, preferably in collaboration with the appropriate Oregon governmental agency, instead of reacting to each separate siting proposal as though it existed in isolation. The whole process could become a lot less adversarial and political, and do a much better job of meeting state/regional needs, if all reasonable sites for various forms of electricity generation were identified and prioritized. Energy planning would include (1) energy demand projections over time and space and (2) capacity estimates for acceptable sites, in order to understand how much environmental compromise might be needed over time. Planning should be regional rather than state-by-state, simply because demand for electricity generated anywhere in this area is distributed across at least two states.

Planning also should test scenarios for the maturation of large-scale photovoltaic electricity generation. Continuation of the recent and ongoing increase in solar-panel manufacturing capacity and reduction in solar-panel price should create a situation soon (on the time scale of wind-project lifetime) in which photovoltaic electricity generation is fully competitive with wind generation. Photovoltaic farms, perfect for the large amount of agriculturally underproductive or unproductive land in central and eastern Washington and Oregon, would avoid or minimize both the long-distance visual pollution and the potential sound pollution of wind farms. They are

silent. They do not have to occupy ridgelines. They will not trigger the moon illusion. Even with automated tracking, solar panels do not move at a perceptible rate. They do not have to possess long-range visibility in order to protect aircraft. Wind power almost certainly is a transitional technology, fated to give way to photovoltaic generation in the long haul, if only (but not just only) because the easily distributed nature of photovoltaic generation eliminates any need for additional transmission capacity.

Integrated, long-term, energy planning also is the only way for the WEFSEC to avoid authorizing so many local wind projects that the scenery along the entire Gorge is irrevocably disrupted by an army of wind towers. Once you have approved a pioneering project like Whistling Ridge, it becomes difficult to deny the next one without risking legal attack on the grounds that you are behaving arbitrarily and politically. However, with a fully researched and vetted state or regional plan in place, the objective grounds for supporting or rejecting any future proposal become clear in advance.

Long-term energy planning also is the best way to silence the current rash of *ad hominem* and false attack ads which accuse project opponents of being against green energy. An implicit message of such ads is that any state politician or agency supporting a go-slow approach also will be accused of being against green energy. It is very hard for even dedicated and competent public servants to make the best choices for the region when they risk political attack if they buck the bucks.

Of course there will be political conservatives and individual developers who will challenge energy planning, or indeed any governmental limitation on what they do on their own property. These same people do not seem to object to the federal and state green-energy subsidies currently needed to render their projects profitable, and probably will resist moves to reduce/eliminate the subsidies as energy prices rise and equipment prices fall, even though the subsidies clearly are intended only to lubricate the transition to green power in a political environment which still favors fossil fuels and nuclear energy even more.

Need for Technical Input from Cognitive Psychologists

One recurring theme of the preceding analysis is that modern perceptual psychology, a vital and rapidly evolving field, can inform our

understanding of environmental impacts. At least in the cases of view and sound pollution, the analytical treatments in the May 2010 Draft EIS simply ignore accepted scientific wisdom, much of it not even that new. Such an omission, of course, increases the legal vulnerability of the environmental-assessment process.

As part of its need to de-politicize environmental assessment, the WEFSEC should commission a panel of consultants trained in contemporary psychology to seek consensus positions on relevant cognitive issues like those raised here.

Acknowledgment

These comments have benefited from the insights of Randall C. Nelson, Underwood WA, Barbara Robinson, Rowena OR, and my wife, Dell Rhodes. However, one should not infer that they necessarily agree completely with what is written above.

COMMENT LETTER 316

From: [redacted]
To:
Subject:
Date:
Attachments:

From: repar [redacted]
Sent: Friday, August 27, 2010 4:47 PM
To: EFSEC (UTC)
Subject: Comments-Whistling Ridge DEIS-Solar storms and power grid-Repar-7

Dear EFSEC,
Attached, please find my comments and questions about the effects of solar storms on the power grid. Thank you.

Mary J. Repar

[redacted]

Mary J. Repar
[redacted]

27 August 2010

EFSEC
905 Plum Street SE
Olympia, WA 98504-3172
e-mail: efsec@commerce.wa.gov

BPA
Public Affairs Office – DKE -7
P.O. Box 14428
Portland, OR 97293-4428
Toll-free comment line: 800.622.4519
FAX: 503.230.3285
503. 230. 4145
www.bpa.gov/comment

Re: Comments on solar storms and their effects on the power grid and transmission lines—and the inadequacy of information on the subject in the Whistling Ridge DEIS

Dear EFSEC and BPA,

I am greatly concerned that there is not a section in the DEIS that give us information on transmission lines and how they are susceptible to solar storms. There is enough literature and data widely available, see my References #1 and #2, below that could have been used to fill this information gap in the DEIS.

The more transmission lines are built, the greater their exposure to solar storms. If BPA is (and we all know that they are) proposing to build more and more transmission lines in our region, and if these lines are bigger than existing infrastructure, I think that should be part and parcel of this DEIS discussion. More transmission lines vulnerable to solar storms put us all at risk of blackouts.

I don't know enough technical details about this issue but I would like to know more and I think the DEIS should contain this information and answer questions about power grid vulnerabilities. **The DEIS does not contain this information. Therefore, the DEIS is incomplete.**

Sincerely,

/e-signature/Mary J. Repar
27 August 2010

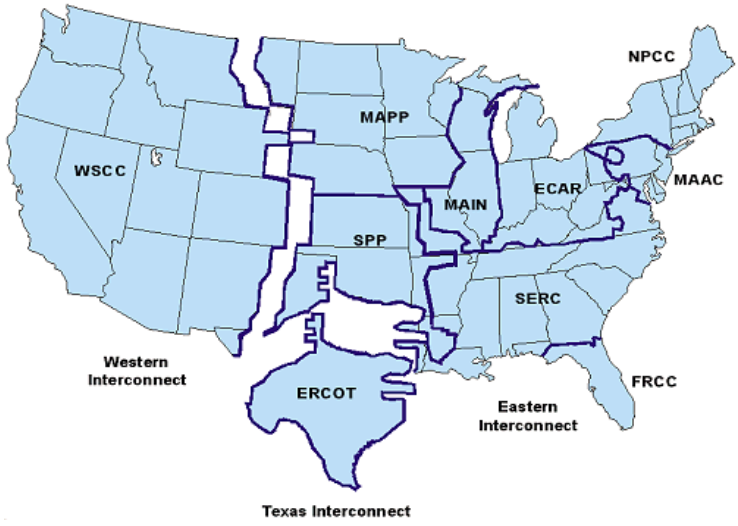
Reference #1/ http://www.solarstorms.org/Spower.html

Blackouts

Power Grid

Pipelines

Water



The US power grid is a complex electrical apparatus that has well-known sensitivities to space weather disturbances. Recent changes in its design and utilization have significantly reduced its operating margins to supply us with on-demand electricity. This means there is less flexibility available with which to deal with power shortages and blackouts.

Space weather events can damage equipment over wide geographic regions so that recovery delays become substantially longer and more costly.

The 23rd Cycle - Chapter 4 - Describes in detail the state of the US power grid, and the forces which are driving it to be far more vulnerable to solar storms than at any time in the past.

"As North America has evolved into a unified power-sharing network of regions, each buying and selling a diminishing asset, US domestic power has become more vulnerable to solar storms buffeting the power grid in the more fragile northern-tier states and Canada. So long as one region continues to have a surplus at a time when another region needs a hundred megawatts, power is 'wheeled' through 1000-mile power lines to keep supply and demand balanced across the grid. In 1972, a typical utility might need to conduct only a few of these electromagnetic transactions each week. Now, it is common

for thousands to be carried out, often by computer, in much the same way that stocks are traded on Wall Street...

The electrical power grid is composed of many elements, and you can think of it as a set of rivers flowing overhead. Large rivers carry the electricity from distant generation stations (Dams, Hydroelectric Facilities and Nuclear Plants) on supply lines of 138,000 volts or higher. These are carried as three cables (2 'hot' and one defining the 'ground' in a 3-phase system) suspended atop 100-foot tall towers that you will see out in many rural areas. These supply cables terminate at regional substations where the high voltages are converted into lower voltages from 69,000 volts to 13,800 volts. These lines then enter your neighborhoods atop your local telephone poles where a neighborhood transformer steps this voltage down to 220 and supplies a dozen or so individual houses.

When space weather disturbances cause 'Geomagnetically Induced Currents' , these GICs can enter a transformer through its Earth ground connection. The added DC current to the transformer causes the relationship between the AC voltage and current to change at the source of the electricity, not just where it is delivered to your electrical appliance. Because of the way that GIC currents affect the transformer, it only takes a hundred amperes of GIC current or less to cause a transformer to overload during one-half of its 60-cycle operation. As the transformer switches 60 times a second between being saturated and unsaturated, the normal hum of a transformer becomes a raucous, crackling whine. Regions of opposed magnetism as big as your fist in the core steel plates crash about and vibrate the 100-ton transformer nearly as big as a house in a process that physicists call magnetostriction.

The impact that magnetostriction has upon specific transformers is that it generates hot spots inside the transformer where temperatures can increase very rapidly to hundreds of degrees in only a few minutes. Temperature spikes like these can persist for the duration of the magnetic storm which, itself, can last for hours at a time. During the March 1989 storm, a transformer at a nuclear plant in New Jersey was damaged beyond repair as its insulation gave way after years of cumulative GIC damage. Allegheny Power happened to be monitoring a transformer that they knew to be flaky. When the next geomagnetic storm hit in 1992. They saw the transformer reply in minutes, and send temperatures in part of its tank to more than 340 F (171 C). Other transformers have spiked fevers as high as 750 F (400 C). Insulation damage is a cumulative process over the course of many GICs, and it is easy to see how cumulative solar storm and geomagnetic effects were overlooked in the past.

Outright transformer failures are much more frequent in geographic regions where GICs are common. The Northeastern US with the highest rate of detected geomagnetic activity led the pack with 60% more failures. Not only that, but the average working lifetimes of transformers is also shorter in regions with greater geomagnetic storm activity. The rise and fall of these transformer failures even follows a solar activity pattern of roughly 11 years.

If your power plant is located over a rock stratum with low resistance, any geomagnetic disturbance will cause a bigger change in the voltages it induces in your local ground, and the bigger this change in ground voltage, the stronger will be the GIC currents that flow into your transformers. Typical daily GICs can run at about 5-10 amperes, but severe geomagnetic storms can cause 100-200 amperes to flow.

A conservative estimate of the damage done by GICs to transformers by Minnesota Power and Electric was $100 million during a solar-maximum period. This includes the replacement of damaged transformers, and the impact of shortened operating lifetimes due to GIC activity.

Large transformers cost $10 million, and can require a year or more to replace if spares are not available. During a transformer failure, an affected utility company will have to purchase replacement power from other utilities for as much as $400,000 per day or more. Oak Ridge National Laboratories, meanwhile, estimated that a solar storm event only slightly stronger than the one that caused the Quebec blackout in 1989 would have involved the Northeast United States in a cascading blackout. The experts figured that about $6 billion in damages and lost wages would have resulted from such a widespread involvement. The North American Electric Reliability Council (NAERC) placed the March 1989 and October 1991 storm events in a category equivalent to Hurricane Hugo or the 1989 Loma Prieta Earthquake in San Francisco. But, many consultants for the power industry dispute NAERC's estimate saying that it is much too low. The $6 billion may not properly include collateral impacts such as lost wages and productivity, spoiled food and a myriad of other human costs that could easily run the losses into the tens of billions of dollars."

Congressional Testimony (**See Reference #2 at the end of this document)** - On October 30, 2003 the House of Representatives, Subcommittee on Environment, Technology and Standards convened a session 'What is Space Weather and who should forecast it?'. The following is an excerpt of the testimony by John Kappenman, Manager, Applied Power Systems, Metatech Corporation:

"While electricity customers receive power from the local distribution system (typical operating voltage of 15kV with step down to 120/240 volt), the backbone of the system is the high voltage transmission network. The primary AC transmission network voltages in the U.S. are at 230kV, 345kV, 500kV and 765kV. These transmission lines and their associated transformers serve as the long distance heavy hauling arteries of electricity production in the U.S. A single 765kV transmission line can carry over 2000 MW of power, nearly 200 times what a typical 15kV distribution line which is the overhead line commonly used for residential distribution. Space Weather or geomagnetic disturbances directly attack this same high voltage transmission circulatory system and because both have continental footprints, these disturbances can rapidly erode reliability of these infrastructures and can therefore threaten widespread blackout for extreme disturbance events. The U.S. electric power grid is the world's most extensive, Figure 1 provides a map of the approximate location of the nearly 80,000 miles of 345kV, 500kV and 765kV transmission lines in the contiguous U.S....

In spite of the best efforts, failures still can occur; for example, a lighting strike can still cause on occasion a high voltage transmission line to trip. Very high winds, for example, due to a tornado can cause the failure of a line or several lines on a common corridor. However, most of these events generally occur in isolation and power grids are operated at all times to withstand the largest creditable single contingency failure without causing a cascading collapse of the network itself. Space Weather differs from ordinary weather in that it has a big footprint and attacks the system across many points simultaneously, causing at times of severe events multi-point failures on the network that can threaten the integrity of the network. Therefore, geomagnetic storms may be one of the most important hazards and is certainly the least understood threat that could be posed to the reliable operation of these networks...

There were several noteworthy cases of transformer internal heating associated with the March 13, 1989 storm in the U.S. mid- Atlantic Region. In one case at the Salem Nuclear plant in southern New Jersey, the internal heating was so severe that complete failure of the transformer resulted. Figure 7 provides a few pictures of the transformer and internal winding damage (conductor melting and insulation burns) due to the GIC exposure. In this case the entire nuclear plant was unable to operate until the large 500kV 1200MVA transformer was replaced. Fortunately a spare from a canceled nuclear plant in Washington State was available and restoration of the plant occurred in 40 days. Transformers of this type are of custom design and in most cases new replacement transformers of this type generally take up to a year for delivery. Failures of key apparatus, such as this, raise concerns about the ability to rapidly restore power in a region once a blackout and failure has occurred...

We are looking at the potential of blackouts that could exceed even that of the very large blackout that occurred just a few months ago [August 14, 2003]. And there is no part of the U.S. power grid that is immune to this. It is just a matter of where does this intense phenomenon geographically lay down? How big is the footprint? And we know these footprints can be very, very large. And literally, we could impact over 100 million population in the worst case scenarios."

2002-Department of Energy - National Transmission Grid Study "Over the past 10 years, competition has been introduced into wholesale electricity markets with the goal of reducing costs to consumers. Today, wholesale electricity sales save consumers nearly $13 billion annually. However, the Nation’s outdated transmission system was not designed to support today’s regional, competitive electricity markets. Investment in the transmission system has not kept pace with the growth in generation and the increasing demand for electricity. Transmission bottlenecks threaten reliability and cost consumers hundreds of millions of dollars each year. "

The Changing Structure of the Electrical Power Power Grid ca 2000 - This study by the Department of Energy describes the impact that deregulation will have on the operation of the Grid.

National Security Telecommunications Advisory Committee - Provides a detailed assessment of the many risks that our power grid faces. "The Electric Power Risk Assessment" subgroup found no evidence of power outages attributed to deliberate electronic intrusion into utility control systems. The greatest risk facing the electric power infrastructure of the United States remains physical damage and destruction. Compared to the threat posed by natural disasters and physical attacks on electric power infrastructure elements, electronic intrusion represents an emerging, but still relatively minor, threat. However, changes within the electric power industry and in technology are increasing the risk posed by electronic intrusion. "

2004 - Penn State Study of Power Grid Failure - The team's topological analysis of the grid structure reveals that, although the system has been designed to withstand the random loss of generators or substations, its integrity may depend on protecting a few key elements.

"Our analysis indicates that major disruption can result from loss of as few as two percent of the grid's substations," says Albert, whose research team includes Istvan Albert, research associate in the Bioinformatics Consulting Center at Penn State, and Gary L. Nakarado at the National Renewable Energy Laboratory.

One implication of the research is that identification of strategic points in the grid system can enhance defense against interruptions, whether by equipment failure, natural disasters or human activity. Major blackouts caused by failures in the grid, such as the one that affected the northeastern part of the country during the summer of 2003, incur tremendous economic, public-health and security risks.

The study, titled "Structural Vulnerability of the North American Power Grid," was published in a recent issue of the journal Physical Review E. The researchers constructed a model of the entire transmission grid with over 14,000 "nodes," including generators, transmission substations, and distribution substations, and over 19,000 "edges," corresponding to the high-voltage transmission lines that carry power between the nodes. They measured the importance of each substation node based on its "load," or the number of shortest paths between other nodes that pass through it.

Blackouts

Electrical power blackouts and 'sags' cost the US about $80 billion every year in lost services, industrial capacity and Gross Domestic Product. Blackouts caused by space weather events are potentially more devastating than a major hurricane landfall. The space weather 'Storm of the Century' could cause hardships more severe than anything we have thus far experienced.

Congressional Testimony - On October 30, 2003 the House of Representatives, Subcommittee on Environment, Technology and Standards convened a session 'What is Space Weather and who should forecast it?'. The following is an excerpt of the testimony by John Kappenman, Manager, Applied Power Systems, Metatech Corporation: " Some of the first reports of operational impacts to power systems date back to the early 1940's

and the level of impacts have been progressively become more frequent and significant as growth and development of technology has occurred in this infrastructure. In more contemporary times, major power system impacts in the U.S. have occurred in storms in 1957, 1958, 1968, 1970, 1972, 1974, 1979, 1982, 1983, and 1989 and several times in 1991. Smaller scale impacts can and do occur even more frequently; these include anomalous operating events that may result in the unexpected tripping of a key element of the system or **even permanent damage to apparatus such as large power transformers**... [my bold emphasis]

The most important of these impacts was the **storm-caused chain of events resulted in the blackout of the Hydro-Quebec power system.** At 2:42 am EST, all operations across Quebec, Canada were normal. At 2:43 am EST, a large impulse in the Earth's magnetic field erupted along the U.S./ Canadian border. GICs immediately started to flow in the southern portions of the Hydro-Quebec grid. In reaction to the GIC, voltage on the network began to sag as the storm increased in magnitude; automatic voltage compensating devices in the network rapidly turned ``on'' to correct this voltage imbalance. Unfortunately these compensators themselves were vulnerable to the harmonics generated in the network's transformers, and mis-operation of relays to protect these devices caused the entire fleet of 7 compensators on the network to shut down within 60 seconds of the beginning of the storm impulse. When the compensators shut down, the network collapse followed within a matter of seconds, **putting over 6 million inhabitants of the province in the dark**. Going from normal conditions to a complete province-wide blackout occurred in an elapsed time of just 90 seconds. The power system operators had no time to understand what was happening, let alone to take any meaningful human action to intervene and save the grid...

While power grid reliability concerns are of paramount importance, the long duration of the storm and associated GICs in transformers on the network **caused internal transformer heating to the point of failure**. There were several noteworthy cases of transformer internal heating associated with the March 13, 1989 storm in the U.S. mid-Atlantic Region. **In one case at the Salem Nuclear plant in southern New Jersey, the internal heating was so severe that complete failure of the transformer resulted.**..

However, just empirical evidence alone suggests that power grids in North America that were challenged to collapse for storms of 400 to 600 nT/min over a decade ago, are not likely to survive the plausible but rare disturbances of 2000 to 5000 nT/min that long-term observational evidence indicates have occurred before and therefore may be likely to occur again...

All mass transit systems shutdown as they depend on electricity for many of their functions. Traffic signal systems on most major streets and highways stopped and as a result most major thoroughfares became the equivalent of 8 lane parking lots in the early hours of the blackout. Only a few major power facilities are continuously manned, and since blackouts are possible at any hour, the odds are that 75 percent of the time the normal utility day crews are not on the job when these events occur. Attempting to recall

workers that are trapped on the wrong side of these transportation snares is highly problematic...

Because of the possible large geographic laydown of a severe storm event and resulting power grid collapse, the ability to provide meaningful emergency aid and response to an impacted population that may be in excess of 100 million people will be a difficult challenge. Potable water and replenishment of foods may need to come from boundary regions that are unaffected and these unaffected regions could be very remote to portions of the impacted U.S. population centers. As previously suggested adverse terrestrial weather conditions could cause further complications in restoration and resupply logistics."

Lawrence Berkeley Labs Study, In 2005, Kristina Hamachi-LaCommare and Joe Eto for the U.S. Department of Energy's Office of Electric Transmission and Distribution completed a study of the costs to the US from a variety of chronic electrical 'sags' and short-term losses of service. - "The study estimates the total cost to the U.S. of power interruptions at about $80 billion per year. Of this, $57 billion (73 percent) is from losses in the commercial sector and $20 billion (25 percent) in the industrial sector. "The reason for the commercial sector's high share of these cost is the large number of commercial sector customers, which includes small as well as large businesses, and the high cost per outage per customer,"

August 14, 2003 Blackout - ICF Consulting produced an assessment of the economic impact of this recent electrical blackout that affected 50 million people in 8 states . "Specifically, for this analysis, we assume that the initial outage of 61,800 MW lasted for 4 hours and then half of that was restored, with the other half (30,900 MW) being the shortfall for another 10 hours. Given that the next announcement from NERC was issued approximately 18 hours after the start of the outage, we assume that another one-half of the unserved 30,900 MW was restored after 14 hours and the remaining loss of 15,450 MW lasted for the subsequent 4 hours. This gives a total of 18 hours for the first phase of the blackout. Using similar arguments for the remaining period of the blackout, we assume more than 13,000 MW of customer load was lost for another 14 hours after which 6,600 MW was the shortfall for another 10 hours. Finally, on the third day of this blackout, 2,000 MW was the loss for 20 hours and another 1,000 MW was the shortfall for the final 10 hours of this blackout. This gives a total outage period of 72 hours. Using this scenario and the average electricity price for the affected region from August 2002, the economic cost of this outage is estimated to be between $7 and $10 billion for the national economy. "

Investigation of August 2003 Blackout - The North American Energy Reliability Council conducted an investigation of how the blackout happened, and its detailed impacts. A space weather storm would share many elements in common with this event, except that the electrical equipment damage would be far more wide spread. Their findings are summarized in **Section 5** of this document.

The following blackouts are not known to have been caused by space weather:

September 23, 2002, - A massive power failure disrupted central Chile, including the capital city of Santiago. Some 3,500 passengers had to be rescued from stalled Metro trains in Santiago.
April 29, 2003, a power failure hit the airport in Melbourne, Australia, disrupting operations for 90 minutes.
November 24, 2002 - Buenos Aires and La Plata, Argentina, were hit by a huge power failure.
January 31, 2003 - An 'unusual' power failure hits Cambridge, Ontario.
August 6, 2003 - Buenos Aires was hit again by another sudden blackout . Power company officials blamed that outage on the collapse of three power lines
August 18, 2003 - 4.5 million people in Georgia lost electricity; the Tblisi metro ground to a halt and the water supply was cut off.
August 23, 2003 - Finland's capital Helsinki and suburbs, including the international airport at Vantaa, were blacked out. Saturday evening's revelers at Helsinki's Linnanmäki amusement park had to be rescued when the blackout left them dangling in rides in midair. Even Radio Suomi, which relies on emergency generators, went off the air when both its generators and backup battery power failed.
August 28, 2003 - the BBC reported that at the height of London's evening rush hour, a massive power outage struck the city and southeast England. 1800 trains stopped, including 60 percent of the London Underground, an event that Britain's Network Rail called "unprecedented."
September 1, 2003 - At 10 o'clock the city and five other Malaysian states were struck by a massive blackout. Workers in the Petronas Towers, the world's tallest buildings, were trapped in elevators and with signal lights out, traffic in downtown Kuala Lumpur ground to a virtual halt.
September 2, 2003 - Cancun, Mexico, which was swarming with tourists and advance teams for the following week's World Trade Organization meeting, also found itself plunged into a blackout. The power failure struck Quintana Roo state on the Yucatan peninsula and two neighboring states. Power was out for six hours and affected 3 million people.
September 23, 2003 - Eastern Denmark and southern Sweden, including the cities of Copenhagen and Malmo, lost power in what was described as a "very unusual" blackout. Four million people were affected, including passengers stranded on board trains and at Copenhagen's busy international airport. Factories on the island of Zealand and in southern Sweden stopped production and the Oresund Bridge linking Denmark to Sweden was closed to traffic. [International Herald Tribune]
September 28, 2003, - A massive power failure struck Italy, leaving 57 million people without electricity. A simultaneous blackout plunged Geneva, Switzerland, into darkness. The blackout cut off electricity to Vatican City and Pope John Paul II had to rely on emergency generators to power amplifiers in order to deliver his Sunday sermon. Thirty-thousand passengers were stranded on trains throughout the country. The blackout was later blamed on a tree hitting a high voltage transmission line in Switzerland.

[108th Congress House Hearings]
[From the U.S. Government Printing Office via GPO Access]
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WHAT IS SPACE WEATHER AND
WHO SHOULD FORECAST IT?

HEARING BEFORE THE

SUBCOMMITTEE ON ENVIRONMENT, TECHNOLOGY,

AND STANDARDS

COMMITTEE ON SCIENCE

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WHAT IS SPACE WEATHER AND

WHO SHOULD FORECAST IT?

THURSDAY, OCTOBER 30, 2003

House of Representatives,
Subcommittee on Environment, Technology, and

Standards,

Committee on Science,

Washington, DC.

The Subcommittee met, pursuant to call, at 10 a.m., in Room 2318 of the Rayburn House Office Building, Hon. Vernon J. Ehlers [Chairman of the Subcommittee] presiding.

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hearing charter

SUBCOMMITTEE ON ENVIRONMENT, TECHNOLOGY, AND STANDARDS

COMMITTEE ON SCIENCE

U.S. HOUSE OF REPRESENTATIVES

What Is Space Weather and

Who Should Forecast It?

thursday, october 30, 2003
10:00 a.m.-12:00 p.m.

2318 rayburn house office building

Purpose

On October 30, 2003 at 10:00 a.m., the House Science Committee's Subcommittee on Environment, Technology and Standards will hold a hearing to examine the space weather activities at the National Oceanic and Atmospheric Administration's (NOAA) Space Environment Center. The Space Environment Center (SEC) provides real-time monitoring and forecasting of solar and geophysical events. These events can: cause damage to communication satellites, electric transmission lines and electric transformers; interfere in ground-based communications with airline pilots; be fatal to astronauts on space flights and in the International Space Station; and potentially harm airplane passengers flying polar routes. SEC forecasts are used by the U.S. military, the National Aeronautics and Space Administration (NASA), NOAA itself, and by the industries mentioned above. For example, just last Wednesday (October 22), the SEC released two-day advanced warnings about an unusually large solar storm, which allowed electrical utilities, airlines, and spacecraft managers to take preventive action to minimize disruption of service due to the storm. (See attachment.)

The Air Force Weather Agency works closely with NOAA's SEC on the collection of space weather data through satellite and ground-based sensors and provides warnings tailored for specific military needs. The Air Force relies on the SEC for data analysis and overall forecasting. The Air Force and NOAA each contribute to the cost of sensors to

monitor space weather, and NASA provides many of the satellites on which the sensors are carried.

In the House Fiscal Year (FY) 2004 Commerce, Justice and State (CJS) appropriations bill, SEC funding levels are below the Administration's request. The Senate CJS Appropriations Committee report includes the suggestion that the Air Force or NASA should take on the duties of predicting space weather and contains no funding for SEC. Thus, budget constraints could force the closure or reduction of these vital and unique services provided by NOAA's SEC. The Subcommittee wants to better understand the potential impact of the loss of SEC services.

The Subcommittee plans to explore several overarching questions, including:

1. LWhy do we need to understand and forecast space weather events?

2. LWhat unique capabilities and expertise does NOAA's SEC provide? To what extent could the Air Force or NASA perform these duties?

3. LWhat are the implications of closure or reduced activities of NOAA's SEC to the government and private sector?

Witnesses:

Dr. Ernest Hildner, Director, Space Environment Center, National Oceanic and Atmospheric Administration (NOAA), Boulder, Colorado. Dr. Hildner will provide an overview of the SEC, the services it provides and its collaborations with other federal agencies.

Col. Charles L. Benson, Jr., Commander, Air Force Weather Agency, Offutt Air Force Base, Nebraska. Colonel Benson will explain the mission of Air Force Space Weather Operations Center and the way the Air Force and NOAA work together on space weather prediction.

Dr. John M. Grunsfeld, Chief Scientist, National Aeronautics and Space Administration (NASA). Dr. Grunsfeld will discuss the effects of space weather on NASA operations.

Mr. John Kappenman, Manager, Applied Power Systems, Metatech Corporation, Duluth, Minnesota. Mr. Kappenman will discuss the effects of space weather events on electric power grid systems and how the loss of NOAA's SEC would affect this industry. Mr. Kappenman was formerly with Minnesota Power.

Captain Hank Krakowski, Vice President of Corporate Safety, Quality Assurance, and Security, United Airlines, Chicago, Illinois. Captain Krakowski will discuss how space weather events affect the airline industry, including air traffic control communications and human health concerns. He also will discuss how the loss of NOAA's SEC would affect United Airlines operations.

Dr. Robert Hedinger, Executive Vice President, Loral Skynet, Bedminster, New Jersey. Dr. Hedinger will explain the implications of space weather events for communications satellites and how the loss of NOAA's SEC would affect the commercial satellite sector.

Background

What Is Space Weather?

Space weather refers to conditions on the sun and in the solar wind, which can cause disturbances in the outer layers of the Earth's atmosphere. Highly energized particles from the sun disrupt the upper layers of the Earth's atmosphere, causing geomagnetic storms that result in increased radiation and rapid changes in the direction and intensity of the Earth's magnetic field. These conditions can influence the performance and reliability of space-borne and ground-based technological systems and can endanger human life or health. Government and private sector organizations concerned with communications, satellite operations, electric power grids, human space flight, and navigation use space weather information.

History of NOAA's Space Environment Center

NOAA's Space Environment Center (SEC), located in Boulder, Colorado, began in the 1940's as a program to study short-wave radio propagation at the National Bureau of Standards (now known as the National Institute of Standards and Technology, or NIST). As the SEC expanded its scope to study the effects of solar weather on the Earth's atmosphere, the center moved into the Office of Oceanic and Atmospheric Research in NOAA, where it is currently located. The SEC consists of three divisions: research and development, space weather operations, and systems. The SEC has 54 NOAA staff and two Air Force liaisons in its Boulder office. In a 2002 report, the National Academy Sciences, called the work of the SEC "crucial."

NOAA's SEC collects, provides, and archives space environment data from its polar-orbiting and geostationary satellites, from other federal agencies, and through international data exchange. Forecasters at SEC provide space weather forecasts and warnings to users in government and industry and to the general public, while the Air Force and private sector users take these forecasts and tailor them for their organizations' specific needs. SEC's space weather operations division is the national and international warning center for disturbances in the space environment that can affect people and equipment. The effects of these disturbances are described in more detail below. The research and development division is home to the leading experts in space weather. They conduct research in solar-terrestrial physics, develop techniques for forecasting solar and geophysical disturbances, provide real-time monitoring and forecasting of solar and geophysical events, and prepare data to be archived by NOAA's National Geophysical Data Center.

Air Force Space Forecast Center

NOAA's SEC works closely with the U.S. Air Force's Space Forecast Center at Offutt Air Force Base in Nebraska, which provides space weather forecast services to U.S. military customers. The total budget for Air Force space weather efforts was $15.3 million in FY 2003. The Air Force provides two personnel who work at the SEC to ensure that this vital space weather information is fed smoothly to the Air Force, which then tailors it for military purposes. For example, NOAA's SEC may issue a warning that a geomagnetic storm will occur in the Earth's atmosphere at a certain time. The Air Force will use this information to make recommendations about military satellites that should be turned or powered down, or military operations that should be suspended until the storm passes.

NASA Operations

NASA requires information about space weather to make decisions regarding the space shuttle and International Space Station (ISS) operations. For example, astronauts conducting space walks could be killed if they were exposed to high levels of radiation. Additionally, astronauts inside the ISS may have to take special precautions during a solar storm. In fulfilling its research mission, NASA flies many of the sensors used to collect space weather data on its research satellites. National Space Weather Program (NSWP)

Previous reviews of the space weather program have concluded that NOAA should continue to run the civilian space weather forecasting operation.

For example, in 1997, an interagency working group developed "The National Space Weather Program Implementation Plan," under which NOAA was to continue to run civilian space weather programs and the Air Force was to continue to run such programs for the military. The interagency group included NOAA, the National Science Foundation, the Department of Defense, NASA, the Department of Energy, the Department of the Interior, and the Department of Transportation.

Similarly, in its 2002 report, "The Sun to the Earth—and Beyond:

A Decadal Research Strategy in Solar and Space Physics," the National Academy of Sciences recommended that NOAA not only continue to forecast space weather but that NOAA should do more to coordinate the development of the sensors that are used to make its forecasts. Specifically, the Academy recommended that NOAA and NASA initiate a plan to transition solar monitoring sensors from their current location primarily on research satellites to operational satellite programs.

The SEC Budget Situation

The Space Environment Center is funded through NOAA's Office of Oceanic and Atmospheric Research (OAR). In FY 2003, the SEC received $5.2 million (a reduction of $2 million below FY 2002 levels). For FY 2004, the Administration requested $8 million for NOAA's SEC. At this time, the FY 2004 appropriations process is ongoing in Congress. The House Commerce, Justice, State (CJS) bill, passed in July, provides $5.2 million for the SEC (same level as FY 2003). The Senate CJS bill, reported out by the full committee, recommends no funding for SEC and suggests that the Air Force or NASA should assume the responsibility of forecasting space weather. Funding for some of the sensors and satellites that provide data to the SEC is already provided by other agencies, such as NASA and the Air Force, but NOAA's SEC is the national center for data collection and forecasting of space weather events.

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Why Do We Need Space Weather Forecasts From NOAA's SEC?

Electric Power Grids

The first recorded evidence of space weather effects on technology was in 1859, when a major failure of telegraph systems in New England and Europe coincided with a large solar flare. More recently, on March 13, 1989, geomagnetically induced currents in Canadian transmission lines set off a cascade of broken circuits,

causing loss of power for the entire Hydro-Quebec power grid. The blackout affected six million customers and cost Hydro-Quebec more than $10 million.

In 1998, a similar geomagnetic storm was headed for Earth. This time, thanks to data from new sensors and improved forecast models, NOAA's SEC forecasters were able to alert electric power customers 40 minutes before the storm hit the Earth. In response, electric power utilities diverted power and increased safety margins on certain parts of the grid to avoid stress on the power system.

Satellite Operations

In addition to electric power grid operations, human activities dependent on satellites are affected by space weather. This includes everything from communications to satellite-television. Research done at NOAA's SEC has helped provide the government and other satellite operators with data on storms to help understand whether a failed satellite was due to mechanical problems or space weather. Additionally, the satellite industry uses space weather forecasts to determine the timing of rocket launches to avoid sending a multi-million dollar satellite into orbit at the peak of a solar storm.

Communications Satellites

Solar storms cause disturbances in the Earth's ionosphere that can affect the orbital path of low-orbit spacecraft, creating operational and tracking problems and sometimes shortening the useful life of a satellite. For example, in May 1998 loss of telephone pager service to 45 million customers was caused by a solar storm. During the Gulf War in 1991 military forces reported high frequency radio communications interruptions due to ionization storms, and in January 1994 an extended period of high electron levels caused failure of two Canadian communications satellites, which interrupted telephone, television, and radio service for several hours.

Airline Industry

Airlines are concerned about space weather because it can disrupt satellite and ground-based communication systems, which allow air traffic controllers to talk directly to pilots. Federal regulations require airlines to maintain communication capability with their aircraft at all times. Additionally, navigation systems can be affected by space weather events. Finally, because of the curvature of the Earth, planes flying from North America to Asia generally make flights over the North Pole, where passengers can be susceptible to higher doses of solar radiation than traditional non-polar flights. United Airlines reports that for the 21-month period from January 2002 through September 2003 there were approximately 140 flights that were or could have been affected by space weather events.

Questions for Witnesses

Dr. Ernest Hildner, Director, Space Environment Center, National Oceanic and Atmospheric Administration (NOAA)

1. Please provide an overview of NOAA's Space Environment Center (SEC). What research programs are performed at the center? What operational services are provided by the center?

2. Please describe the different types of solar weather events and specifically explain the time it takes for them to travel to the Earth. What is the lead-time we currently

have for reacting to or mitigating the effects of solar weather? Please provide historical examples of when space weather events have affected human activities.

3. Who are the users of SEC products and information?

4. Please describe the relationship between the SEC, NASA, and the Air Force Weather Agency, including a specific explanation of the role of each agency in understanding and predicting space weather.

5. If the FY04 final appropriation for the SEC was the $5.2 million recommended in the House bill, what would be the impact on SEC services?

Col. Charles L. Benson, Jr., Commander, Air Force Weather Agency

1. Please provide an overview of the Air Force Space Weather Services provided through the Air Force Weather Agency.

2. Please describe the relationship between NOAA's Space Environment Center (SEC), NASA, and the Air Force Weather Agency, including a specific explanation of the role of each agency in understanding and predicting space weather.

3. Who are the users of Air Force space weather products and information?

4. Are there any technical barriers to the Air Force Weather Agency taking on the duties of the SEC if it were no longer funded through NOAA? Given that the Air Force's capabilities are designed for military purposes, how would you have to adapt your practices to provide SEC-like services to the civilian sector?

5. What would be the impacts on the Air Force and overall military operations if SEC no longer existed? Please provide specific examples when possible.

Dr. John M. Grunsfeld, Chief Scientist, National Aeronautics and Space Administration (NASA)

1. Please provide an overview of how space weather can affect NASA operations, including examples of historical events that have caused problems.

2. How does NASA use data and products from NOAA's Space Environment Center (SEC)? In general, how much lead time do you need to make decisions for mitigating the effects of space weather?

3. How would you compare our knowledge today of the impacts of space weather on NASA operations to what we knew five years ago, and to what we expect to know five years from now?

4. What would be the impact to NASA if SEC were no longer able to provide its space weather forecasts to you? Please provide specific examples when possible.

5. Are there any technical barriers to NASA taking on the duties of the SEC if it were no longer funded through NOAA? Given that NASA's mission is research oriented, how would you have to adapt your practices to provide SEC operational services?

Mr. John Kappenman, Manager, Applied Power Systems, Metatech Corporation

1. Please provide an overview of how space weather can affect electric power grid systems, including examples of historical events that have caused problems.

2. How does your organization use data and products from NOAA's Space Environment Center (SEC)? In general, how much lead time do you need to make decisions for mitigating the effects of space weather?

3. How would you compare our knowledge today of the impacts of space weather on electric power grid systems to what we knew five years ago, and to what we expect to know five years from now?

4. What would be the impact to your organization and the electric power grid industry if SEC were no longer able to provide its space weather forecasts to you? Please provide specific examples when possible.

Captain Hank Krakowski, Vice President of Corporate Safety, Quality

Assurance and Security, United Airlines

1. Please provide an overview of how space weather can affect airline operations, including examples of historical events that have caused problems.

2. How does your organization use data and products from NOAA's Space Environment Center (SEC)? In general, how much lead time do you need to make decisions for mitigating the effects of space weather?

3. How would you compare our knowledge today of the impacts of space weather on airline operations to what we knew five years ago, and to what we expect to know five years from now?

4. What would be the impact to your organization if SEC were no longer able to provide its space weather forecasts? Please provide specific examples when possible.

Dr. Robert Hedinger, Executive Vice President, Loral Skynet

1. Please provide an overview of how space weather can affect satellite operations, including examples of historical events that have caused problems.

2. How does your organization use data and products from NOAA's Space Environment Center (SEC)? In general, how much lead time do you need to make decisions for mitigating the effects of space weather?

3. How would you compare our knowledge today of the impacts of space weather on satellite operations to what we knew five years ago, and to what we expect to know five years from now?

4. What would be the impact to your organization if SEC were no longer able to provide its space weather forecasts? Please provide specific examples when possible.

Chairman Ehlers. This hearing will come to order. Good morning. Welcome to the oversight hearing entitled: "What Is Space Weather and Who Should Forecast It?" And if you don't know what it is, you can go out and look outside and you will get some idea of what space weather is. Well, I wanted to make it clear, since I have been asked this, that the solar storm that is currently underway did not start the fires in California.

As a physicist, I must admit that when we began to plan for this hearing last month, I did not think it would conjure much attention outside of the scientific community. However, thanks to Divine Intervention, we now have major solar storm activity to coincide with the hearing. We certainly hope that the lights will stay on and our webcast capabilities will not be diminished during the course of this hearing.

The purpose of the hearing is to examine the National Oceanic and Atmospheric Administration's, better known as NOAA, Space Environment Center. This center, abbreviated SEC, but not to be confused with buying and selling stocks, provides real-time monitoring and forecasting of solar storms. The SEC is located with other NOAA labs in Boulder, Colorado in the District of Mr. Udall, the Subcommittee Ranking Member sitting directly to my right.

Many of us may think of solar eruptions as a curiosity or as the source of the beautiful Aurora Borealis often observed by residents in the northern U.S. However, as highlighted by recent media attention, these solar events can have serious repercussions for Earth-based technological systems. They cause geomagnetic storms in the Earth's atmosphere that can disrupt communication systems, cause surges on electric power grids, and be harmful to airline passengers and astronauts. NOAA's SEC provides vital space weather forecasts for civilian industries concerned with these effects. Additionally, SEC forecasts are used by the Air Force to provide tailored recommendations for military users concerned with space weather. For example, I believe the current space storm was predicted a good two days before it began.

Despite its important role in protecting the Nation's technological systems from geomagnetic storms, some here in Congress have proposed to reduce or eliminate funding for NOAA's SEC. In the House fiscal year 2004 appropriations bill for NOAA, SEC funding levels are 35 percent below the Administration's request of $8 million. Of even greater concern, the Senate Appropriations Committee bill contains no funding for SEC and includes the suggestion, without any justification, that the Air Force or the National Aeronautics and Space Administration, better known as NASA, should take on the duties of predicting space weather.

Today, we will hear from representatives of NOAA, the Air Force, and NASA about the roles of each agency in monitoring and forecasting space weather. Then we will hear from representatives of three industries that rely on SEC forecasts: the electric power grid industry, the airline industry, and the communications satellite industry. These experts will help us to better understand the impact of space weather on the Earth and its surroundings and to examine the question of who should be responsible for forecasting it.

Before we hear from our Ranking Member and our witnesses, I wanted to show a short movie clip of the most recent solar flare to set the mood for today's hearing. So we will now show that. I am not quite sure how that is going to show up in the transcript of the hearing, but we will take a quick look.

[Video]

Chairman Ehlers. Thank you very much. If I might mention yesterday, just out of curiosity, I went to the site, the solar site, and looked at one of the images. I took my little ruler and measured the diameter of the sun and the size of the flare compared to the sun. Then did a quick mental calculation. I can't guarantee this is

accurate, and I probably shouldn't even say it, but my quick mental calculation indicated that the size of the flare, as apparent from that particular picture, was approximately 60 Earth diameters. That gives some startling idea of the scale of this. If the Earth had been there, it would have been an insignificant dot compared to the size of the flare. And that indicates the strength of the storms that we deal with.

Before I will recognize my Ranking Member, I also want to mention that we are going to have problems with the House schedule today. I understand that we are likely to have a vote in approximately 20 minutes, and unfortunately, we are very Pavlovian here; when the bells ring, we go vote. We will simply have to suspend the hearing while we go vote. We may well be interrupted by other votes later, but we will try to proceed as expeditiously as we can.

The Chair now recognizes Mark Udall, the Ranking Minority Member on the Environment, Technology, and Standards Subcommittee for his opening statement.

[The prepared statement of Chairman Ehlers follows:]

Prepared Statement of Chairman Vernon J. Ehlers

Good morning! Welcome to this oversight hearing entitled, "What Is Space Weather and Who Should Forecast It?" As a physicist, I must admit that, when we began to plan for this hearing last month, I did not think it would garner much attention outside the scientific community. However, thanks to divine intervention, we now have major solar storm activity to coincide with the hearing. We hope the lights will stay on, and our webcast capabilities will not be impacted.

The purpose of the hearing is to examine the National Oceanic and Atmospheric Administration's (better known as NOAA) Space Environment Center. This center, abbreviated SEC, provides real-time monitoring and forecasting of solar storms. The SEC is located with other NOAA labs in Boulder, Colorado, in the district of Mr. Udall, the Subcommittee Ranking Member.

Many of us may think of solar eruptions as a curiosity, or as the source of the beautiful Aurora Borealis often observed by residents in the northern U.S. However, as highlighted by recent media attention, these solar events can have serious repercussions for Earth-based technological systems. They cause geomagnetic storms in the Earth's atmosphere that can disrupt communication systems, cause surges on electric power grids, and be harmful to airline passengers and astronauts. NOAA's SEC provides vital space weather forecasts for civilian industries concerned with these effects. Additionally, SEC forecasts are used by the Air Force to provide tailored recommendations for military users concerned with space weather.

Despite its important role in protecting the Nation's technological systems from geomagnetic storms, some here in Congress have proposed to reduce or eliminate funding for NOAA's SEC. In the House Fiscal Year 2004 appropriations bill for NOAA, SEC funding levels are 35 percent below the Administration's request of eight million dollars. Of even greater concern, the Senate Appropriations Committee bill contains no funding for SEC and includes the suggestion, without any justification, that the Air Force or NASA should take on the duties of predicting space weather.

Today we will hear from representatives of NOAA, the Air Force and NASA about the roles of each agency in monitoring and forecasting space weather. Then we will hear from representatives of three industries that rely on SEC forecasts—the electric power grid industry, the airline industry, and the communications satellite industry. These experts will help us to better understand the impact of space weather on the Earth and to examine the question of who should be responsible for forecasting it.

Mr. Udall. Thank you, Mr. Chairman. Good morning to the panel and all of you who have assembled here to attend this important hearing. I want to begin by thanking the Chairman for holding this hearing. And of course, I have to thank him, also, for his impeccable timing. He managed to arrange for the sun spot activity last week to occur and then the solar flare this week has really given us a firsthand understanding of the importance of space weather and the need for the space weather forecasting services provided by NOAA's Space Environment Center, the SEC. And I would think, Mr. Chairman, this SEC is at least as important as the other SEC, particularly over the long-term as we have learned more about space weather.

Sunspots, geomagnetic storms, and solar flares, the phenomena of space weather, used to be a topic solely in the province of space scientists. While we have experienced the effects of these phenomena in the past, we had no ability to monitor or forecast these storms or to anticipate their likely effects. Some of you here know about the large solar flare that was generated in 1859, September of 1859, which shorted out telegraph wires in the U.S. and in Europe. And caused numerous fires.

Today, because of the importance of communications, electricity, and transportation to our daily lives, a similar storm would have devastating impacts in the absence of space weather forecasting. Satellites, transformers and transmission lines, and the billion dollar infrastructure that supports these essential services, are all vulnerable to space weather events. The SEC's forecasts enable government and private sector operators to take actions to minimize disruptions in service and damage to critical infrastructure.

The SEC's annual budget, really of a mere $8 million, seems modest when we evaluate it in the context of the Nation's investment in space weather monitoring and research and in comparison to the billions of dollars of infrastructure and services that are vulnerable to space weather events.

After investing millions of dollars and many years of research on space weather, we are now able to monitor solar storms and forecast their nature and intensity. Eliminating the SEC or drastically cutting its budget does not save money; it actually wastes taxpayer investments in research by cutting off the service that is currently delivering real benefits. Cutting the SEC's budget reverses, in my opinion, and I believe the opinion of many people here and people around the country, our progress in space weather forecasting, putting billions of dollars of infrastructure and services at risk.

This committee, in my opinion, should endorse the Administration's fiscal year 2004 budget request enthusiastically for those reasons. We should also continue to support research to improve space weather forecasting and to expand our knowledge of space weather and its potential impacts.

While the space weather forecasting discipline is still in its infancy, we still—it is no less essential than terrestrial weather forecasting. If we do not continue to invest in space weather forecasting, we will not only enjoy gazing at the Northern Lights, but we will risk experiencing widespread blackouts. Let us keep the lights on, the planes flying, and the communications flowing by fully investing in the Space Environment Center and its vital research and forecasting activities.

Mr. Chairman, I am also aware of a number of people with interests in space weather who wish to contribute to the record for this hearing. Therefore, I would ask unanimous consent that the record for this hearing be open—held open for 10 days to enable trade groups, private citizens, academics, and industry representatives to submit material to the record.

Chairman Ehlers. So ordered.

Mr. Udall. Thank you, Mr. Chairman.

In conclusion, the witnesses we have here today will help us to better understand the phenomena and potential impacts of space weather events on our government activities and on our economy. We have an excellent panel of witnesses for our hearing today. I want to thank you all for taking your time to appear before the Subcommittee this morning, and I do look forward to your testimony.

With that, Mr. Chairman, I would yield back any time I have remaining.

[The prepared statement of Mr. Udall follows:]

Prepared Statement of Representative Mark Udall

Good morning.

First, I would like to express my thanks to the Chairman for holding this hearing and to congratulate him on his timing. I don't know how you managed to arrange for the sun spot activity last week, Mr. Chairman, but the solar flare that reached Earth this past week illustrates the importance of space weather and the need for the space weather forecasting services provided by NOAA's Space Environment Center (SEC).

Sun spots, geomagnetic storms, and solar flares—the phenomena of space weather—used to be a topic solely in the province of space scientists. While we have experienced the effects of these phenomena in the past, we had no ability to monitor or forecast these storms or to anticipate their likely effects. For example, a large solar flare generated in September of 1859 shorted out telegraph wires in the U.S. and in Europe causing numerous fires.

Today, because of the importance of communications, electricity, and transportation to our daily lives, a similar storm would have devastating impacts in the absence of space weather forecasting. Satellites, transformers, and transmission lines—and the billion dollar infrastructure that supports these essential services are all vulnerable to space weather events. The SEC's forecasts enable government and private sector operators to take actions to minimize disruptions in service and damage to critical infrastructure.

The SEC's annual budget of $8 million seems modest when we evaluate it in the context of the Nation's investment in space weather monitoring and research and in

comparison to the billions of dollars of infrastructure and services that are vulnerable to space weather events.

After investing millions of dollars and many years of research on space weather, we are now able to monitor solar storms and forecast their nature and intensity. Eliminating the SEC or drastically cutting its budget does not save money. It wastes taxpayer investments in research by cutting off the service that is currently delivering real benefits. Cutting the SEC's budget reverses our progress in space weather forecasting, putting billions of dollars of infrastructure and services at risk.

This Committee should endorse the Administration's FY04 budget request, enthusiastically. We should continue to support research to improve space weather forecasting and to expand our knowledge of space weather and its potential impacts.

While space weather forecasting is still in its infancy, it is no less essential than terrestrial weather forecasting. If we do not continue to invest in space weather forecasting, we will not only enjoy gazing at the Northern lights, but we will also risk experiencing widespread blackouts. Let's keep the lights on, the planes flying and communications flowing by fully funding the Space Environment Center and its vital research and forecasting activities.

Mr. Chairman, I am also aware of a number of people with interests in space weather who wish to contribute to the record for this hearing. Therefore, I ask unanimous consent that the record for this hearing be held open for ten days to enable trade groups, private citizens, academics and industry representatives to submit material to the record.

The witnesses we have here today will help us to better understand the phenomena and potential impacts of space weather events on our governmental activities and on our economy. We have an excellent panel of witnesses for our hearing today. I thank you all for appearing before the Subcommittee this morning and I look forward to your testimony.

Chairman Ehlers. All right. If there is no objection, all additional opening statements submitted by the Subcommittee Members will be added to the record. Without objection, so ordered.

At this time, I would like to introduce our witnesses. We will begin with a special introduction by our Ranking Member, Mr. Udall.

Mr. Udall. Thank you, Mr. Chairman.

I want to take this time to acknowledge Dr. Hildner, who is here from my hometown of Boulder. Dr. Hildner is the Director of NOAA's Space Environment Center, the SEC, we have been mentioning. It is located in Boulder, as I mentioned. Dr. Hildner is a solar physicist who has worked for the High Altitude Observatory at NCAR, which is also based in Colorado, and at NASA's Marshall Space Flight Center in Alabama where he was the head of its Solar Physics Branch. He was an experimental scientist for Skylab and the Solar Maximum Mission during the 1970's. Dr. Hildner's scientific specialty is coronal and interplanetary physics about which he has published dozens of papers. Last year, the National Academy of Sciences called the work of the SEC "crucial." Under Dr. Hildner's steady watch, the Center continues to do its

crucial work very well, though recent budget cuts have made his job, and the jobs of NOAA's SEC staff more difficult.

I look forward to hearing from Dr. Hildner today as he helps us understand the importance of the Space Environment Center.

Welcome, Dr. Hildner.

Chairman Ehlers. And with that background, he can tell me later whether my mental calculation was correct.

Next, it is my pleasure to introduce Colonel Charles L. Benson, Junior. He is the Commander of the Air Force Weather Agency at Offutt Air Force Base in Nebraska. Following him is Dr. John M. Grunsfeld, Chief Scientist of the National Aeronautics and Space Administration, better known, of course, by its acronym, NASA. The next witness to be introduced by the honorable gentleman from Minnesota, Mr. Gutknecht.

Mr. Gutknecht. Well, thank you, Chairman Ehlers.

And I just want to welcome the panel. And Chairman Ehlers and I have had the opportunity to go out and visit the NOAA center out in Boulder, and we were duly impressed with the work that is done.

But it is my honor today to introduce John Kappenman from Metatech Corporation in Duluth, Minnesota. For those of you who have never had the chance to go to Duluth, Minnesota, it is one of the most beautiful cities, not only in Minnesota, but, I think, in the country. And if you don't get a chance to go to Duluth and visit the city, or go fishing in the beautiful waters of Lake Superior, at least you can go to my website and you can see a very large lake trout, which I caught there about two months ago. And I am very proud of that picture. And it is on the front page of my website.

For the past 27 years, Mr. Kappenman has researched electronic power system impacts caused by widespread geomagnetic field disturbances due to space weather. Since 1997, he has been employed with Metatech Corporation where he has advised folks worldwide on how to protect technology and power grid systems.

We all look forward to your testimony, and we welcome you here to Washington.

Chairman Ehlers. Thank you, Mr. Gutknecht.

I now understand the reason for the low lake levels in the Great Lake system: you are taking all of the fish out of them.

Next, it is my pleasure to introduce Captain Hank Krakowski. He is the Vice President of Corporate Safety, Quality Assurance, and Security for United Airlines located in Chicago, Illinois. And our final witness is Dr. Robert Hedinger. He is the Executive Vice President of Loral Skynet out of Bedminster, New Jersey.

As our witnesses should know, I presume you have been briefed, testimony is limited to five minutes each, particularly with a large panel like this, so we ask that you honor that request. And the little device here will show green for the first four minutes, yellow for the next minute, and then it turns red and all sorts of bad things happen. So we request that you try to keep it to five minutes each.

We will start with Dr. Hildner.

STATEMENT OF DR. ERNEST HILDNER, DIRECTOR, SPACE ENVIRONMENT CENTER, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Dr. Hildner. Good morning, Chairman Ehlers and Members of the Subcommittee. And thank you, Mr. Udall, for your kind introduction. As Director of the National Oceanic and Atmospheric Administration Space Environment Center, I am pleased to join these other witnesses and you today for the hearing on SEC's role in providing operational space weather information to the United States. We believe that NOAA is the proper home for the Nation's space weather service.

The extensive media coverage of recent radiation and geomagnetic storms clearly illustrates the Nation's need for accurate, reliable, and timely space weather forecasting. The effects of space weather, as you have already indicated, are far ranging. We know that airlines, the International Space Station, nuclear power plants, and at least one satellite were affected by the recent solar and space weather events. NOAA's SEC is the central focus of information for these kinds of events.

[Slide]

The next figure shows that—sorry. I am in control here, I think.

The next figure in the upper left shows the number of web accesses to our site. And that spike, over the last several days, reaches almost ten million hits on our website per day. Even before the recent activity and the media attention, customers hit our website over 500,000 times a day, and that is that lower part on the left. This figure also shows several of the NOAA products used by radio communicators, by airlines, by satellite operators, and the various alerts and warning products issued by SEC in the last week in the upper right. That figure, which is too small to see, actually tells you how many times we sent out alerts and warnings to our customers for our various products.

The recent media coverage of effects show there is a direct correlation between space weather and the U.S. economy. The direct global economic impact of space weather has been estimated very conservatively at $200 million per year. It is clear that the adverse conditions in the space environment can disrupt communications, navigation, air travel, national electric power distribution grids, and satellite operations. Improved space weather information will assure safety, reliability, and national security, as my colleagues today will discuss the benefits of space weather forecasting for their work.

However, I would like to highlight some important points about SEC, and one of those is the funding issue that has already been eluded to. I would be remiss if I didn't ask for your assistance. As you stated, the President's budget recommends $8.3 million for SEC in fiscal year 2004. The House Appropriations Committee has recommended $5.3 million, fully $3 million below the President's request, and the Senate Appropriations Committee has zeroed out funding entirely.

If either level below the President's request is enacted, there will be dramatic consequences for SEC and for the vital services that it provides. In response to the necessary staff reductions, NOAA will be faced with the choice of eliminating SEC's research and development activities or its services. If the R&D is cut, NOAA will not be able to improve products, models, and data streams needed by our customers. On the other hand, cutting services means that our customers will only receive data: no value added forecasts, no warnings, no alerts. Either choice means our effectiveness as a partner to other government agencies, such as NASA and the Air Force, will drop.

I need to emphasize that zeroing out SEC's budget will eliminate the one source of official U.S. space weather alerts, warnings, and forecasts. Space weather is defined by the National Space Weather Program as: "Conditions on the sun and in the solar wind, magnetosphere, ionosphere, and thermosphere that can influence the performance and reliability of space-borne and ground-based technological systems and can endanger human life or health."

SEC monitors, predicts, and forecasts conditions in the space environment and provides critical data, space weather data, to a variety of government and commercial customers. SEC also conducts research into phenomena affecting the space environment.

[Slide]

As the next figure indicates, space weather begins to—

space weather begins at the sun, and this animation shows the brightening of the sun, if you can run the movie, please----

[Video]

At the time of a flare, the spray of swift energetic

particles and a cloud of solar atmosphere depart the sun. When it arrives at Earth, it causes a geomagnetic storm, much as what happened on Wednesday morning this week.

SEC provides services, conducts research and development, and builds and maintains the computer systems, which support the Center's work. SEC's efforts are focused on areas where advanced applications can be brought to bear. We continually monitor. We continually monitor Earth's space environment with displays and software driven by the approximately 1,400 data sets that we receive everyday. The forecasters synthesize current data, climatological statistics, and relevant research results to formulate our daily predictions of solar and geophysical activity.

The future of SEC's vital role in conducting and coordinating research in its applications was discussed, as mentioned earlier, in a recent National Research Council report, a Decadal Research Strategy in Solar and Space Physics. In this report, the NRC recommended that NOAA assume full responsibility for space-based solar wind measurements and it should expand its facilities for integrating data into space weather models.

It looks like my time is up, so let me, in conclusion, say that the Space Environment Center is the Nation's unique civilian provider of critical, real-time information and forecasts on space weather that affect the United States' economic, national, and homeland security. We want to remain in that role.

Thank you, Mr. Chairman and Members of the Subcommittee, for this opportunity to testify on this extremely important matter to NOAA and the Nation. And I would be happy to answer any questions.

[The prepared statement of Dr. Hildner follows:]

Prepared Statement of Ernest Hildner

Thank you, Mr. Chairman and Members of the Subcommittee, for the opportunity to testify before you regarding the National Oceanic and Atmospheric Administration's (NOAA) activities at the Space Environment Center (SEC). I am Ernest Hildner, Director of the SEC and responsible for day-to-day management and long-term planning of the

Center. Space, from the Sun to Earth's upper atmosphere, is a strategic and economic frontier. This unique environment influences a multitude of human activities, and its understanding presents numerous scientific challenges. NOAA's SEC has a central role in conducting and coordinating research to understand the space environment to improve space weather services, and in providing critical operational space weather services for NOAA and the Nation. SEC strives to understand and predict the state of the space environment by accumulating data, running models, applying forecaster insight, conducting applied research, and utilizing research and data obtained externally to make operational forecasts of the space environment. Today I will provide an overview of space weather, of SEC and the services it provides, the budgetary and science challenges facing SEC, how SEC collaborates with other agencies, and the value of space weather forecasting and research. I am pleased to have the chance to discuss these topics today.

SPACE WEATHER

> "Space weather" refers to conditions on the sun and in the solar wind, magnetosphere, ionosphere, and thermosphere that can influence the performance and reliability of space-borne and ground-based technological systems and can endanger human life or health. Adverse conditions in the space environment can cause disruption of satellite operations, communications, navigation, and electric power distribution grids, leading to a variety of socio-economic losses. National Space Weather Program Strategic Plan, FCM-P30-1995.

The Earth lies 150 million kilometers, or 93 million miles, from the Sun, but it is immersed in the extended solar atmosphere. Our magnetic field resists the continual outflow of ionized gas from the Sun, protecting us here at the surface. However, the Earth and its field represent an obstacle to the solar outflow. As a result, the geomagnetic field is compressed on the sunward side of Earth and drawn out away from the Sun to make a comet-shaped cavity. As shown in the artist's sketch below, the size of the boundary between Earth's dominion and the Sun's varies with the pressure exerted by the Sun's outflow.

<GRAPHIC(S) NOT AVAILABLE IN TIFF FORMAT>

Space weather storms are spawned by a variety of changes in solar outputs. First, the light from the Sun, at wavelengths both longer and shorter than the visible, can brighten abruptly. This light travels to Earth and affects the near-Earth environment just as we discern that a solar event has occurred. The photons from a solar flare produce a radio blackout, at some frequencies, by changing the character of the dayside ionosphere and upsetting the delicate balance between the Sun's otherwise nearly constant output and Earth's ability to receive and ingest it.

Solar energetic particles comprise a second type of solar emission. These particles, predominantly protons, the nuclei of hydrogen atoms, are accelerated in coronal mass ejections and solar flares. They travel from the Sun slower than the speed of light, arriving near Earth as soon as tens of minutes after the solar eruption, the more energetic particles usually arriving first. The transit from sun to Earth may be slowed if the intervening magnetic fields do not provide easy Sun-to-Earth connection; then the

particles' arrival may be delayed many tens of hours. A major rise in energetic particle flux is commonly referred to as a radiation storm.

A third type of solar emission that has strong space weather impacts is magnetized plasma. When the continually evolving solar magnetic fields abruptly restructure themselves over a broad area, a portion of the outer solar atmosphere, the corona, can be ejected violently into space. These coronal mass ejections, clouds of ionized gas (solar plasma) and their embedded magnetic fields, fly away from the Sun at 400-1000 kilometers/second (1-2 million miles per hour). If Earth happens to be in the way, when the cloud strikes Earth's magnetic field 2 to 4 days later, then our geomagnetic field is compressed and may be eroded, resulting in a geomagnetic storm.

The following diagram depicts the times scales associated with these three types of space weather events.

<GRAPHIC(S) NOT AVAILABLE IN TIFF FORMAT>

The diagram illustrates the lead time between the occurrence of the parent event at the Sun and the terrestrial response; as well as the watches, warnings, and alerts issued by SEC. Thus, space weather has several kinds of storms much as meteorological weather has storms as different as tornadoes, blizzards, and hurricanes. A particular type of space weather storm has significant impacts on particular technologies so some customers are impacted by one type of space weather storm but not by another.

For example, strong x-ray bursts have a serious impact on high frequency (HF) communications on the dayside of Earth. ARINC, a provider of air traffic communications capabilities to commercial airline flights over the North Atlantic, ensures the safety of the movements of airplanes in flight with communications to the cockpit. They need to know when the HF communications are being affected due to natural conditions (space weather) or due to some equipment failure, and advise aircraft of appropriate frequencies to use. The United States Coast Guard is alerted by SEC staff during these same types of episodes as its LORAN navigation system will be unable to provide the required accuracy to its users during solar flare events. LORAN is intentionally made unavailable during these disturbed space weather conditions.

During bursts of solar energetic particles, the second type of space weather storm, the potential for biological damage due to elevated solar radiation increases. The NASA Space Radiation Analysis Group is responsible for assuring that humans in space not receive anything beyond the lowest reasonable radiation dose. They will advise the Flight Surgeon at NASA's Johnson Space Center to alter the activity plan for the crew if those activities involve leaving the space craft (for an extra-vehicular activity, or EVA), or suggest moving the crew to the most highly protected area of the Space Shuttle or International Space Station during the space weather radiation storm. NASA requires forecasts and specifications of radiation that affects both humans and equipment in space.

Another witness will discuss the effects of radiation storms and communications degradation on the airline industry.

Satellites in orbit and during the launch are at risk from radiation storms, and I am pleased to see that you have a witness to discuss those effects of space weather as well.

The third type of space weather storm, caused by the interaction between the onrushing magnetized plasma from the Sun and Earth's own magnetic field, is particularly menacing. This geomagnetic storm can be thought of as the space weather version of a strong hurricane, as it has very widespread impacts across a large number of systems and users. Somewhat like hurricane clouds are monitored from satellites, this plasma cloud can be seen as it leaves the Sun and it is probed internally as it is about to make "Earthfall."

When a coronal mass ejection occurs, forecasters at SEC analyze the direction of the ejectum to determine whether it is Earth-bound and estimate the kinetic energy associated with the event. As it takes a few days for the cloud to reach Earth, there is time for users to take preventive or mitigating action. One of today's witnesses will discuss the effects of geomagnetic storms on the electric power grid.

SEC has been called upon to help investigate possible environmental causes for disasters. The recently active Shuttle Columbia Accident Investigation Board asked for testimony to rule out the possibility that a radiation storm could have affected the Shuttle's computers during reentry. More recently, there were inquiries whether the electrical blackout of the Northeast on August 14, 2003, was caused by a space weather geomagnetic storm. SEC saw no evidence that it was. Ironically, however, as the grid was being brought back up to capacity, on August 18 there was a strong geomagnetic storm that hampered the ability of the operators to return to normalcy.

Another system impacted during geomagnetic storms is the Wide Area Augmentation System (WAAS) of the Federal Aviation Administration, designed for aircraft navigation en route. The WAAS technology relies on the use of the Global Positioning System (GPS), and GPS accuracy is adversely affected during geomagnetic storms. In the current solar cycle, the space weather storm of July 14-15, 2000, was by many measures the most serious. During this storm, the "Test-bed" WAAS was unable to determine the position of a receiver on an airplane to the accuracy required; as a result of the storm, slight changes were made to the WAAS model based on data received during that solar activity.

The Space Weather Operations group at SEC issues alerts, warnings, and watches of space weather storms, on a 24/7 basis. Warnings of all three types of space weather storms are issued when there is high probability of occurrence. Warnings for radiation and magnetic storms are aided by the ability to detect the incoming solar wind from a satellite one million miles upstream, the Advanced Composition Explorer (ACE). This sentinel allows for a few minutes advance notice of radiation storms, and up to one hour lead time for magnetic storms. However, it does not offer any benefit for radio blackouts.

Space weather events such as radio blackouts, radiation storms, and geomagnetic have affected various technologies and systems in sometimes spectacular ways. During the last solar cycle, a geomagnetic storm caused the Hydro-Quebec power grid to black out on March 13, 1989, leaving six million without electricity for nine hours. The big storms of March 1989 and July 2000 sent engineers back to their drawing boards hoping to design better systems to lessen the damage. A space weather radiation storm in August 1972 could have been even more damaging, possibly lethal. This event occurred between the lunar flights of Apollo 16 (April 16, 1972) and Apollo 17 (December 16, 1972). Biologists have calculated that the radiation received by astronauts, had they been on the

moon at the time of the storm, would have caused a quick death. Good luck averted a disaster.

The frequency of occurrence of space weather storms, and the possible consequences of the storms, are indicated in the NOAA Space Weather Scales document attached to this testimony and available on SEC's website at http://www.sec.noaa.gov.

SEC OVERVIEW

What we now call "space weather" began to affect widely used technology during World War II, disrupting the newly developed communication and radar systems. After the War, the Central Radio Propagation Laboratory was set up in the National Bureau of Standards in Boulder, Colorado, coalescing federal activities dealing with space weather. A portion of this unit, by then named the Environmental and Solar Data Service, was folded into the Environmental Science Services Agency (ESSA) when it was formed in the 1960s. Daily forecasting of the space environment for the public commenced in 1965. ESSA was rolled into NOAA when NOAA was formed in 1970, and the SEC is the result.

NOAA's mission "To understand and predict changes in the Earth's environment. . .to meet our nation's economic, social, and environmental needs" includes space weather. Just as NOAA's tropospheric weather service does for its customers, NOAA's space weather service monitors and predicts conditions in the space environment for its customers. SEC carries out its role as the Nation's official source of space weather alerts and warnings under various legislative mandates, statutory authorities, and Department of Commerce Reorganization Plans that gave the authority to monitor and predict the space environment to NOAA. Currently, SEC is both a research laboratory in NOAA's Office of Oceanic and Atmospheric Research (OAR) and one of the National Weather Service's (NWS) National Centers for Environmental Prediction. SEC's products are distributed via e-mail, its Web site, the NWS Family of Services, time and frequency standards radio stations WWV and WWVH, and the NOAA Weather Wire; pager service to notify customers when SEC issues an alert is available from a commercial provider.

SEC is also a member of the International Space Environment Service (ISES), which has 12 Regional Warning Centers around the world to take observations and provide services of regional interest. Daily, the regional centers share their data and tentative predictions with SEC, which synthesizes the information and, as the World Warning Agency, issues the global forecast of space weather conditions. ISES traces its parentage to the International Council of Scientific Unions; its Regional Warning Centers are funded by their host countries.

NOAA's space weather service is analogous to its tropospheric weather service, and both antedate the formation of NOAA itself. Both serve civilian government, public, and industrial users, and both have links to military and academic partners. For both services, NOAA was deemed to be the proper home. Using NOAA's and others' sensors, the SEC continually monitors and daily forecasts Earth's space environment and provides accurate, reliable, and useful solar-terrestrial information to their customers. SEC acquires, interprets, synthesizes, and disseminates monitoring information to serve the

Nation's need to reduce adverse effects of solar-terrestrial disturbances on human activities. It prepares and disseminates forecasts and alerts of conditions in the space environment. SEC conducts research into phenomena affecting the Sun-Earth environment including the emission of electromagnetic radiation and particles from the Sun, the transmission of solar energy to Earth via solar wind, and the interactions between the solar wind and Earth's magnetic field, ionosphere, and atmosphere. It conducts research and development in solar-terrestrial physics and in techniques to improve monitoring and forecasting, prepares high-quality data for national archives, and uses its expertise to advise and educate those affected by variations in the space environment. When events warrant, watches, warnings, and alerts are issued for the use of operators whose systems may be adversely affected by space weather storms. These user groups are private, commercial, government, and military operators, concerned with electric power distribution, high-frequency radio communications, satellite operations, astronaut protection, radio navigation, and national security.

The SEC, however, faces a number of challenges to meeting the needs of the user groups mentioned above. These challenges include budgetary challenges, particularly the potential of cuts in the President's budget request for SEC in the FY 2004 appropriations bills; and, scientific challenges.

The President requested $8.291 million total for the SEC in FY 2004. However, the House Appropriations Committee has recommended FY04 funding of $5.298 million for SEC, while the Senate Appropriations Committee zeroed out funding for SEC. If the House Committee level of $5.298 is enacted, there will be dramatic consequences for SEC and the vital services that it provides. The House mark of $5.298 million would support staffing of only about 25 FTEs, down from the 53 FTEs requested in the President's budget. In the short-term, most non-labor SEC costs are fixed.

Downsizing to the House Appropriation's Committee's recommended level, NOAA and SEC would attempt to preserve, as much as possible, the Nation's investment in the current space weather monitoring network by continuing to acquire, ingest, process, disseminate, and provide to archives the copious data with breaking the continuity of 30 years worth of measurements. This activity currently consumes about half of SEC's budget. Therefore, the shortfall created by an appropriation of $5.3 million would be borne either by research and development or by operations. NOAA and SEC will be forced to choose between the least undesirable of two options described below. In either case, SEC's data handling capability for ingest, processing, and archive would degrade. Eighty percent of Air Force alerts are driven by data provided only by SEC. The space weather data ingest and distribution network, identified by Homeland Security as a part of the Nation's Critical Infrastructure, would face imminent failure. For example, under each option, irreplaceable coverage gaps in real-time Solar Wind data would result, as satellite tracking shrinks, reducing alerts of geomagnetic storms affecting communications and GPS accuracy.

In the first reduction option, NOAA would eliminate SEC's research and development while continuing operational services with no improvement. Verification of and technique development to use Solar X-ray Imager (SXI) data would cease. When operational, the SXI takes images of the sun once a minute, providing additional data needed to more accurately forecast and alert users to space weather events. The Global

Assimilation of Ionospheric Measurements (GAIM) model currently being developed would not become available to civilian users. This model will provide global specification and forecasts of the ionosphere in 3-dimensions, where presently only in-situ measurements and climatological models are available. NOAA participation in the National Space Weather Program will cease. SEC will not be able to provide improvements to products and models supporting airlines, power companies, navigation, and other critical services. NOAA will be unable to transition into operations the physics based models developed at national centers and universities by NSF, NASA, and DOD-supported scientists. In addition, SEC's website, the primary customer interface for the distribution of space weather data and information will not be improved and recovery from failure will be difficult.

In the second option, NOAA would eliminate SEC's operational space weather services while continuing research and development against the day that (improved) services can resume. NOAA would cease to issue official U.S. space weather alerts, warnings, and forecasts, information that is currently not provided by any other source. Unfortunately, reducing the current suite of products one-by-one saves very little until the last product is terminated. The infrastructure to support one product supports all, so there is little savings in reducing the number of products. Joint operations with the U.S. Air Force would stop, including providing back-up to the U.S. Air Force's classified space weather support to our armed services. Products supporting airlines, power companies, navigation, and other services and industries would not be prepared, issued, and updated. As noted for research and development, the SEC website would degrade and be prone to complete failure. Real-time operational data systems would be decommissioned.

SEC has several scientific challenges before it. An exciting effort is its work with academic and DOD partners to assimilate data into numerical models, similar to the significant assimilation challenge faced by the meteorological modeling community. The challenge combines computational science and physical understanding of the space environment and will lead to improvements in both. With successful "4-D data assimilation," the model outputs (space weather maps) will be more accurate and more skillful, therefore more useful to users of the services. SEC is working to ensure that space environment monitors designed for GOES and POES satellites provide useful and reliable data on every satellite. Researchers at SEC consult on and write requirements for space weather sensors and, when appropriate, on requirements for the satellites.

SEC has three Divisions; one for services; a second for research and development; and, a third to develop and maintain the computer systems which support the Center's work. The Research and Development Division derives its goals and targets from the needs of the Space Weather Operations Division. In turn, the space weather services products improve from the application of R&D. Having R&D and operational services in one Center encourages more frequent and more effective interaction and collaboration among the scientists, forecasters, and specialists at SEC. While forecasts, alerts, and warnings are routine for quiet and mildly unsettled solar conditions, when activity becomes intense, forecasters consult with the Center's research Ph.D.s about the forecast. This is because there are not yet good "rules of thumb" for how to deal with these situations, and the best expertise must be brought to bear on aspects of the problem. In addition, the pace of innovation and change is still very rapid in space weather, with researchers at SEC and

elsewhere playing a major role in developing models that, if they could be transitioned swiftly into operations, would bring us progressively closer to the goal of physics-based, numerical space weather predictions.

The Research and Development Division is grounded in understanding the fundamental physical processes governing the regime from the solar surface, through the interplanetary medium, into the magnetospheric-ionospheric regions, and ending in Earth's upper atmosphere. These processes determine the climatology and nature of disturbances in the solar atmosphere, in Earth's magnetic field, in the ionosphere, in the charged particle populations at satellite orbits, and in the atmospheric density at high altitudes (including low-Earth orbit). SEC's research, technique development and new sensor implementation are focused on areas where advanced applications can be brought to bear to improve space weather services. The staff has expertise spanning from solar physics to Earth's upper atmosphere and maintains close collaborations throughout the larger research community. They publish regularly in scientific journals, and work directly with the SEC Space Weather Operations and the Systems Division to develop state-of-the-art capabilities for the SEC forecast center. The group develops analysis tools for working with data from a variety of spacecraft, including the NOAA geosynchronous and polar orbiters, and spacecraft in the solar wind. Data access is provided through customized data-analysis routines and individualized displays. In addition to enhancing the utility and value of the primary data through research and analysis, the group explores sources of new data and improved monitoring to support Space Weather Operations. The group leads in the development of techniques to process and interpret both ground-based and space-based solar imagery, and has special expertise in solar X-ray imaging.

The Space Weather Operations Division is the Nation's official source of space weather alerts and warnings. The services center is staffed 24/7 with an operations specialist and, for ten hours a day, a forecaster They continually monitor Earth's space environment with displays and software driven by the approximately 1400 data streams received each day. Forecasters synthesize current data, climatological statistics, and relevant research results to formulate their daily predictions of solar and geophysical activity. Operations specialists ensure data integrity and timeliness; verify event validity and issue Alerts, Watches, and Warnings; and update announcements on the Geophysical Alert Broadcasts over radio station WWV and WWVH.

The Systems Division is responsible for: IT system architecture; computer security; developing or acquiring, and maintaining, the computer hardware and software to routinely ingest data; populating the data bases; the hardware and software for disseminating data and products to customers and to the archive; and providing computer configuration control and redundancy for operational reliability. In addition, Systems Division personnel provide system administration and support to internal users, while responding to IT directives from the NOAA and OAR Chief Information Officers, and working with administrators of the several local Internet services. The Division operates the receiving antennas at the prime and back-up Boulder sites, and has personnel on-call at all times to attend to hardware and software failures which affect the functions of the forecast center.

SEC performs a vital role for the Nation in conducting and coordinating research and its application. The recent National Research Council report—A Decadal Research

Strategy in Solar and Space Physics (2003), recommended that NOAA should assume full responsibility for space-based solar wind measurements, expand its facilities for integrating data into space weather models, and, with NASA, should plan to transition research instrumentation into operations. As discussed in the National Space Weather Program Implementation Plan (2000), interagency programs cannot succeed in meeting the Nation's needs without NOAA SEC observations, research, model development, and transition to operations. And, as emphasized in the Department of Defense's (DOD) National Security Space Architect Study (2000), NOAA's current and planned activities are essential to meet DOD's space weather needs.

In addition to the SEC's activities, it should be noted that three line organizations play roles in the NOAA Space Weather Program:

National Environmental Satellite, Data, and Information Service (NESDIS), National Weather Service (NWS), and Office of Oceanic and Atmospheric Research (OAR), with some interest and support from the National Ocean Service. They cover the gamut of space weather activities from setting requirements for future space environment monitoring sensors and spacecraft, to monitoring the development of the sensors for flight on the Geostationary Operational Environmental Satellites (GOES) or Polar Operational Environmental Satellites (POES), to tracking and downloading data from NOAA and non-NOAA satellites, to processing and distributing the data, and finally to archiving the data. Many of these activities are contained within and are an integral part of NOAA's major programs, such as the GOES and POES programs, so that only the Space Environment Center (OAR) and part of the National Geophysical Data Center (NGDC) in NESDIS are clearly identified budget structures tied directly to NOAA's space weather program. The requirements process also identifies observations needed in addition to the GOES and POES programs and programmatic plans are made for these platforms as well. NGDC is the sole archive of routine monitoring data of the space environment recorded on GOES, on POES, and on DOD's Defense Meteorological Satellite Program satellites. It is also the sole archive of space environment monitoring data recorded at DOD ground-based solar and ionospheric stations. As noted below, NOAA also works closely with other federal agencies and nations to obtain available real-time space weather data enabling more accurate and timely space weather services for the Nation.

COLLABORATION WITH PARTNERS

SEC works with a variety of partners to accomplish its mission.
Internally, cooperative ventures abound as graduate students, post-doctoral students, visiting scientists, Cooperative Institute fellows from the University of Colorado, and contractors all contribute to the effort at the Center. Additionally, SEC works with the Cooperative Institute for Research in Environmental Sciences, a NOAA Joint Institute.

SEC works closely with colleagues across government agencies and academia, in the U.S. and internationally, to understand the space environment and apply research results. Collaboration requires a great deal of coordination within the U.S. and internationally. Within the U.S. Government, the Office of the Federal Coordinator for Meteorology provides a mechanism for space weather coordination, including development and

implementation of the National Space Weather Program (NWSP). The National Aeronautics and Space Administration (NASA), the National Science Foundation (NSF), and the Departments of Defense (DOD), Interior (DOI), Energy (DOE), Commerce (DOC), and Transportation (DOT) are participants in the NWSP, which recognizes common interests in space weather observing and forecasting. Aware of the need for prudent employment of available resources and the avoidance of duplication in providing these services and support for agency mission responsibilities, the cooperating departments have sought to satisfy the need for a common service and research program under the NWSP. The NWSP's Implementation Plan sets out the expected data, research, and services contribution from each participating agency.

To provide its specification and forecast services, SEC works most closely with the U.S. Air Force Weather Agency's forecast center in Omaha, which provides services to U.S. military customers. NOAA civilians and uniformed NOAA Corps and U.S. Air Force personnel together staff the joint services center in Boulder. NOAA and USAF share their data without charge to each other, and confer every day before the daily forecasts are issued by the two agencies to their respective clients. The SEC provides centralized space weather support to non-DOD government users, such as NASA, and to the general public, such as the commercial airline industry. SEC operates and maintains a national real-time space weather database to accept and integrate observational data, to provide operational support and services in the space and geophysical environment, to provide services to public users in support of the national economy, and to serve as the U.S. Government focal point for international data exchange programs. The USAF provides unique and classified support to all DOD users. The Space Weather Operations Center (SPACEWOC) at the Air Force Weather Agency (AFWA) serves as the DOD focal point for space weather forecasting support and services. The USAF maintains a worldwide network of both ground-based and space-based observing networks to provide accurate, reliable, and timely support to military communications, surveillance, and warning systems. To avoid duplication, the two agencies share responsibilities to produce certain space weather databases, warning, and forecast products of mutual interest and benefit to each other. AFWA and SEC provide cooperative support and backup for each other in accordance with existing agreements.

NOAA procures, operates, and maintains the Space Environment Laboratory Data Acquisition System (SELDADS) as the national system for collection, integration, and distribution of solar-geophysical data received in real-time from ground-based observatories and satellite sensors. Collection, processing, monitoring, and storage of the data occurs continuously around the clock. Displays and interactive analyses of the data are used by SEC to provide alerts, forecasts, and data summaries to a user community consisting of industrial and research organizations and Government agencies in the United States and abroad.

The collaboration among space weather service providers and those who fund their research is closely coordinated and mutually beneficial. NASA and DOD conduct critical research and development activities that NOAA assesses and incorporates, as needed, onto its civil operations spacecraft. NASA's upcoming Living with a Star set of missions and their accompanying data and research are oriented toward improving space weather monitoring and improving techniques for understanding space weather effects and the inference of the physical processes that shape the space weather environment. These are

important because they enable the production of new physical models for improved predictability of the space weather environment and its evolution. The space industry also provides expertise to assist in various projects. Increasingly, collaborations with the private sector and foreign remote sensing operators provide data and information that NOAA and other government agencies such as the USDA, DOE, and DOI use to implement their respective missions.

SEC also works actively with partners in industry and other users on specific projects to identify research and forecast needs. For example, SEC has one active Cooperative Research and Development
Agreement with Federal Data Corporation (FDC) to develop a model of the wavelength-dependent changing solar brightness for customers interested in ionospheric changes and heating of the terrestrial atmosphere. NASA's Marshall Space Flight Center (MSFC) and SEC scientists, with others, issue and update the world consensus forecasts of the 11-year cycle of solar activity for the benefit of NOAA, NASA, DOD, and others; this is the forecast used by NOAA, NASA, DOD, and the international community for mission planning. Spaceweather.com, a website fostered and supported by MSFC, makes heavy use of SEC's data and products. The website exhibits data gathered from SEC. SEC is first in the site's list of ``essential'' links.

SEC also co-sponsors Space Weather Week annually with other government agencies such as the Air Force Research Laboratory, NSF Division of Atmospheric Science, and NASA Sun-Earth Connection Program. This event brings hundreds of users, researchers, vendors, government agencies, and industry representatives together in a lively dialog about space weather. Discussion focuses on recent solar and geomagnetic activity, specific space weather impacts, and our scientific understanding of this activity. The conference program highlights space weather impacts in several areas of the environment including ionospheric disturbances, satellite drag, auroral currents, geomagnetic storms and their solar drivers, radiation belts, and solar energetic particles. The conference registration fee covers almost the entire cost of the conference. The rest of the conference expenses are covered by NSF, specifically some costs for invited speakers, students, special guests and support for international partners to attend. SEC, the DOD Air Force Research Lab and NASA all assist with the planning of Space Weather Week, and representatives from industries impacted by space weather including those from electric power, commercial airlines, satellite operations, and navigation/communications are among frequent participants and contributors. The attached spreadsheet highlights comments SEC has received from users about impacts of space weather on their efforts.

VALUE OF SPACE WEATHER FORECASTING AND RESEARCH

In the last few years, there has been a large increase in society's need for space weather information, as geomagnetic storms and solar disturbances can impact a wide array of sectors and industries ranging from transportation to electricity generation. SEC's website receives on average more than 500,000 hits per day from commercial and public users. This number can triple during severe space weather events. SEC forecasts and research helps support a wide array of needs including

the U.S. power grid infrastructure, commercial airline industry, Global Positioning System or GPS, NASA human space flight activities, satellite launch and operations, and U.S. Air Force operational activities.

The direct global economic impact of space weather has been estimated at about $200 million per year. A one percent gain in continuity and availability of GPS information, which can be disrupted by space weather events, would be worth $180 million per year. DOD alone spends $500 million each year to mitigate space weather effects. In 1989, a space weather storm caused such significant orbital decays that the Air Force Space Command lost track of 1,300 of the 8,000 objects orbiting in space that it was tracking. In addition to the potential harm radiation from a space weather event can cause astronauts and sensitive electrical equipment in space, these rapid changes in flight paths of space debris could be potentially harmful should they intersect with the paths of astronauts or satellites in space. In March 1989, seven geostationary satellites had to make 177 orbital adjustments in two days, more than normally made in a year. Such wear reduces the satellites' useful lifespan. Destruction of AT&T's Telestar satellite by a severe weather event in 1997 disrupted TV networks and part of the U.S. earthquake monitoring network, and forced renegotiation of the sale of Telestar, resulting in a drop of $234 million in value. Submarine, continental cables, and parts of fiber optic cable systems have all been known to fail or be overloaded as a result of space weather.

Geomagnetically-induced currents can disrupt or wipe out electrical systems through power surges that cause network supply disruptions, transformer damage, and wear-and-tear on other components. As we apparently witnessed this summer during the blackout in the north, a single failure in the power grid can escalate into cascading damages and outages. Oak Ridge National Laboratory estimates that a blackout in the Northeast caused by geomagnetic storms could result in a $3-6 billion loss in Gross Domestic Product (GDP). A geomagnetic storm in 1989 caused $13.2 million in damage to power systems operators in Quebec, and another $27 million to power operators in New Jersey. In addition, the disruption creates additional impacts for power customers who lose electricity. After 1989, Hydro-Quebec spent $1.2 billion on capacitors to prevent potential space weather disruptions. A current, induced by severe space weather, in a liquefied gas pipeline that ignited when two trains passed over it is the suspected cause of an accident that killed over 500. Preventative measures, based on early forecasts from the SEC and its partners, can help mitigate the need for such costly alternatives as shielding power lines. One recent estimate suggested that the use of good forecasts by the power industry could save the U.S. $365 million per year, averaged over the solar cycle.

Not only do we depend more heavily on systems that can be adversely impacted by space weather, new systems and new modes of operation using old systems vulnerable to space weather have proliferated. Satellites are becoming smaller and cheaper because of reduced component size and increased computer speeds. Economic competition drives the need to reduce shielding and redundancy, but these changes leave satellites more vulnerable to space weather disturbances. U.S. airlines are offering passengers the convenience of non-stop flights over the North Pole to Asian destinations; these flights (and research flights in Antarctica) sometimes experience air traffic control difficulties due to space weather. During a March 2001 space weather storm, 25 flights were rerouted to avoid the Poles because of the increased radiation risk.

National policy and defense planning have resulted in increased reliance on the use of commercial systems to gather information and move it between the United States and troops and ships in hot spots around the world. However, experiences during severe conditions of the last solar cycle indicates that some users may experience performance failures and degraded results during times of high solar and ionospheric activity. The nation is also placing large numbers of astronauts into radiation-vulnerable orbits for unprecedented periods of time during the assembly and operation of the International Space Station. Our increased need for improved space weather information to insure safety, reliability, and defense are inevitable outcomes of our growing use of space-weather-sensitive systems.

SEC has been keeping up with the changes, responding to new customer needs, research breakthroughs, and the changing face of space weather services. Among several successes, it has transitioned physics-based numerical models into the operational space weather service. It was possible to use the first of these university-developed models only when real-time solar wind data from upstream of Earth became available to drive them. Now forecasters get numerical guidance, much as meteorological forecasters do. Model output can be disseminated to provide customers with the space weather analogs of meteorological weather maps, showing event locations and intensities of computed fronts and boundaries. SEC has designed website to make it user-friendly for a range of audiences, from electricity producers to teachers and the media.

A solar x-ray imager on GOES-12 was made operational in 2003, funded as a USAF-NASA-NOAA partnership, and has provided images of the solar corona at a rate of once per minute. Images are able to show visible coronal changes that signal events on the Sun which will later cause space weather storms. This imager is the first of its kind, and it shows more capability in imaging the Sun for forecasting purposes than any solar imager to date. Automating the extraction of information from these images and incorporating the information into specification and forecast algorithms is already shedding light into the causes of solar wind and eruption events hazarding Earth. However, on the morning of September 2, 2003, the GOES-12 SXI instrument automatically transferred into an instrument safe (non-operational) mode. Two attempts were made to raise instrument voltages to their normal operating levels, but both attempts failed. Development of plans to return the SXI to limited operations is underway.

SEC is also active in developing products and services for the next generation air transport system. Working with both the commercial airlines and the FAA, SEC is formulating new products to serve airline operations of the future. That future is certain to include higher flying and trans-polar air routes as each allows for a faster more profitable trip. Particular issues that are impacted by space weather are navigation, radio communication, and radiation to the passengers and crew. Recent work with the FAA's User Needs Analysis Team (UNAT) has led to the implementation of SEC alerts and warnings into the operational planning for commercial airlines on trans-polar routes. Specifically, communications from air to ground, and the management of the radiation environment are points of concerns for the FAA. SEC has worked to supply the appropriate real-time information to be used by aircraft dispatchers.

CONCLUSION

In conclusion, Mr. Chairman and Members of the Subcommittee, NOAA is pleased to have had the opportunity to provide you an overview of space weather and SEC, our collaborative activities with our partners, and the value of space weather forecasting and research. We look forward to continuing our efforts to provide a critical service for our nation by providing cutting-edge research and forecasts in the space weather arena. I would be happy to answer any questions you may have.

Chairman Ehlers. Colonel Benson.

STATEMENT OF COLONEL CHARLES L. BENSON, COMMANDER, AIR FORCE WEATHER AGENCY

Colonel Benson. Good morning. I am honored to appear before you today to address this committee on a matter critical to our nation: space weather. I am also pleased to be joined by this distinguished panel of witnesses, including my partner to my right in operational space weather services, Dr. Hildner, Director of the Space Environment Center, otherwise known as SEC, National Oceanic and Atmospheric Administration.

The Air Force Weather Agency, known as AFWA, and SEC operate complementary space weather forecast centers. Over the last several decades in which the Air Force and NOAA have analyzed and forecast space weather for operational users, we have learned a valuable lesson: space weather is complex and costly. Our solution has been to leverage each other's resources, capabilities, and expertise, achieving efficiency by concentrating on those things we each do best. In simplest terms, AFWA is responsible for military and national intelligence support. SEC supports civilian and commercial users.

At AFWA, our focus has been on providing military war fighters and DOD decision-makers with mission-tailored space weather impact products. AFWA is the sole operational space weather support organization in the Department of Defense. To maintain our close working relationship, **AFWA has staffed a** small contingent of Air Force weather personnel at SEC in Boulder, Colorado since 1972. This operating location acts as a liaison to coordinate data sharing, forecast collaboration, and to develop new forecast techniques. Daily coordination is also accomplished through multiple teleconferences, which assures agreement on joint space weather forecast products.

Another great advantage of our close working relationship with SEC is cost sharing opportunities. For example, the Air Force funded $18 million to develop the Solar X-ray Imager Sensor, now operational on a NOAA satellite. This new sensor now provides critical data to both forecast centers.

Lastly, AFWA relies on real-time data relay and processing, partial backup, and expertise and experience from SEC to provide DOD operators with high quality space weather analysis, forecasts, and warnings.

AFWA aggressively reviewed the space weather operations performed at SEC to determine if AFWA could assume their support responsibilities if the proposed funding cuts are realized. Our initial evaluation shows that there would be many significant challenges transitioning the data ingest, space weather models, applications, and computer and communication infrastructures. Meeting these challenges would be both time-consuming and very costly. In particular, the space weather research and technology transition expertise at SEC would take years to rebuild at AFWA. Furthermore, there are

security, policy, and resource issues of great concern, approval to operate and connect to military networks, Armed Forces Title 10 responsibilities providing services to commercial interests, and both manpower and operating fund limitations.

Our Nation is becoming increasingly dependent on space technology. Although the science of space weather is still in its infancy, it has been compared to the meteorological capability of this country in the 1950's, we are on the verge of improved capabilities from new models and data sources, which will provide more accurate space weather services. SEC is at the forefront of this movement. The Nation's investment in space weather capabilities will yield great future dividends, just as the investment in terrestrial weather 50 years ago is paying off today in the Nation's ability to anticipate extreme weather and then mitigate its effects.

The synergy of the two complementary space weather forecast centers at SEC and AFWA have proven to be a national asset to the security and prosperity of the United States. We urge this committee to advocate for a healthy and stable SEC so this critical capability for military and civilian users will continue into the future.

I look forward to addressing all of your questions later.

[The prepared statement of Colonel Benson follows:]

Prepared Statement of Colonel Charles L. Benson, Jr.

Introduction

I am honored to appear before you today to address this committee on a matter critical to our nation: space weather. I am also pleased to be joined today by one of my partners in operational space weather services, Dr. Ernest Hildner, Director of the Space Environment Center (SEC), National Oceanic and Atmospheric Administration (NOAA).

Overview of Air Force Space Weather Services

The Air Force Weather Agency (AFWA) has the sole responsibility to provide military space weather services to all Department of Defense (DOD) agencies and units, as well as to the National Intelligence Community. Our mission is two-fold: to collect space weather data from DOD ground- and space-based sensors; and to provide environmental battlespace awareness through mission-tailored analyses, forecasts, and warnings of mission-impacting space weather to operators, warfighters, planners and decision-makers from command level down to individual units. To accomplish our mission, AFWA operates the Space Weather Operations Center, or Space WOC, the Nation's only military space weather analysis and forecast center, located at Offutt Air Force Base, Nebraska. We also operate a global network of optical and radio solar observatories, and maintain an intercontinental network of space weather sensors feeding data to the Space WOC. AFWA employs sixty-four (64) military and contractor personnel at the Space WOC and other locations, including thirty (30) personnel stationed at the solar observatories around the world. In addition to the personnel costs, AFWA committed $10.9 million dollars in Fiscal Year 2003 to operate, upgrade and improve the Space WOC and solar observatories, and to collect data from DOD ground- and space-based sensor networks. AFWA is dedicated to providing warfighters a complete situational awareness of the battlespace in which they operate. This enables the warfighters to

maximize their effectiveness while minimizing the risk to life, resources and mission impacts introduced by the natural space environment.

Users of Air Force Space Weather Products and Information

Users of AFWA's space weather services include every branch of service--Army, Air Force, Navy, Marine Corps and Coast Guard--and the National Intelligence Community, from leadership and senior decision makers to specific individual units. Success in every modern military operation depends upon at least one of the following space weather-impacted capabilities: long-distance radio or satellite communications for command and control, precision navigation and timing from Global Positioning System (GPS) signals, over-the-horizon or tactical radars, high-altitude manned aerial reconnaissance, orbiting spacecraft and sensors, and strategic space launch. AFWA provides analyses and forecasts of space weather impacts on these capabilities to DOD and National Intelligence Community leadership and operators. The National Oceanographic and Atmospheric Administration (NOAA) Space Environment Center (SEC) is a major user of Air Force space weather data. AFWA provides this data in accordance with collaborative partnering agreements to facilitate its space weather support to the commercial and civilian communities.

Relationship Between AFWA, SEC, and NASA

AFWA and SEC are partners in providing space weather service to the Nation. Each has clearly defined roles and responsibilities, leveraging the capabilities of the other to realize significant cost and resource savings. In simplest terms, AFWA is responsible for military and national intelligence support--SEC supports civilian and commercial users. The Air Force divides space weather services into five basic steps: (1) observe, measure, and collect space weather data, (2) analyze the data, (3) specify and forecast the space environment, (4) tailor analyses and forecasts to meet individual user needs, and (5) integrate space weather information to users' decision and execution processes. AFWA's primary focus on information tailoring and integration are the two steps providing the greatest benefit and value to the warfighter. SEC emphasizes characterization and forecasting the natural space environment.

AFWA relies on SEC in three crucial areas to accomplish our space weather mission: 1) unique data, analyses and forecasts provided by SEC; 2) partial backup capability; and 3) SEC's unique space weather experience and expertise. The Space WOC relies on ground- and space based magnetometer data provided through SEC to analyze, warn and forecast global geomagnetic activity important to the national intelligence agencies and to the North American Aerospace Defense Command (NORAD). AFWA also depends on alerts of geomagnetic activity from NOAA satellites and solar activity forecasts provided by SEC to warn and forecast impacts to specific military communications links. As identified in the National Space Weather Program Implementation Plan, the AFWA and SEC forecast centers provide limited back-up operations for each other in the event of computer equipment or communication outages. Current back-up consists of telephone notification of observed space weather events. Space WOC and SEC coordinate on forecasts and engage in multiple daily space weather teleconferences. These

teleconferences inject valuable insight into the science and art of space weather forecasting and allow AFWA to leverage the vast knowledge and experience of SEC scientists.

AFWA reciprocates in our partnership with SEC by sharing unique DOD space weather data and Air Force forecasts of geomagnetic activity. SEC utilizes solar images and radiographs from the solar observatories, particle data from sensors aboard military satellites, and ground-based DOD instruments in their operations. In addition, every six hours the Space WOC produces a forecast of geomagnetic activity from SEC supplied data. SEC in-turn uses these forecasts in the production of their products and services.

To facilitate and promote our close working relationship, AFWA established Operating Location-P (OL-P) co-located with SEC at Boulder, Colorado. OL-P personnel act as liaisons between SEC and AFWA, coordinate back-up policy and procedures between the two organizations, augment SEC forecaster manning, interact with researchers, ensure smooth and continuous data flow between both forecast centers, assist SEC researchers in establishing new data sources and ground data systems, and take part in developing new space weather forecast techniques benefiting both organizations. The complementary nature of the two missions allows both NOAA and the Air Force to realize cost sharing advantages to acquire needed data. SEC provides the Advanced Composition Explorer real-time tracking data to AFWA. The Air Force paid $18 million to develop the Solar X-ray Imager now operational aboard one of the NOAA Geostationary Operational Environmental Satellites. Additionally, AFWA pays the National Aeronautics and Space Administration (NASA) Jet Propulsion Laboratory (JPL) for ground-based space weather data from a global network of GPS receivers.

AFWA taking on the duties of SEC

Air Force Weather Agency aggressively reviewed the space weather operations performed at SEC to determine if AFWA could assume their support responsibilities if proposed funding cuts are realized. Our initial evaluation shows that there are many significant technical challenges transitioning the data ingest, space weather models and applications, and computer and communication infrastructures from SEC to the Space WOC. Meeting these challenges will be both time consuming and costly. Additionally, there are many critical issues and important policy considerations that would have to be addressed prior to assuming any commercial space weather services at AFWA. These include Armed Forces Title 10 responsibilities, security and accreditation affecting AFWA's approval to operate and connect to DOD communication networks, as well as significant manpower and funding resource issues. In particular, SEC's expertise and experience in satellite-based space weather measurements from NOAA spacecraft, and its one-of-a-kind space weather modeling applications, would be very difficult to reproduce at AFWA. The space weather research and technology transition expertise resident at SEC would take years to build at AFWA.

Impacts on Air Force and Military Ops

There would be an immediate and severe impact on military operations if the Space Environment Center no longer existed. Air Force Weather Agency’s ability to

characterize and forecast the space environment would be dramatically reduced, impacting space situational awareness, satellite and radio communications, space control, precision navigation and strike, high-altitude flight and space operations. Additionally, the loss of a back-up capability for the Space WOC would have serious implication on the AFWA continuity of operations plan. The loss of SEC expertise and decades of experience would likely decrease AFWA's space weather characterization and forecast accuracies. The closure of SEC would also result in a decrease in the rapid transition of new techniques and data sources into space weather forecast operations.

Summary

Over the last several decades in which the Air Force and NOAA have analyzed and forecasted the space environment for operational users, we have learned a valuable lesson: space weather is a complex and costly undertaking. Our solution has been to leverage each other's resources; achieving efficiency by concentrating on those things we each do best. Our nation is becoming increasingly dependent on space technology. Although the science of space weather is still in its infancy—which some have compared to the meteorological capability of this country in the 1950's—we are on the verge of improved capabilities from new models and data sources that will provide more accurate space weather services. SEC is at the forefront of this movement. The Nation's investment in space weather capabilities will yield great future dividends, just as the investment in terrestrial weather fifty years ago is paying off today. The synergy of the two complementary space weather forecast centers at SEC and AFWA has proven to be a national asset to the security and prosperity of the United States. One does not have to look very far to see that the United States is not the only "game in town" when it comes to the exploitation of the space environment. We urge this committee to advocate for a healthy and stable SEC so that this critical capability for military and civilian users will continue into the future.

Chairman Ehlers. Thank you.

Dr. Grunsfeld.

STATEMENT OF DR. JOHN M. GRUNSFELD, CHIEF SCIENTIST, NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Dr. Grunsfeld. Thank you.

Mr. Chairman, Members of the Subcommittee, thank you very much for the opportunity for NASA to testify before you today regarding the importance of space weather forecasting provided by the National Oceanic and Atmospheric Administration Space Environment Center and its impact on NASA programs.

Providing space weather data is an important operational service and has a wide range of customers both within the United States Government and in the private sector. My testimony today will focus on how NASA uses these critical data. I will speak to you both from a position as NASA's Chief Scientist, but also as a member of the Astronaut Corps, the group of folks who are most directly exposed to the effects of space weather,

and I should add, those few individuals who have ventured beyond 8,000 meters in altitude on Planet Earth.

Solar wind conditions, solar flares, coronal mass ejections, and subsequent geomagnetic activity, commonly referred to as "space weather," affect many more areas of NASA's activities than most people realize. Space weather can have significant adverse impacts on human health, spacecraft operations by increasing the intensity of the near-Earth radiation environment, the increased atmospheric drag on satellites, disrupting their orientation, reducing their lifetime, degrading UHF and high frequency communications, and the operation of the Global Positioning System signals that we use in our spacecraft. These effect the health of our astronauts in orbit, space engineering and research equipment, orbital altitude for spacecraft such as the Hubble Space Telescope, and ultimately, we use this information to design our spacecraft.

NASA's space and earth science missions routinely employ real-time forecasts from the NOAA SEC to make decisions regarding data collection, spacecraft operation, and even rocket launches. We use this information in the case of anomalies in spacecraft to determine whether it was space weather related or an engineering cause, and this is an important part of our activities to make sure that we maximize the scientific output of our resources.

The Chandra X-Ray Observatory and the recently launched Space Infrared Telescope Facility both use the SEC resources, observations of solar wind conditions and geomagnetic activity, as critical to their real-time input for spacecraft operations. In fact, in the recent solar activity, we have taken advantage of SEC observations to modify our planning for those scientific spacecraft.

At the NASA Johnson Space Center, the Space Radiation Analysis Group uses data provided by the SEC to determine the radiation environment in which NASA's crewed spacecraft will operate. NOAA has supplied space weather monitoring and forecasting information to NASA for every human space flight mission since Apollo 8. This information affects operational decisions, when to launch a particular mission, and when we would do space walking activities or extra-vehicular activities. Because of this—the information that the SEC provides, we can plan our missions and activities in such a way to minimize the radiation exposure received by astronauts on our vehicles.

Minimizing radiation exposure for Shuttle and International Space Station crews is imperative. NASA has sought the advice of the National Council on Radiation Protection and Measurements concerning radiation exposure limits for our astronauts and uses this advice in setting dosage limits. We are also guided by a principle that we call: "As Low as Reasonably Achievable." Without the data provided by the SEC, NASA would have to reassess its operations to protect against exposure to radiation events occurring without warning. And I should add that during this recent solar activity, we have changed some of our operational procedures based on SEC data to ensure the safety of our astronauts and the International Space Station.

Losing the SEC forecast that supports space flight missions would be like living along a coastal area without any hurricane forecasting capability. You would know the hurricane hit you, but you would have no advanced warning, no ability to take preventive actions, and no idea how strong it would be or how long it would last.

NASA has a long history of cooperation with SEC and its predecessor organizations at NOAA. The partnership has enabled SEC to expand its capabilities to support human space flight missions. We have supported the expansion of SEC services and functionality, specifically in data processing, so that they continue to support our Shuttle and ISS missions.

It is not within NASA's mandate as a research and development agency to provide the operational forecasting services currently provided by the SEC. In addition, the technical capacity, budget, and expertise required to perform this activity could not transition to NASA without impacting our ongoing space flight research and operations. The NOAA SEC has a unique complement of people, experience, and resources that allows it to provide a high level of service to the space weather customers. There are no other sources, either domestic or foreign, that can provide this type of support. The capability to monitor and forecast this environment should well remain with the agency that has the mission and the proven expertise to respond to all of these customers.

Thank you.

Dr. Grunsfeld.

STATEMENT OF DR. JOHN M. GRUNSFELD, CHIEF SCIENTIST, NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Dr. Grunsfeld. Thank you.

Mr. Chairman, Members of the Subcommittee, thank you very much for the opportunity for NASA to testify before you today regarding the importance of space weather forecasting provided by the National Oceanic and Atmospheric Administration Space Environment Center and its impact on NASA programs.

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Solar wind conditions, solar flares, coronal mass ejections, and subsequent geomagnetic activity, commonly referred to as "space weather," affect many more areas of NASA's activities than most people realize. Space weather can have significant adverse impacts on human health, spacecraft operations by increasing the intensity of the near-Earth radiation environment, the increased atmospheric drag on satellites, disrupting their orientation, reducing their lifetime, degrading UHF and high frequency communications, and the operation of the Global Positioning System signals that we use in our spacecraft. These effect the health of our astronauts in orbit, space engineering and research equipment, orbital altitude for spacecraft such as the Hubble Space Telescope, and ultimately, we use this information to design our spacecraft.

NASA's space and earth science missions routinely employ real-time forecasts from the NOAA SEC to make decisions regarding data collection, spacecraft operation, and even rocket launches. We use this information in the case of anomalies in spacecraft to determine whether it was space weather related or an engineering cause, and this is an important part of our activities to make sure that we maximize the scientific output of our resources.

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At the NASA Johnson Space Center, the Space Radiation Analysis Group uses data provided by the SEC to determine the radiation environment in which NASA's crewed spacecraft will operate. NOAA has supplied space weather monitoring and forecasting information to NASA for every human space flight mission since Apollo 8. This information affects operational decisions, when to launch a particular mission, and when we would do space walking activities or extra-vehicular activities. Because of this—the information that the SEC provides, we can plan our missions and activities in such a way to minimize the radiation exposure received by astronauts on our vehicles.

Minimizing radiation exposure for Shuttle and International Space Station crews is imperative. NASA has sought the advice of the National Council on Radiation Protection and Measurements concerning radiation exposure limits for our astronauts and uses this advice in setting dosage limits. We are also guided by a principle that we call: "As Low as Reasonably Achievable." Without the data provided by the SEC, NASA would have to reassess its operations to protect against exposure to radiation events occurring without warning. And I should add that during this recent solar activity, we have changed some of our operational procedures based on SEC data to ensure the safety of our astronauts and the International Space Station.

Losing the SEC forecast that supports space flight missions would be like living along a coastal area without any hurricane forecasting capability. You would know the hurricane hit you, but you would have no advanced warning, no ability to take preventive actions, and no idea how strong it would be or how long it would last.

NASA has a long history of cooperation with SEC and its predecessor organizations at NOAA. The partnership has enabled SEC to expand its capabilities to support human space flight missions. We have supported the expansion of SEC services and functionality, specifically in data processing, so that they continue to support our Shuttle and ISS missions.

It is not within NASA's mandate as a research and development agency to provide the operational forecasting services currently provided by the SEC. In addition, the technical capacity, budget, and expertise required to perform this activity could not transition to NASA without impacting our ongoing space flight research and operations. The NOAA SEC has a unique complement of people, experience, and resources that allows it to provide a high level of service to the space weather customers. There are no other sources, either domestic or foreign, that can provide this type of support. The capability

to monitor and forecast this environment should well remain with the agency that has the mission and the proven
expertise to respond to all of these customers.

Thank you.

[The prepared statement of Dr. Grunsfeld follows:]

Prepared Statement of John M. Grunsfeld

Mr. Chairman and Members of the Subcommittee, thank you for the opportunity to testify before you today regarding the importance of space weather forecasting provided by the National Oceanic and Atmospheric Administration (NOAA) Space Environment Center (SEC) and its impact on NASA's programs. Providing space weather data is an important operational service, and it has a wide range of customers, both within the United States Government and in the private sector. My testimony today will focus on how NASA uses these critical data. I will speak to you from my perspective both as NASA's Chief Scientist, and as a member of the astronaut corps—the group of people most directly exposed to the effects of space weather.

Solar wind conditions, solar flares, coronal mass ejections (CMEs), solar extreme ultraviolet emissions, and subsequent geomagnetic activity, commonly referred to as "space weather," affect many more areas of NASA operations and programs than most people realize. Space weather can have significant adverse effects on human health and spacecraft operations by increasing the intensity of the near-Earth radiation environment, increasing atmospheric drag, disrupting satellite orientation, and degrading UHF and HF communications and Global Positioning System (GPS) signals. These affect the health of our astronauts in orbit, space engineering and research equipment functionality, orbital attitude for spacecraft such as the Hubble Space Telescope, and ultimately, the way we design spacecraft.

NASA's Space and Earth Science missions routinely employ real-time forecasts from the NOAA SEC to make decisions regarding data collection, spacecraft operations, and rocket launches. NASA engineers and researchers use near, real-time SEC forecasts to analyze instrument and spacecraft anomalies, and separate cause and effect in the highly modulated environment of space. During solar-induced changes to the near-Earth radiation environment, NASA's in-space research instrumentation can become saturated by solar energetic particles, which can lead to anomalies. This has happened numerous times during the recent maximum phase of the solar cycle. One example comes from the Earth Science Mission Operations (ESMO) Project. The ESMO uses data provided by the NOAA SEC to determine whether spacecraft anomalies are the result of system malfunctions or space weather events. Being able to determine quickly that an anomaly was caused by space weather allows ESMO to avoid lengthy equipment shutdowns while engineers search for a cause. NOAA SEC is the only operational source for accurate, real-time information on the near-Earth space radiation environment. NASA uses the lessons learned from these experiences and the database of radiation measurements gathered by SEC to design spacecraft with more robust systems that can withstand space weather events.

The Chandra X-Ray Observatory and the recently launched Space Infrared Telescope Facility both use the SEC observations of solar wind conditions and geomagnetic activity

as a critical input to their real-time models of the Earth's radiation environment. These models allow us to adjust our operations to mitigate sensor degradation and data loss. The result is that NASA is able to ensure optimal scientific return from these two flagship missions. The SEC observations are also crucial to NASA-funded research exploring the Sun-Earth connection. The Sun affects the entire solar system, including all scientific data collection satellites.

At the NASA Johnson Space Center, the Space Radiation Analysis Group (SRAG) uses data provided by the SEC to determine the radiation environment in which NASA's crewed spacecraft will operate. NOAA has supplied space weather monitoring and forecasting information to NASA for every human space flight mission since Apollo 8. This information affects operational decisions, such as when to launch a particular Shuttle mission and when extra-vehicular activities (EVAs) can be safely conducted. Because of the information that the SEC provides, we can plan missions and on-orbit activities in such a way as to minimize the radiation exposure received by our astronauts and our vehicles.

Minimizing radiation exposure for Shuttle and International Space Station crews is imperative. NASA has sought the advice of the National Council on Radiation Protection and Measurements concerning radiation exposure limits for our astronauts, and uses this advice in setting radiation dosage limits. NASA's radiation protection efforts are further guided by the ALARA (As Low as Reasonably Achievable) principle. Without the data provided by SEC, NASA would have to reassess its operations to protect against exposure to radiation events occurring without warning.

Losing the SEC forecast that support space flight missions would be like living along a coastal area without any hurricane forecasting capability. You would know when the hurricane hit you, but you would have no advanced warning, no ability to take preventive actions, and no idea how strong it would be or how long it would last.The risk that radiation poses to our spacecraft and astronauts is borne out by past examples. For instance, in 1989 significant solar events impacted both the Space Shuttle and the Mir space station, along with other uncrewed spacecraft. In the spring of 1989, a solar flare, solar particle event, and a geomagnetic storm doubled the daily radiation dose for the Mir crew for two days, with elevated levels lasting for two weeks. The solar events increased atmospheric drag during the first day of STS-29. NORAD lost track of several space objects for time periods varying from days to weeks. Several satellites lost attitude control, while others tumbled. These space weather events also brought the northeastern United States' power grid close to collapse. In the fall of 1989, a second series of solar particle events again raised the dose of the Mir crew and damaged satellite solar arrays.

The information provided by SEC is critical to NASA today as we operate the ISS until the Space Shuttle returns to flight. NASA has some monitoring capability on the ISS that we rely upon to gauge the safety of the ISS environment for the crew. Although we have tools that allow us to measure the radiation exposure of the crew and vehicle on a periodic basis, we cannot monitor it constantly. This equipment was designed as a back-up to the radiation monitoring and forecasting data provided by SEC, which allow flight controllers to notify the crew of increased radiation exposure levels. The SEC provides NASA with critical real-time monitoring and forecasting of the radiation environment around the Earth. We use this information along with on board

instrumentation to assess the ISS radiation environment. In the current solar event, SEC forecasts gave us sufficient warning of a proton flux event to allow the ISS crew to shelter in areas of the ISS which provide more shielding protection from radiation.

NASA has a long history of cooperation with SEC and its predecessor organizations at NOAA. That partnership has enabled SEC to expand its capabilities to support human space flight missions. In the 1960s, NASA funded the development of the Solar Particle Alert Network (SPAN) to support the Apollo missions. NASA also supported the expansion of SEC services to support our Skylab missions. Most recently, we have helped SEC to modernize and add functionality to its data processing systems so that they can continue to support our Shuttle and ISS missions.

Building on the information and analysis provided by SEC, we have expanded our understanding of the impact of space weather on NASA's operations, and our ability to predict and respond to significant events. It is only in the past decade that we have realized that geomagnetic activity can enhance the outer electron belt, and increase radiation exposure for astronauts performing EVAs. During the same period, we have learned the important of CMEs with regard to solar flares in producing large proton events that can pose health risks to astronauts on orbit. NASA' Solar and Heliospheric Observatory (SOHO) has revolutionized our understanding of CMEs, providing real-time images of CMEs coming toward Earth. Perhaps most significantly, in the last several years, we have discovered definitive evidence of the magnitude and frequency of very large solar particle events over the past 400 years. These events were significantly larger than anything we have witnessed since humans started flying in space. It is likely that we will see a recurrence of solar particle events of a similar magnitude.

It is not within NASA's mandate as a research and development agency to provide the operational forecasting services currently provided by the SEC. In addition, the technical capacity, budget and expertise required to perform this activity could not transition to NASA without impacting our other ongoing space flight operations and research. The NOAA SEC has a unique complement of people, experience, and resources that allows it to provide a high level of service to its space weather customers. There are no other sources, either domestic or foreign, that can provide this type of support. As the United States continues to expand its reliance on space-based assets such as GPS, cellular communications, and digital satellite technology, the importance of understanding the space weather environment becomes even more critical. The capability to monitor and forecast this environment should remain with the agency that has the mission and the proven expertise to respond to all of these customers.

I sincerely appreciate the forum that the Subcommittee provided today to highlight the importance of space weather forecasting, and I look forward to the opportunity to respond to your questions.

Chairman Ehlers. And I thank you.

And I apologize for the bells ringing. We have not one, not two, but three votes on the Floor. I would estimate it will take us approximately a half an hour total. So we will recess at this point at the call of the Chair and return as soon as possible after the third vote. And I apologize to you for the interruption. The Committee is in recess.

[Recess.]

Chairman Ehlers. The Committee will come to order. I apologize that it took longer. The—we are having some political problems, which I know is very hard for you to believe. But we are hoping to pass the supplemental appropriation today, and there are some very strong feelings on both sides, so we have had some delay motions and votes.

We will proceed now with Mr. Kappenman.

STATEMENT OF MR. JOHN G. KAPPENMAN, MANAGER, APPLIED POWER SYSTEMS, METATECH CORPORATION

Mr. Kappenman. Thank you, Mr. Chairman and Committee Members.

I am here to represent the viewpoint of the electric power industry and the important threat that geomagnetic storms pose to this critical national infrastructure and the importance of the Space Environment Center forecasting and forecasting services that are rendered to the power industry for this important threat.

You have posed a number of very important questions. I will try and briefly cover the highlights of those, although I do provide more detail in the prepared testimony. The first question is the historic impacts of these large storms. And I will give you a very brief overview of a storm that occurred about 14 years ago, and in fact, was the last geomagnetic super storm that occurred and the nature of the impacts that were felt in North America on the power grid for that storm.

If we can start an animation here.

[Video]

This is just showing you 20 minutes of what I would call very bad space weather that day. And the important feature of this type of weather is that it is unlike terrestrial weather. You are seeing sudden onsets, planetary, continental impacts and—of that moving at phenomenal rates of speed.

Power systems are built to withstand certain types of weather, mostly terrestrial weather, but that is very regionally confined when it is severe. This sort of severe weather has, truly, a continental footprint, and that presents a very unique challenge to operations of power grids. In fact, the next slide here—I will start up an animation.

[Video]

These are the impacts that were observed by the U.S. power grid or North American power grid coincident with that previous 20 minutes of bad space weather. And in the case of Quebec itself, the entire province experienced a blackout from this brief period of activity. And in fact, the power system operators that day—this was the worst day of your life if you are a power system operator, because things happen so quickly. You have very little time to intervene. In the case of Hydro Quebec, they went from normal operating conditions to complete province-wide blackout in 92 seconds: no time to even assess what was going on, let alone try and do any sort of meaningful human intervention. Later on that day, if we will start up this animation, the storm got even more intense.

[Video]

And as you can see, it was well down into and across the entire U.S. for this 40-minute duration shown here. This storm lasted in excess of a day. And I am just showing you a few of the highlights from this activity. If we can go for—here we go.

[Video]

If we start up this animation, for that previous storm activity, this is what was observed in the U.S. as far as important power system operating anomalies. We barely hung on to the system in retrospect, the postmortems. Everybody agrees. We came very, very close to experiencing a very—potentially very widespread power system collapse that could have occurred in the U.S. that day.

The second question you posed, forecasts and how are they used. The short answer, power grids certainly do have operational procedures that they put in place in times of geomagnetic storms. They have both prepared actions that they do from advanced forecasts as well as actions that they do from nowcasts and updates on a continuous basis. These are provided, of course, from SEC or from commercial providers, like my company, that depend greatly on SEC data to provide even more detailed forecasts of what could occur.

The nature of recent discoveries was also asked. We certainly have learned a lot about the threat that is posed to the U.S. power grid infrastructure by space weather over the past few years. We certainly, and I imagine your constituents know, that—post-August 14 of this year that there is an awareness that there has been a decline in power grid infrastructure and investment. And that has done nothing but increase our vulnerability to space weather since that March '89 storm.

We know, also, that storms can be, perhaps, three to ten times larger in magnitude than what occurred in March '89 and that large U.S. blackouts are possible.

[Slide]

This is just one of many scenarios that we have studied for regions that could be blacked out. We are looking at the potential of blackouts that could exceed even that of the very large blackout that occurred just a few months ago. And there is no part of the U.S. power grid that is immune to this. It is just a matter of where does this intense phenomenon geographically lay down? How big is the footprint? And we know these footprints can be very, very large. And literally, we could impact over 100 million population in the worst case scenarios.

If there is no Center, clearly this would degrade the ability to counter some of the important impacts.

Thank you.

[The prepared statement of Mr. Kappenman follows:]

Prepared Statement of John G. Kappenman

The Vulnerability of the U.S. Electric Power Grid to Space Weather and

the Role of Space Weather Forecasting

I am grateful for the Committee's kind invitation to offer testimony today on "What Is Space Weather and Who Should Forecast It?" as the answer to this important question

has many possible implications and places the Nation at an important crossroad. It is only fitting that we carefully consider the future path that is in the best interests of the Nation. And as I hope to emphasize in my testimony, these space weather concerns, especially in regards to impacts on electric power grids, may pose important homeland security and energy security concerns and should be considered in your deliberations.

BACKGROUND

For the past 27 years, I have been an active researcher and observer of electric power system impacts caused by the widespread geomagnetic field disturbances due to Space Weather. For some 22 years, these activities occurred while I was employed in the electric power industry itself. I not only lead research investigations funded by my employer, but also efforts funded by the Electric Power Research Institute. My areas of responsibility involved the design and development of the high voltage transmission network and one of our pressing concerns was the unique problems posed by the natural phenomena of Space Weather. This was a problem that we recognized was of a growing and evolving nature as our industry continued to grow in size and technological sophistication. I particularly became engaged with the NOAA-SEC in the aftermath of the great geomagnetic storm of March 13-14, 1989, a storm which produced historic impacts to the operations of power grids in the U.S. and around the world. I was part of an electric power industry group that advocated the efforts such as the ACE satellite and resulting solar wind monitoring that have greatly improved the Nation's capability to provide accurate short-term forecasts of severe geomagnetic storm events.

Since 1997, I have subsequently been employed with the Metatech Corporation and a part of what we now do is heavily involved with Space Weather and impacts on technology systems, particularly large power grids. Our company has, in fact, been involved in the vulnerability and risk assessment for the power grids in England and Wales, Norway, Sweden and portions of Japan. Metatech also provides continuous space weather forecasting services for the company that operates the electric power grid for England and Wales. Since May 2002, Metatech has been providing similar vulnerability and risk assessments for the U.S. electric power grid to the Commission to Assess the Threat to the United States from Electromagnetic Pulse (EMP Commission). The EMP Commission was established by Congress under the provisions of the Floyd D. Spence Defense Authorization Act of 2001, Public Law 106-398, Title XIV. The EMP Commission was chartered to conduct a study of the potential consequences of a high altitude nuclear detonation on the domestic and military infrastructure and to issue a report containing its findings and recommendations to the Congress, the Secretary of Defense, and the Director, FEMA. While the charter of this commission involved intentional electromagnetic attack on the U.S. infrastructures primarily from a high altitude nuclear burst, the MHD (or magneto hydro dynamic) portion of this electromagnetic attack can be remarkably similar to the electromagnetic disturbance caused by the natural phenomena of Space Weather. As a result the Commission wisely investigated the plausible impacts due to severe geomagnetic storms on the U.S. electric power infrastructure. The Commission has also closely coordinated with the NERC (North American Electric Reliability Council) and their Critical Infrastructure Protection Advisory Group (CIPAG). This group has been continuously and fully vetted on the findings of the Commission directed investigations. While the Commission is not

scheduled to report their findings back to Congress until approximately March of 2004, they have encouraged Metatech to freely share with the scientific community the investigation results related to severe geomagnetic storm events. As a result, as part of my prepared testimony, I will also provide the significant portions of these findings. However, at this point, I should caution that these reports will only be the opinion of Metatech as the Commission has not completed deliberations and will not formally issue findings until early next year.

In these diverse and various capacities, it has been my privilege to work with the NOAA-SEC for many years as an end-user of their forecast services, a bulk data user and, in some degrees, a competitor to the SEC. In all cases we have developed a close partnership with this agency and its staff, a relationship that has clearly allowed for key advances in improving the geomagnetic storm forecasting capability for the electric power industry.

Space Weather, Impacts to Electric Power Systems and the Importance of

Forecasting Services

The Committee has posed four questions which are designed to probe the topic area of Space Weather Forecasting Services and their importance to the reliability of the Nation's electric power grid. I shall attempt to answer these through examples of historic events, examination of developing trends and operational procedures, and efforts that have been made to model and extrapolate implications for severe storm scenarios.

Question 1. Please provide an overview of how space weather can affect electric power grid systems, including examples of historical events that have caused problems.

Space Weather is associated with ejection of charged particles from the Sun, which after colliding with the Earth's magnetosphere will produce significant disturbances in the normally quiescent geomagnetic field at the Earth's surface. These disturbances have caused catastrophic impacts to technology systems in the past (e.g., the power blackout in Quebec in March 1989). More importantly, as detailed examinations have been undertaken concerning the interaction of geomagnetic storm environments with power grids and similar infrastructures, the realization has developed that these infrastructures are becoming more vulnerable to disruption from electromagnetic interactions for a wide variety of reasons. This trend line suggests that even more severe impacts can occur in the future for reoccurrences of large storms.

An Overview of the U.S. Electric Power Grid

While electricity customers receive power from the local distribution system (typical operating voltage of 15kV with step down to 120/240 volt), the backbone of the system is the high voltage transmission network. The primary AC transmission network voltages in the U.S. are at 230kV, 345kV, 500kV and 765kV. These transmission lines and their associated transformers serve as the long distance heavy hauling arteries of electricity production in the U.S. A single 765kV transmission line can carry over 2000 MW of power, nearly 200 times what a typical 15kV distribution line which is the overhead line commonly used for residential distribution. Space Weather or geomagnetic disturbances directly attack this same high voltage transmission circulatory system and because both

have continental footprints, these disturbances can rapidly erode reliability of these infrastructures and can therefore threaten widespread blackout for extreme disturbance events. The U.S. electric power grid is the world's most extensive, Figure 1 provides a map of the approximate location of the nearly 80,000 miles of 345kV, 500kV and 765kV transmission lines in the contiguous U.S.

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These geographically wide spread assets are also fully exposed to the extremes of the terrestrial environments. Because these assets are the critical backbone of the system, utility company engineers have taken great care to engineer for robust capabilities of these assets to withstand most of the severe wind, lightning and ice loading exposures. For example, while many of the low voltage local distribution feeders can fail due to tree damage during hurricanes, these same hurricane events rarely threaten the integrity of the high voltage grid itself. While extensive attention has been paid to these assets for terrestrial weather exposures, a multitude of design decisions has inadvertently and significantly increased the power grid exposure and vulnerability to space weather environments, as will be discussed in later sections of this testimony. There are "no shortages" of challenges that these systems face. In addition to the terrestrial weather challenges, power company operators face even more ominous threats from the recent realization of physical and cyber terrorism. In spite of the best efforts, failures still can occur; for example, a lighting strike can still cause on occasion a high voltage transmission line to trip. Very high winds, for example, due to a tornado can cause the failure of a line or several lines on a common corridor. However, most of these events generally occur in isolation and power grids are operated at all times to withstand the largest creditable single contingency failure without causing a cascading collapse of the network itself. Space Weather differs from ordinary weather in that it has a big footprint and attacks the system across many points simultaneously, causing at times of severe events multi-point failures on the network that can threaten the integrity of the network. Therefore, geomagnetic storms may be one of the most important hazards and is certainly the least understood threat that could be posed to the reliable operation of these networks.

The transmission lines and substations are all geographically remote and unstaffed facilities. They are difficult to fully monitor and cannot be continuously patrolled. The bulk of the protection of these facilities are done via autonomous relays that continuously sense for disturbance conditions and operate as quickly as 70 msec to trip off or isolate an asset that is sensed as an operating outside of acceptable parameters to protect the integrity of the network as a whole. Real-time data from a limited number of monitoring points is brought back to one of the more than 150 continuously-staffed control centers used to operate the transmission infrastructure in the U.S. There operators continually assess network conditions and make needed adjustments to keep all flows and voltages within prescribed boundaries and limits. Further they are responsible to dispatch generation (in many cases within a market-based supply system) to perfectly balance the production and demand for electric energy. The limited amount of real-time data makes it a challenge to fully assess the many possible threats that can occur to these remote assets. The remotely monitored data is not at all times unambiguous and can lead to differing interpretations. Therefore it is not easy to determine the nature of a threat from this alarm

level information alone. In most control centers, the real-time data is typically augmented with continuous high quality terrestrial weather information, as regional storms and climatic events can be one of the most frequent sources of operational anomalies on the network. The power industry is just now getting to the point of being introduced to the same paradigm in regards to high quality space weather data and the benefits it could offer in improving situational assessments.

The Electric Power Infrastructure and Its Sensitivity to Disturbance

Levels

While more details will be provided later, a brief overview of how these geomagnetic disturbance environments actually interact with large regional power grids indicates the complex nature of the threat. When these disturbances occur they result in slowly varying (1-1000 seconds) changes in the geomagnetic fields that can have very large geographic footprints. These magnetic field disturbances will induce electric fields in the Earth over these same large regions. Across the U.S., complex topologies of long distance transmission lines have been built. These grids include transformers at generating plants and substations that have grounded neutrals. These transformer neutrals provide a path from the network to ground for these slowly varying electric fields (less than 1 Hz) to induce a current flow through the network phase wires and transformers.

These currents (known as geomagnetically-induced currents—GICs) are generally on the order of 10's to 100's of amperes during a geomagnetic storm. Though these quasi-DC currents are small compared to the normal AC current flows in the network, they have very large impacts upon the operation of transformers in the network. Under normal conditions, even the largest transformer requires only a few amperes of AC excitation current to energize its magnetic circuit, which provides the transformation from one operating voltage to another. GIC, when present, also acts as an excitation current for these magnetic circuits, therefore GIC levels of only 1 to 10 amperes can initiate magnetic core saturation in an exposed transformer. This transformer saturation from just a few amperes of GIC in modern transformers can cause increased and highly distorted AC current flows of as much as several hundred amperes leading to overloading and voltage regulation problems throughout the network.

Power networks for decades have been operated using what is termed an "N-1" operation criteria. That is, the system must always be operated to withstand the next credible disturbance contingency without causing a cascading collapse of the system as a whole. Therefore, when a single-point failure occurs, the system may need to be rapidly adjusted to be positioned to survive the next possible contingency. Space Weather disturbances have already been shown to cause near simultaneous multi-point failures in power system infrastructures, allowing little or no time for meaningful human interventions. The onset of severe geomagnetic field disturbances can be both sudden and have continental footprints, placing stresses broadly across power grid infrastructures.

When a transformer saturates, it can produce a number of simultaneous and undesired impacts to the grid. If the spatial coverage of the disturbance is large, many transformers (hundreds to thousands) will be simultaneously saturated. The principal concern to network reliability is due to increased reactive power demands from transformers that can

cause voltage regulation problems, a situation that can rapidly escalate into a grid-wide voltage collapse. But a nearly equal concern arises from collateral impacts stemming from highly distorted waveforms (rich in harmonics) from saturated transformers that are injected into the network. As previously mentioned protective relays continuously sense these now distorted signals. These distortions can cause a mis-operation of an exposed relay causing it to operate to isolate a key element of the network. When these relay mis-operations occur in-mass because of the big footprint of a storm, the protection systems can rapidly destroy the integrity of the network that the relays were intended to protect. In addition, individual transformers may be damaged from overheating due to this unusual mode of operation, which can result in long-term outages to key transformers in the network.

The threats to the infrastructure from geomagnetic storms include the possibility of widespread power blackouts, damage to expensive and difficult to replace transformers, and damage to equipment connected to the grid. As a result, an important aspect of concern is the time required to replace damaged transformers and to fully restore the operation of the power grid.

Historic Storm Events and Power System Impacts

The rate of change of the magnetic field is a major factor in creating electric fields in the Earth and thereby inducing quasi-dc GIC current flow in the power transmission network. Therefore an important means of classifying the severity of a disturbance can be made by noting the dB/dt or rate-of-change of the geomagnetic field (usually measured in units of nanotesla per minute of nT/min). The larger this dB/dt environment becomes, the larger the resultant levels of GIC and levels of operational impact upon exposed power grids.

Some of the first reports of operational impacts to power systems date back to the early 1940's and the level of impacts have been progressively become more frequent and significant as growth and development of technology has occurred in this infrastructure. In more contemporary times, major power system impacts in the U.S. have occurred in storms in 1957, 1958, 1968, 1970, 1972, 1974, 1979, 1982, 1983, and 1989 and several times in 1991. Smaller scale impacts can and do occur even more frequently; these include anomalous operating events that may result in the unexpected tripping of a key element of the system or even permanent damage to apparatus such as large power transformers.

In order to understand the far reaching impacts of large geomagnetic storms, the disturbance impacts in particular of the great storm of March 13-14, 1989 are reviewed in some detail. The most important of these impacts was the storm-caused chain of events resulted in the blackout of the Hydro-Quebec power system. At 2:42 am EST, all operations across Quebec, Canada were normal. At 2:43 am EST, a large impulse in the Earth's magnetic field erupted along the U.S./ Canadian border. GICs immediately started to flow in the southern portions of the Hydro-Quebec grid. In reaction to the GIC, voltage on the network began to sag as the storm increased in magnitude; automatic voltage compensating devices in the network rapidly turned "on" to correct this voltage imbalance. Unfortunately these compensators themselves were vulnerable to the harmonics generated in the network's transformers, and mis-operation of relays to protect

these devices caused the entire fleet of 7 compensators on the network to shut down within 60 seconds of the beginning of the storm impulse. When the compensators shut down, the network collapse followed within a matter of seconds, putting over 6 million inhabitants of the province in the dark. Going from normal conditions to a complete province-wide blackout occurred in an elapsed time of just 90 seconds. The power system operators had no time to understand what was happening, let alone to take any meaningful human action to intervene and save the grid. In comparison, the August 14, 2003 blackout covering large portions of the U.S. and Canada evolved over a period of time in excess of 90 minutes. Figure 2 provides a four minute sequence of maps showing the onset of observed geomagnetic field disturbance conditions that caused the Hydro-Quebec blackout.

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Over the next 24 hours, five additional magnetic disturbances propagated across the continent and nearly toppled power systems from the Midwest to the mid-Atlantic regions of the U.S. The North American Reliability Council (NERC), in their post analysis, attributed 200 significant anomalies across the continent to this one storm. Figure 3 illustrates the geographic breadth of power system problems during one of the five substorm time periods on March 13, 1989 across the North American grid. Figure 4 provides a depiction of the geographic extent of the geomagnetic field disturbance conditions across North America at time 22:00UT, that triggered the events shown in Figure 3. As illustrated, at this time intense geomagnetic field disturbances extended into mid-latitude portions of North America and essentially across the entire U.S.

For further reference, a list of the NERC reported power system operating anomalies due to this storm is provided in Exhibit 1. The North American Electric Reliability Council, at that time, would annually review significant system disturbances and provided a report on the most important of these system disturbances, in order to share information and insights on the disturbances and what lessons may be gained from these experiences. The 1989 System Disturbances report included discussions on the San Francisco Bay Area Earthquake, the impacts of Hurricane Hugo, and several other disturbances, most of which were tied to extreme environment disturbances. This report also provided a detailed discussion of the March 13-14, 1989 Geomagnetic Superstorm, which entailed 50 percent of the entire 67 page NERC report. This Exhibit from that report provides an indication of the wide spread impacts that were observed across the continental power grid.

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As previously mentioned, the best means of characterizing the geomagnetic field disturbance environment as it relates to GIC impacts on power grids is by the rate-of-change or dB/dt in nT/min. Figure 5 provides a plot of the dB/dt (or RGI—Regional GIC Index) observed at the Ottawa observatory which would have broadly characterized the

intensity of the disturbance over the general New York, New England regions and neighboring portions of southern Ontario and Quebec in Canada.

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As shown, the disturbance intensity that triggered the Hydro-Quebec collapse at 2:45 EST was at an intensity of 480 nT/min. Over the time interval of power system events shown in Figure 3, the peak dB/dt disturbance intensities observed in various other locations across the U.S. are provided in Figure 6. As shown, many of these disturbances were initiated by disturbance intensities that generally ranged between 300 and 600 nT/min.

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While power grid reliability concerns are of paramount importance, the long duration of the storm and associated GICs in transformers on the network caused internal transformer heating to the point of failure. There were several noteworthy cases of transformer internal heating associated with the March 13, 1989 storm in the U.S. mid-Atlantic Region. In one case at the Salem Nuclear plant in southern New Jersey, the internal heating was so severe that complete failure of the transformer resulted. Figure 7 provides a few pictures of the transformer and internal winding damage (conductor melting and insulation burns) due to the GIC exposure. In this case the entire nuclear plant was unable to operate until the large 500kV 1200MVA transformer was replaced. Fortunately a spare from a canceled nuclear plant in Washington State was available and restoration of the plant occurred in 40 days. Transformers of this type are of custom design and in most cases new replacement transformers of this type generally take up to a year for delivery. Failures of key apparatus, such as this, raise concerns about the ability to rapidly restore power in a region once a blackout and failure has occurred.
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Question 2. LHow does your organization use data and products from NOAA's Space Environment Center (SEC)? In general, how much lead time do, you need to make decisions for mitigating the effects of space weather?

As I had previously discussed, I have had considerable experience both as an electric power industry user of data and products from the NOAA Space Environment Center as well as a provider of geomagnetic storm forecast services to electric power industry end-users. Therefore, if the Committee will allow me, I will attempt to answer this question from both points of perspective.

Electric Power Industry Application of Forecast Services

Some of the formative research and investigation of problems due to GIC in the power industry was undertaken by my colleague and mentor Professor Vernon D. Albertson at the University of Minnesota starting in the late 1960's. As a result of this work, formal arrangements were made to disseminate geomagnetic storm information provided by the U.S. government (the SEC or forerunner in that era) through established communication means used to make coordinated adjustments in power grid frequency regulation for

purposes of time error correction. AEP at that time acted as the official point of contact for these notifications from NOAA as noted in this circa 1987 NERC document provided in Exhibit 2. The March 1989 storm was the first storm to precipitate a large-scale blackout and very nearly threatened even wider scale problems across the U.S. This unprecedented level of impacts caused renewed emphasis on updating and revising operational procedures to better contend with the unknowns of the disturbance environments. In fact, several example procedures for power pools heavily impacted by the March 1989 storm were published by NERC in the 1989 Disturbances Report as shown in Exhibit 3. These procedures and the regions they encompass include the NPCC, PJM, WAPA, and the Allegheny Power Service Corporation.

Overtime, these procedures have been continuously updated and current examples are provided for the PJM, NPCC, WSCC and even an updated reference document by the NERC as recent as July 17, 2003 and contemporaneous with the EMP Commission efforts to vet the NERC on U.S. Electric Power Grid vulnerabilities to large geomagnetic disturbances. These examples are provided as Exhibits 4 to 7. These procedures describe some of the actions that operators would undertake to better prepare the system to contend with the anticipated stress caused by a storm. Even in the immediate aftermath of the March 1989 storm, the power industry came to recognize the need for predictive forecast warnings of these important storm events. In July 1990 the NERC Board of Trustees issued a position statement advocating forecast technologies that could provide approximately an hour advance notice of the occurrence of important storm events (see Exhibit 8).

Metatech and Other Commercially-Provided Forecasting Services for the

Electric Power Industry

Because the NOAA-SEC provides only a broad and generic level of service to end-users of space weather forecasts, these services are not well formatted to extrapolate the possible and plausible impacts that may result to complex technology systems such as electric power grids. As a result, a need has developed and is being successfully filled by the private sector to provide highly specialized forecast services to these complex end-users. At present this service sector is in a state of infancy, but is generally developing much along the model of the medical services community. In this case, the NOAA-SEC forecasts are the equivalent of the general practitioner, for those end-users who have good space weather health (or at least suffer no serious space weather problems); this service may be quite adequate. However for end-users that have serious space weather health concerns, a more specialized care or level of service may be warranted and in most cases can be readily provided by firms such as ours that have specialized capabilities for these unique and complex problems. That being said, it should also be emphasized that end-user lack of awareness of potential space weather problems is a serious challenge that both the SEC and commercial providers must overcome. Exhibit 9 is a technical paper which provides some commentary and overview on the type of specialized services that our company can and does provide to the electric power industry. The relevant portions of this paper discussing these forecast services start on approximately page 23 of the Exhibit. Metatech provides notifications that range from several days in advance based upon solar observations to short-term forecasts that can be on average an hour in advance

driven by solar wind observations. We also provide continuous real-time observations as well to verify impacts that are being caused by a storm occurrence. We work extensively and very closely with our clients on their complex needs. These efforts can entail hardening their system from a design perspective, to training of system operators to operationally prepare their system to better respond to anticipated and observed storm related stresses.

Even with these commercial capabilities, the NOAA-SEC provides some of the key data sources that become the input data that are used to drive these sophisticated forecast systems and services. Of necessity, the relationship between NOAA-SEC and the Commercial Providers is one that is highly symbiotic; it that the Commercial Providers greatly depend on the SEC for high quality data and data interpretations, while the SEC looks to the commercial specialists to provide the more specialized services that heavily impacted users may need. Therefore, the loss of the NOAA-SEC would have the almost immediate impact of causing the crumbling of much of the forecasting services capability of the Nation.

Question 3. How would you compare our knowledge today of the impacts of space weather on electric power grid systems to what we knew five years ago, and to what we expect to know five years from now?

New York ISO CEO William J. Museler in the aftermath of the August 14, 2003 Blackout, “the blackout could have damaged the power plants or transmission lines,” “Had that kind of damage occurred, it could have taken days, weeks, or even months to restore.. . .This protection (meaning normal operation of relays that shut down the components on the grid) shortened the restoration process considerably."

Advances in Understanding of Space Weather Impacts to Power Systems Over the Past Five Years

There have been significant new findings and ever evolving understanding of the many facets of the complex space weather environment dynamics and the manner in which this impacts the operation of electric power grids. Mitigation of the impacts of these storms will depend heavily on forecast assessments of the onset, severity and regional manifestations of these storms and it is fair to say that much has also been achieved in this regard. While we can be proud of our accomplishments, there remains many unresolved space weather paradoxes of storm evolution and the manner in which they can degrade operations of infrastructures. In particular to the electric power grids, the major achievements can be summarized as follows, with supporting exhibits that elaborate further on many of these main items.

<bullet> Integrated and detailed modeling of both complex geomagnetic disturbance environment and complex power grid topologies. These advances have allowed for extensive forensic analysis of historically important geomagnetic storms and their impacts on power grids.

<bullet> Improved understanding, as described above, has allowed us to develop much more accurate and detailed quantification of the areas of risk and vulnerability that Space Weather may pose to the U.S. power grid infrastructure. Surprisingly, we are now discovering that risks from storms are not just limited to high latitude located power grids, locations normally associated with auroral observations. New understandings indicate that highly developed power grids at all latitudes may be impacted by various space weather disturbance processes in the U.S. and around the world that were unknown to us just a few years ago.

<bullet> These models and environment interaction understandings have also allowed the power industry to understand other aspects of evolving power grid vulnerability to the space weather environment that were not fully understood heretofore. The studies, which are part of the findings from the EMP Commission investigations, indicate that over the past several decades, various design decisions and growth of the power grid infrastructure has caused growing vulnerability to geomagnetic storms. In short, over the past 50 years, the size of the power grid has grown by nearly tenfold, and has also grown in sophistication such that it now presents a larger, effective antenna to electromagnetically couple with geomagnetic storm disturbances. This has the affect of amplifying storm-caused disturbances in modern power systems. This vulnerability increase is not just limited to improved coupling due to larger grid size but also due to other related infrastructure design decisions, as more fully described in a recent article in Exhibit 9. The industry is also facing growing vulnerability to space weather events due to operational impacts that are occurring from deregulation and transitioning to market-based operation of the power grid. The recent blackout of August 14, 2003 highlighted many of the infrastructure and power market operational concerns. These concerns include continued large growth in electric power demand in the face of diminishing growth in the transmission network infrastructure needed for delivery of power. As a result, power pools such as PJM report for example in year 2000, the pool experienced a total of 3830 hours transmission network constraint operation.\1\ In other words, 44 percent of the year power flows on the transmission system were at or very near maximum levels. These congestion problems only worsened in 2001 as the hours of congestion of the real-time market increased to 4823 hours (55 percent of the year).\2\ This heavy loading is another way of saying that the system is stressed to the safe operating limits and therefore unable to readily counter or safely absorb added stress to these same assets that could occur due to large geomagnetic storms. A recent article, Exhibit 10, provides a more detailed commentary on “What’s Wrong with the Electric Grid.” While it does not speak to the subject of space weather, it concisely describes the added burdens on today’s transmission network infrastructure, the same portion of the infrastructure impacted by space weather events.

\1\ PJM Interconnection State of the Market Report 2000, June 2001
\2\ PJM Interconnection State of the Market Report 2001, June 2002

<bullet> The same efforts to evaluate impacts and risks of today’s infrastructures have also allowed us to examine the plausible risks that could result from historically large storms that have not yet been experienced by today’s power grid infrastructure. These

studies were an especially important focus of the EMP Commission investigations that have been underway for the past 18 months. The results indicate that major power grid operational impact threats loom due to these low probability, but very large storm events. For instance, we have examined in detail the specifics of the March 1989 super storm and as previously discussed witnessed unprecedented power system impacts for storm intensities that reached levels of approximately 300 to 600 nT/min. However, the investigation of very large storms have made us newly aware that storm intensities over many of these same U.S. regions could be as much as 4 to 10 times larger. This increase in storm intensity causes a nearly proportional increase in resulting stress to power grid operations. These storms also have a footprint that can simultaneously threaten large geographic regions and can therefore plausibly trigger even larger regions of grid collapse than what occurred on August 14, 2003. Exhibit 12 is a brief opinion article that discusses the context of the events leading up to the August 14, 2003 blackout and how such a scenario could in the future be triggered by a space weather storm. Exhibit 13 provides a more detailed summary of investigations undertaken on the U.S. power grid for impacts caused by very large geomagnetic storm events. As shown in this series of studies, disturbance impacts to power grid operations could plausibly be 3 to 10 times larger in the U.S. than those experienced in the March 1989 super storm. This paper shows one of many possible scenarios for how a large storm could unfold. As illustrated in Figure 8, a large region of power system collapse is projected for severe geomagnetic disturbance scenarios. Depending on the morphology of the geomagnetic disturbance, it would be conceivable that a power blackout could readily impact areas and populations larger than those of the recent August 14,2003 blackout.

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While these complex models have been rigorously tested and validated, this is an exceedingly complex task with uncertainties that can easily be as much as a factor of two. However, just empirical evidence alone suggests that power grids in North America that were challenged to collapse for storms of 400 to 600 nT/min over a decade ago, are not likely to survive the plausible but rare disturbances of 2000 to 5000 nT/min that long-term observational evidence indicates have occurred before and therefore may be likely to occur again.

Because large power system catastrophes due to Space Weather are not a zero probability event and because of the large-scale consequences of a major power grid blackout, I am compelled to, add some commentary on the potential societal and economic impacts of such an event should it ever re-occur. The August 14, 2003 event provides a good case study; the utilities and various municipal organizations should be commended for the rapid and orderly restoration efforts that occurred. However, we should also acknowledge that in many respects this blackout occurred during highly optimal conditions that were somewhat taken for granted and should not be counted upon in future blackouts. For example, an outage on January 14 rather than August 14 could have meant coincident cold weather conditions. Under these conditions, breakers and equipment at substations and power plants can be enormously more difficult to re-energize when they become cold. This can translate into the possibility of significantly delayed restorations. Geomagnetic storms as previously discussed can also permanently

damage key transformers on the grid, which further burdens the restoration process. For that matter, these conditions could rapidly cause serious public health and safety concerns, in that people trapped in regions such as New York City would not have the option of a “Night in Central Park Experience” and perhaps not be able to easily find adequate shelter from the elements. The time of day when the outage occurred was also a significant advantage, in that the bulk of the utility company day crews were still available and able to be readily dispatched to perform restoration functions. In major cities, the blackout essentially brought to a halt most transportation systems.

All mass transit systems shutdown as they depend on electricity for many of their functions. Traffic signal systems on most major streets and highways stopped and as a result most major thoroughfares became the equivalent of 8 lane parking lots in the early hours of the blackout. Only a few major power facilities are continuously manned, and since blackouts are possible at any hour, the odds are that 75 percent of the time the normal utility day crews are not on the job when these events occur. Attempting to recall workers that are trapped on the wrong side of these transportation snares is highly problematic.

In many respects, the loss of power supply returns much of our society to a pre-industrial era, because the loss of power supply rapidly cascaded into many other infrastructures. For example, water and sewage plants and transportation systems generally shutdown across the affected regions, even some 911 emergency systems and communication systems were impacted. Power grids are arguably the most important of the critical infrastructures because most of the other critical infrastructures are so highly interdependent on reliable power supply from the grid. It is clearer now that the technology age has increased our reliance on electric power. Figure 9 shows a chart plotting the primary interdependency links that exist between electric power and other critical infrastructures and services such as water, transportation, telecommunications and fuel supplies. As this illustrates, electric power supply is central to the sustained operation of most of the Nation's other critical infrastructures.

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Only a small portion of these infrastructure facilities have emergency on-site generation of sufficient capacity that allows them to continue operation in the face of a blackout event. Water treatment and pumping require enormous amounts of electric power and as result very few of these systems have redundant power supply options. Loss of pumping in time will lead to drop of city water pressure, as storage tanks and reservoirs cannot be recharged for residential distribution. In large high-rise buildings, city supply water pressure needs to be supplemented with electric pumps to lift water to upper floors for water distribution. Therefore within a matter of a few hours potable water distribution in many locations can become a serious concern. Perishable foods are generally at risk of complete loss within 12 hours or less. As previously discussed, transportation of all types was seriously impacted. Even automobiles and trucks could only operate within the range of the fuel in their tank at the time, because nearly all refueling operations from underground storage tanks require restoration of electric power supply.

Most affected regions were restored within approximately 24-36 hours after the blackout. As described in hearings on October 20 before the House Financial and Banking Infrastructure Committee, the major telecommunications (not counting wireless-cellular phone systems) and interdependent financial systems were able to maintain many functions. However, this was due to backup generation at a few critical hubs, which generally have around 72 hours of available fuel. Therefore power grid outages of longer durations would be highly problematic in that refueling may be logistically impossible in all situations. W.A. Abernathy, the Assistant Secretary for Financial Institutions, cautioned in his testimony that our financial institutions primarily operate on the principle of confidence, "confidence that financial transactions will be carried out, that checks will clear, that bills will be paid, that investments will be made, that insurance promises will be kept. The confidence provided by financial institutions and their services play a big part in helping to cope with the trauma of disaster." An event which causes the eventual cessation of these functions, even for a short time, in key financial centers could have potential for wide spread consequences to the economy.

Because of the possible large geographic laydown of a severe storm event and resulting power grid collapse, the ability to provide meaningful emergency aid and response to an impacted population that may be in excess of 100 million people will be a difficult challenge. Potable water and replenishment of foods may need to come from boundary regions that are unaffected and these unaffected regions could be very remote to portions of the impacted U.S. population centers. As previously suggested adverse terrestrial weather conditions could cause further complications in restoration and re-supply logistics.

Space Weather and Power System Understandings--The Future

Given the surprising and potentially enormous implications of recent power system threats due to space weather, it is difficult to accurately predict what the future may bring. However, the future of space weather is being shaped, in fact, by activities that are underway today. Much good work is underway to continue efforts such as described here to further understand and evaluate the potential impacts of large storm events. While having the ability to accurately assess threats to these infrastructures is an important accomplishment, the real payoff of this capability is in the application of this knowledge towards engineering solutions that reduce the risks. In order to protect against the effects from severe geomagnetic storms, several approaches may need to be used. In terms of the entire grid itself, remedial measures to reduce GIC levels may be needed, such as installation of supplemental transformer neutral ground resistors to reduce GIC flows and undo this unintended geomagnetic antenna that has developed as the industry has built the present day high voltage transmission grid in the U.S. Grid operational measures can be better evaluated and tested for the multitude of scenarios and procedures enhanced to prevent severe voltage regulation problems in order to preserve the integrity of the network as a whole. This means that additional generation capacity and fast acting voltage compensating reserves should be available and/or loads should be rapidly removed from the system. This requires advanced information and contingency planning by the power utilities. With the aid of continuous solar wind monitoring, it is possible to reliably predict the onset of a storm 30 to 45 minutes in advance. This is due to the

availability of real-time satellite data and modeling capabilities that are now within the state-of-the-art. These capabilities are reasonably expected to further improve within the next five years, but only as long as the Nation maintains a commitment to gather the observational data and disseminate it for the forecast models that can use it.

Question 4. What would be the impact to your organization and the electric power grid industry if the SEC were no longer able to provide its space weather forecasts to you? Please provide specific examples when possible.

In response to this question, let me first speak to the impacts upon the power industry should the SEC or the Nation's space weather forecast capability cease to exist. As previously discussed, the power industry has been aware of the potential for some large impacts due to storms and as recent discoveries indicate, these threats have the potential to be even more ominous in their implications that previously understood. It is also clear that the vulnerability that presently exists has evolved due to long-term trends and that these trends because they involve embedded designs to billions of dollars in assets cannot be undone overnight. The most effective mitigation strategy in the short-term and perhaps in the long-term is improved situational awareness for operators of these systems from evolving space weather disturbances and then attempting to counter some of the impacts by providing more robust operational postures in anticipation of storm-caused impacts.

In the era prior to solar wind monitoring and the advances in improved solar activity monitoring, storm events would often blindside operators with sudden onsets. Unlike most terrestrial weather, these events develop suddenly once the threatening inputs from solar activity arrive at the Earth. The loss of these capabilities would return us to the 1980's, where all that existed in many respects was a monitoring service and storm information for the most part arrived after-the-fact and therefore could not be usefully utilized to avoid significant operational impacts, rather the information just confirmed for operators what caused any impacts and only marginally better prepared them for additional impacts from the same storm. Therefore, power grids would have to rely almost exclusively on their own power grid monitors for the first signs of possible storm impacts. However, these would be a poor substitute in most respects and would create a number of operator uncertainties and paradoxes. The operators would not be able to receive advance notice of severe impacts that appear with sudden onsets. For storm events that have slower evolution, it would take some time to determine if operating anomalies are due to a geomagnetic storm or some other event. Once they determine that it is a geomagnetic storm then it would be necessary to be overly cautious and restrictive for many additional hours of small storm activity because it would be difficult to know if a larger storm development is possible. In the aftermath of the Hydro-Quebec collapse, the operators of that system based operational procedures on observations of local activity. In 1991, they spent nearly 10 percent of the year in geomagnetic storm operating posture and as a result reduced substantially their ability to transfer large blocks of power across their network and export it outside their system. In today's more volatile electric energy markets, such operating postures could produce substantial added hours of constricted operation of networks and have immediate cost impacts on real-time electric energy markets. An example of this type of energy market cost impact can be illustrated by a storm on July 15, 2000 and the response of the power, market when the PJM power

pool declared a storm emergency. On July 15, 2000, the PJM declared an SMD emergency beginning at 15:30 and declared an end to the SMD emergency at time 21:07, resulting in a period of 6 hours of emergency conditions in which PJM follows prescribed procedures for network conservative operation as described in Sections 3-1 to 3-5 of the PJM Operations Manual. During this 6 hour period, the real-time price increased approximately $40/MWH on average. Under conservative operation, the operation of the power network biases towards security and reliability of the network as a whole rather than just economic dispatch. As a result, transfers across the network can be significantly reduced, leading to re-dispatch of generation and cost increases in the real-time market due to less optimal economics in the dispatch of generation in this security mode of operation. Even though this storm event occurred under light load and highly favorable market conditions, the cumulative real-time market cost increase totaled $900,000. Storm assessment uncertainties can extend longer than necessary operation of the network in these restricted market conditions and add even more to these cost impacts. During some periods of the day, energy cost increases can be much more severe and total costs could be even higher as a result. Of course, the economic and societal costs of large scale failures in the U.S. power grid overwhelm all other cost concerns and forecast efforts provided to prevent that scenario from being realized should be of paramount concern.

Metatech is dependent for many of the forecast products we supply upon reliable, high-cadence and high quality data from the SEC as needed inputs into the models and forecast systems we operate. In response to cessation of the SEC functions, we would have to significantly alter and as a result diminish the quality of some of the services we could provide. In addition, I would suspect that some commercial providers may choose to simply exit the business in response and others that might have been willing to enter the business will instead decide not to do so. Further, it would be unlikely at this time that any commercial provider would decide to enter the market to shoulder the heavy burden of launching satellites and setting up and coordinating various world observatories needed to provide important data inputs. In short, the customers, no matter who the provider, would have fewer options available to them and would receive an overall lower quality of service. Lacking any official government agency responsible for space weather forecasting, a likely development at times will be the equivalent of a “Tower of Babel,” where information is widely scattered amongst a large number of government, military, and international observation sites and each speaking in a differing tongue as to their interpretation and not one of them having complete enough information to develop a useful “Big Picture” of the unfolding space weather events.

Even the idea of a successor agency being handed the responsibility that currently resides with the SEC has a number of potential impact consequences. No matter how dedicated the new responsible agency, there will be unavoidable losses in the transition. Any new organization would need to successfully overcome the added start-up hurdles before even considering how best to meet the challenges of forecasting a difficult space weather environment. Since our company has commercial responsibilities similar to the associated activities that the SEC must perform to deliver their products, I can certainly state that an operation such as this has many high maintenance and expensive tasks. This includes such unglamorous but vital back office and field tasks such as data collection, quality control of the data and, finally, timely data dissemination. These all need the

continuity of an experienced and capable staff of unsung heroes to assure the high level of reliability and availability that has been provided by the SEC. These systems, of course, need to work in harmony with the derived products and forecast services that are the more familiar face of the SEC. As I have emphasized previously in my testimony, the space weather disturbances we are attempting to forecast can have amazingly rapid onsets and can manifest as a diverse variety of consequences to large geographic regions. Therefore forecast staff needs to be highly trained and experienced so they can quickly assess and judge, as there is no time for hesitancy and uncertainty. Further all this needs to be done on a continuous 24 hour by 7-day per week basis, as the Sun never sets on the Nation's threats from Space Weather disturbances. As you can surmise, setting up a new function such as this is not a matter of buying a few servers, installing some shrink-wrap, and parking some people in front of a monitor. Nearly every function that is done involves much in the way of custom systems and a high degree of specialized human "know how." Therefore the loss of the highly trained and experienced staff would be an unfortunate loss of investment by the Nation and setback our collective capabilities in space weather forecasting.

In conclusion I would also like to offer a perspective on the long-term needs that should further be considered by this committee in supporting our nation's efforts to better mitigate concerns arising from space weather events. For example, the degree of deterioration in the reliability of the electric power grid has been a topic of considerable discussion, post August 14, 2003. It is now evident that uncertainty in long-term restructuring, and lack of transmission infrastructure investment were significant factors contributing to the events of that day. Yet no matter how maligned, this infrastructure is still capable of operating through "single-point" failures. In contrast, our nation's most important space weather monitoring assets have no redundancy in case of failure. A loss, for example, of the NASA-ACE solar wind monitoring satellite (at the vital L1 position in space) would largely deprive the Nation of the ability to perform high quality short-term forecasting of geomagnetic storms. The end of lifetime for ACE is rapidly approaching and still no formal plans exist by any government agency in the world for a replacement satellite. Other examples also exist for various other observation assets that supply needed data inputs to our space weather forecast systems. Our grasp on the ability to perform these vital functions can be lost at any moment in time and we may not be able to recover for a number of years in some cases. Therefore I would also like to urge the Committee to consider these future "heavy lifting" responsibilities in sustaining and improving our nation's space weather infrastructure, once we get past this current SEC funding crisis.

Chairman Ehlers. Thank you very much.

Next, Captain Krakowski.

STATEMENT OF CAPTAIN HENRY P. (HANK) KRAKOWSKI, VICE PRESIDENT OF CORPORATE SAFETY, QUALITY ASSURANCE, AND SECURITY, UNITED AIRLINES

Captain Krakowski. Chairman Ehlers, Ranking Member Udall, and Members of the Committee, on behalf of United Airlines, we would like to thank you for the opportunity

to submit testimony with the direct bearing on flight safety, public health, and commercial efficiency. In addition to my 25 years as a United Airlines pilot, I am also responsible for safety, security, and operational quality at our company.

Mr. Chairman, if you flew from Grand Rapids, Michigan to Beijing or Hong Kong six years ago, it would have taken nearly a day, connecting over at least two cities. Today, through the pioneering efforts of United Airlines in cooperation with other agencies and countries, we can now fly from Grand Rapids to these and other Asian cities in just 16 hours with one flow through Chicago. This is possible because of our ability to fly over the North Pole, Russia, and China. In fact, State Department officials involved in recent talks in China enjoyed the convenience and efficiencies of these very flights.

Safety is always our number one priority at United Airlines. Toward that end, while polar routing provides a tremendous advantage of time and convenience for our customers, everyone on these flights could be exposed to potential safety risks that did not exist when flying at the lower latitudes. Information we receive from the Space Environment Center operated by NOAA ensures that United Airlines can take timely action to mitigate the risks associated with an occasional solar activity, which can disrupt communication, navigation, and even impact crew member and customer health.

During such a solar activity, our company policy dictates that United restricts flights from certain routes and altitudes. If we are made aware of a threatening activity prior to a flight, United will not hesitate to fly at lower altitudes or latitudes or even incur a costly fuel stop in Japan or China.

United is one of the few airlines which maintains an in-house meteorology department that works with our dispatchers and our flight crews to provide a safe, comfortable flight. We are proud of our excellent reputation in forecasting safety threats.

The solar environment, however, is so unique that it requires specially trained forecasters and specific technology not available within the commercial sector. The SEC is our only link to that environment.

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As this chart depicts, we blend the information from SEC right into our flight planning process on both a daily and hourly basis. The SEC provides United with daily forecasting, monitoring, and, most importantly, immediate alerts, some of which can affect flight operations in as short as 10 minutes. We can demonstrate that the current process works exceedingly well.

In our five years of flying over the North Pole, United has found the need to alter flight plans on an average of two to three times per month. In some cases, when the event is severe, as we have recently experienced, we will alter flights sometimes already in the air.

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The current chart depicts an event which occurred on October 24, our flight 895 between Chicago and Hong Kong, was planning to fly the polar route. We replanned the

route away from the North Pole due to an R3 solar event. This routing took an additional 30 minutes of time. We had to burn 3,000 extra gallons of gas, and it cost United Airlines $10,000 to operate—more to operate that given flight. We do this regularly, if needed.

Mr. Chairman, United works with numerous government agencies from the FAA to the TSA. NOAA and the SEC distinguish themselves, in our opinion, by being an exceptionally transparent and customer-oriented partner with the airlines. I have personally visited the SEC in Boulder and can attest to the talent and professionalism of their staff. We are concerned that a reduction in funding could damage this important source of real-time safety information for our company. We also are concerned that transferring the operation to another federal agency could cause a disruption, degradation, or even filtering of information.

We urge you to support this program and seriously consider the ramifications associated with the change of oversight. We operate polar flights every day. A degradation of performance of this entity would cause us to become overly conservative in our flight planning, which would be costly. In our view, this is a program not in need of a fix. In our view, it is actually a program of American tax dollars at its best for the protection of United States citizens.

Again, thank you for allowing me to testify, and I do look forward to any questions you may have.

[The prepared statement of Captain Krakowski follows:]

Prepared Statement of Captain Henry P. (Hank) Krakowski

Chairman Ehlers, Ranking Member Udall and Members of the Committee, on behalf of United Airlines, thank you for the opportunity to submit testimony concerning a subject that has direct bearing on flight safety, public health and commercial efficiency. In addition to my 25 years as a United pilot, I am also responsible for Safety, Security and Operational Quality at our company.

Mr. Chairman, if you flew from a city such as Grand Rapids, Michigan to Hong Kong or Beijing six years ago, the journey would connect through at least two cities and take nearly a full day to complete. Today, through the pioneering efforts of United Airlines in cooperation with multiple countries and agencies, one can fly from Grand Rapids to these and other Asian cities in just 16 hours with only one connection over Chicago. This is possible by flying directly over the North Pole, Russia and China. In fact, State Department officials involved in recent talks with China enjoyed the convenience and efficiency of these very flights on United between Chicago and Beijing.

Safety is always our number one priority at United Airlines. Toward that end, while polar routing provides a tremendous advantage of time and convenience to our customers, everyone on these flights could be exposed to potential safety risks that did not exist when flying at lower latitudes. Information we receive from the Space Environment Center (SEC), operated by the National Oceanic Atmospheric Administration (NOAA), ensures that United Airlines can take timely action to mitigate

any risks associated with occasional solar storm activity that can disrupt communication, navigation and impact passenger and crew member health.

During such solar activity, our company policy dictates that United restrict flights from certain routes and altitudes. If we are made aware of threatening activity prior to the flight, United will not hesitate to fly at lower altitudes and latitudes or incur a very costly fuel stop.

United is one of the few airlines that maintain an in-house meteorology department that works with our dispatchers and crews to provide a safer and more comfortable flight. We are proud of our excellent reputation in forecasting flight safety threats.

The solar environment, however, is so unique that it requires specially trained forecasters and specific technology not available within the commercial sector. The Space Environment Center the only link to this environment. We blend the information received from the SEC into the flight planning process daily and even hourly. The SEC provides United with daily forecasting, monitoring and, most important, immediate alerts some of which can affect flight operations in as little as 10 minutes. We can demonstrate that this process works exceedingly well.

In our five years of polar flying experience, United has found the need to alter flight plans two or three times per month. In some cases, when an event is severe, we will alter flights already in the air.

Please take a look at the chart that we have provided for the Committee's reference. As recently as last week, on October 24th, United flight 895 from Chicago to Hong Kong planned to fly a polar route. The flight was re-planned, however, on a more southerly route due to a R3 magnitude solar event. This routing took 30 extra minutes and used 3,000 gallons of extra fuel for a total added cost to the company of $10,000 for that flight.

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Mr. Chairman, United works with numerous government agencies from the FAA to the TSA. NOAA and the Space Environment Center distinguish themselves by being an exceptionally transparent, customer-oriented partner with the airlines. I have personally visited the SEC in Boulder and can attest to the talent and professionalism of this organization and their people. We are concerned that a reduction in funding could damage this important source of real-time safety information for our airline. We are also concerned that transferring operation of the SEC to another federal agency could result in a disruption, degradation or filtering of critical information.

We urge you to support this program and seriously consider the ramifications associated with a change in program oversight. We operate polar flights each and every day. A degradation of performance in this program would cause us to become overly conservative in our flight planning. In our view, this program is not an example of a government program that is broken and in search of a fix. Quite to the contrary, our work in cooperation with the SEC exemplifies the use of American tax dollars at its best for the protection of U.S. citizens.

Again, thank you for allowing me to testify before the Committee. I look forward to any questions you may have.

Chairman Ehlers. Well, as one would--might expect from a pilot, you are finished with two seconds to spare, so your ETA calculation was very good.

Dr. Hedinger.

STATEMENT OF DR. ROBERT A. HEDINGER, EXECUTIVE VICE PRESIDENT, LORAL SKYNET, LORAL SPACE AND COMMUNICATIONS LTD.

Dr. Hedinger. Thank you, Mr. Chairman.

My name is Robert Hedinger. I am an executive vice president with Loral Skynet, a communications satellite service provider, and also a division of Loral Space and Communications. I am pleased to appear before your Subcommittee to discuss the effects of space weather on communication satellites and the vital role played by NOAA's Space Environment Center.

I would also like to mention that the Satellite Industry Association has also developed a record for this committee, which I would like to attach to our record, as well.

Chairman Ehlers. Without objection, so ordered.

Dr. Hedinger. Okay. Thank you.

I would like to provide the Subcommittee with some background on the economic importance of the U.S. satellite industry and then address specific questions included in your letter of invitation. Additional supporting material has been provided in the attachments to my record.

Let me begin by pointing out the significant commercial investment and critical telecommunication services that are at risk resulting from space weather effects. As the attached charts in the record will demonstrate, $49.8 billion of revenue was generated and $12.1 billion of investments were made in 2002 in this industry. And these figures are expected to grow over the next 10 years. Critical commercial satellite applications that are provided on this infrastructure include: direct to home entertainment video and audio services, nationwide services; broadcast and cable television, all of the networks have satellite distribution networks; radio and audio distribution; satellite news gathering; the collection of critical news events from events that are occurring across the country; paging services; location and tracking services; rural and remote access services for telephony, data, and Internet; critical services for remote education and telemedicine; data communications to hundreds of thousands of locations used by the retail industry for such applications as point of sale terminals, credit card processing, and inventory tracking.

I would now like to address, in more detail, the questions that you had addressed in your invitation.

The first question: "How does space weather affect satellite communications?" Temporary and/or permanent damage to on-board equipment resulting from electrostatic discharges, the space—the surface of the spacecraft can be

charged with the large amounts of charged particles in the environment and then discharged, causing an electrical spark, which can damage equipment. Performance degradations and service outages due to particle events, in particular, electrical sensors, which are used for maintaining pointing accuracy of the spacecraft, can be—can experience a similar effect to fog as a result of having high-energy particles around the sensors. Altitude control and pointing errors due to magnetic field variations. Certain spacecraft rely on a strong magnetic field to target the spacecraft to keep it aligned. When a geomagnetic storm occurs, the magnetic field fluctuates and sometimes can become quite weak and not be strong enough to drive the momentum of the spacecraft. So these are some of the major impacts that space weather has on the satellites.

The next question is: "How do satellite operators use the data that is provided by NOAA?" I see I am running short on time. I would love to go through a long list. There is a lot of this information in the document, but to cut it short, we can prepare ourselves for a lot of events that could be detrimental to the spacecraft ahead of time. We take precautionary measures. We may set up a reconfiguration of the spacecraft that, instead of having automated commands, we send manual commands to the spacecraft. Because of the environmental changes that take place, they could mask some true events that are occurring and cause satellites to go into a mode which is undesirable.

The third question you asked was: "What has happened in the last five years? What do we expect in the next five years?" Over the last five years, we have certainly gotten more data, but more importantly, we have had access to that data in a much more rapid and user-friendly environment as a result of the NOAA SEC approach to distributing this information to the commercial satellite industry. The next five years, we know that there is continuing research that needs to be done. In specific—specifically, we would love to have additional forecasts that can be specific about orbital locations and the impacts on very specific satellites.

The fourth question: "What would we do without it?" We couldn't live without this data. We need this data. It is absolutely critical for our operations.

In summary, Mr. Chairman, the functions that NOAA SEC performs to model, predict, and send out alerts on space weather has been, and continues to be, critical to commercial satellite operators. NOAA SEC has provided excellent service to communication satellite operators. It is critical to the commercial satellite industry that NOAA SEC continue providing these services without disruption.

Thank you, Mr. Chairman.

[The prepared statement of Dr. Hedinger follows:]

Prepared Statement of Robert A. Hedinger

Mr. Chairman and Members of the Subcommittee, my name is Robert Hedinger, I am an Executive Vice President with Loral Skynet, a communications satellite service provider, and a division Loral Space and Communications Ltd. I am pleased to appear before your Subcommittee to discuss the effects of space weather on communications satellites and the vital role played by NOAA's Space Environment Center.

I would like to provide the Subcommittee with some background on the economic importance of the U.S. satellite industry and then address the specific questions included in your letter of invitation.

Additional supporting material has been provided in the three attachments.

Let me begin by pointing out that significant commercial investment and critical telecommunications services are at risk resulting from space weather effects. As the attached charts in Appendix A demonstrate, $49.8 billion of revenue was generated and $12.1 billion of investments were made in 2002 in this industry and these figures are expected to grow in the next ten years.

Critical Commercial Satellite Applications include;

<bullet> Direct to Home Entertainment Video and Audio Services

<bullet> Broadcast and Cable TV

<bullet> Radio and Audio Distribution

<bullet> Satellite News Gathering

<bullet> Paging Services

<bullet> Location and Tracking Services

<bullet> Rural and Remote Access Service for Telephone, Data and Internet

<bullet> Critical Services for Remote Education and Telemedicine

<bullet> Data communications to hundreds of thousands of locations used by the retail industry for such applications as point of sale terminals (credit card processing) and inventory tracking.

Answers to Questions Asked in the Letter of Invitation

To address your first question, space weather can affect satellite operations in the following ways:

<bullet> Temporary and/or permanent damage to on-board equipment resulting from electrostatic discharges

<bullet> Performance degradations and services outages due to particle events

<bullet> Attitude control and pointing errors due to magnetic field variations

Additional information and examples are provided in Appendix B.

To address your second question, satellite operators use data and products from NOAA's Space Environment Center (SEC) in the following ways:

<bullet> By being prepared, the Satellite Control Centers (SCC) operated by Loral and other service providers can reduce the amount of service outage time by focusing on the corrective action more quickly (avoiding some of the initial troubleshooting).

<bullet> By communicating these events to our customers, Loral can provide them the ability to plan around potential problems.

<bullet> By activity scheduling, Satellite Control Centers can avoid sensitive maneuvers and housekeeping functions during peak storm activity.

<bullet> In some instances, SEC data is used in real-time to determine the cause of observed anomalies. Using the SEC data the SCC is able to determine if a reconfiguration of the spacecraft is warranted, or if the storm is small enough that we can maintain the current configurations.

<bullet> As part of the due diligence that is performed after every spacecraft anomaly, the SEC data is also analyzed. This is done to see if there is a link between the solar environment and the anomalous condition.

<bullet> Loral also uses the archive data from the SEC during the spacecraft design and analysis activities.

Additional information and examples are provided in the Appendix B.

To address your third question, five years ago there was less information available and the data format was difficult to work with (fax, paper copies, etc). This has improved significantly over the last five years to allow better access to the available information. Data is now available online and viewable at an individual engineers terminal.

In the next five years we expect to see a more reliable early warning system, a continuing improvement in the knowledge of the space environment through improved detectors and analysis tools for better spacecraft designs, and improvements in dynamic modeling for specific orbit locations.

Additional information is provided in Appendix B

To address your fourth question, the impacts to Loral and other commercial satellite operators of not being able to access the SEC services would be severe. Without the SEC information, satellite operators would not be able to cancel maneuvers based on solar environment levels and consequently we would not be able to avoid potential damage to

the spacecraft. Service outages would also occur more often and be longer in duration. Spacecraft design quality would be compromised without access to current and accurate Space Weather Data.

In summary:

<bullet> The functions that NOAA SEC performs to model, predict, and send out alerts on space weather has been and continues to be critical to Commercial Satellite Operators.

<bullet> NOAA SEC has provided excellent services to Commercial Satellite Operators.

<bullet> It is critical to the Commercial Satellite Industry for NOAA SEC to continue providing these services without disruption.

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APPENDIX B

Answers to Specific Questions Concerning Space Weather

Question 1

Please provide an overview of how space weather can affect satellite operations, including examples of historical events that have caused problems.

Charging Effects

Space weather affects the way the spacecraft body (or internal components) is charged. The spacecraft can only hold so much charge before it reaches a threshold for discharge. During extreme charging environments, this discharge occurs spontaneously and it is called an Electro Static Discharge (ESD) event. As an ESD event potentially contains a large amount of energy, it can be very hazardous to the spacecraft.

Spacecrafts have had major component failures that have been directly related to specific ESD events. On some spacecraft, several ESD events of the same type have occurred. These events have gradually weakened circuitry leading eventually to equipment failure. In addition, ESD events have lead to temporary upset of the spacecraft configuration. All of these events have led to customer outages until the operators have had time to reset the operational configuration using redundant equipment. Imagine if such an event happens during the Super Bowl or World Series. Until a switch over to a redundant transmission path happens, it can affect the TV Broadcasters by causing millions of dollars lost in advertising revenue and a set tens of millions of viewers.

Loral has experienced ESD events on several of their own spacecraft as well as spacecraft supplied to customers. Critical pieces of equipment have been lost due directly to ESD events including momentum wheels, and heaters/thermisters. We have had power equipment, earth sensors, payload units and telemetry and command equipment change operational state. We have had an accumulation of ESD events causing failure of solar array circuits. All of these events have the potential of temporarily or permanently reducing commercial communication or weather service to customers.

Immediate Particle Events

Sudden increase of protons and electrons caused by a storm can cause immediate problems that are not related to charging. The biggest concern here is in partially blinding sensor equipment. On most commercial spacecraft this problem is limited to the instrumentation responsible for determining pointing (earth sensors, star sensors, etc). During a big storm, these sensors do not operate to their full efficiency as they are partially blinded by much noise. Loral has seen attitude control system trips due to this type of particle induced noise. These trips normally result in loss of pointing control (or reduced pointing control) in at least one axis. If the error grows beyond our tolerance, service is affected.

Magnetic Events

Some spacecraft use the Earth’s magnetic field for control of pointing. These spacecraft have electro-magnets on board. These magnets interact with the Earth’s magnetic field putting a torque on the spacecraft. The magnets on the spacecraft are activated as needed to control pointing. During solar storms that affect Earth’s magnetic field, these spacecraft often have trouble maintaining pointing control. Without a strong magnetic field for the magnets to interact with, their efficiency is reduced greatly. During these times it is required to change the spacecraft’s actuators from magnetics to thrusters in order to maintain service.

Question 2

How does your organization use data and products from NOAA’s Space Environment Center (SEC)? In general, how much lead time do you need to make decisions for mitigating the effects of space weather?

Preparatory

In a perfect world, one week lead time would be desirable. If we had forecast data for the next week, this could be worked into our weekly activity plan. As this is not currently available, we utilize the data as it is available. Some of the warnings for the smaller storms only provide a few hours of notice. These we use in a real time manner when executing activities. Warnings for potentially large storm normally give a day or two to prepare. As these are the potentially more devastating storms, Loral uses this information as described in the following three sections.

Internal Advisements

Due to increased problems during solar storms as well as the potential necessity to run specialized procedures, Loral utilizes the SEC warnings to prepare. When a warning comes out that meets Loral's criteria for potential problems, internal advisements are issued. These advisements serve to prepare the Satellite Control Centers for any of these potential non-standard operations. By being prepared, the Satellite Control Centers can reduce the amount of service outage time by focusing on the corrective action more quickly (avoiding some of the initial troubleshooting).

The SEC site is monitored in real time 24□7. As events such as earth sensor glitches or attitude error hold off are encountered, the controllers in Loral's Satellite Control Center perform analysis to determine the next step. This analysis utilizes both spacecraft telemetry as well as the real time data from the SEC site. It is important to understand the current state of the spacecraft as well as the expected growth (or diminish) of the storm's strength before taking action.

External Communications

Loral performs external communications to its customers (called a code Orange) when space weather predicts reach predetermined values. This allows our customers to plan for potential spacecraft problems. By communicating these events to our customers, Loral provides them the ability to plan around potential problems. This provides them the ability to increase their service reliability.

Activity Scheduling

On some spacecraft, we have found a susceptibility to particular failures if certain events are performed during elevated levels of solar activity. In these cases, we check the solar forecast prior to scheduling the events in order to determine the likeliness of being able to execute them. We also check the space weather again just prior to execution of these events before proceeding in order to avoid problems.

An example of this is a spacecraft that has a change of state in the solar array drive electronics every time we perform a maneuver with elevated solar activity. As the problem involves an illegal state within the control electronics, we have been warned by the manufacturer to limit the number of times that this phenomenon occurs. The worry is that if we let it fail too often, we will weaken the path such that we will not be able to return the state back to normal. Without access to solar weather data, we would not be able to control this.

Another example of this also involves maneuver execution. Prior to performing a maneuver, Loral uses the SEC site to determine whether there is an expected proton event pending. As these types of storms tend to cause problems for the Earth sensing equipment, it is important to keep the spacecraft's attitude quiet during one of these events. If a maneuver were performed during one of these events multiple problems could be encountered. These problems include difficulty in calibrating the attitude fine control sensors, excessive attitude control firings or even potential attitude safety system trips.

Real-Time

In some instances, SEC data is used in real-time to determine the cause of issues. Examples of these are multiple earth sensor glitches or small attitude hold off. All of these have some affect on the pointing of the spacecraft. When these issues occur, the personnel in the SCC check the real-time data on the SEC site to see if there is a link. If the problems are a result of increased solar activity the information is escalated. We create an internal advisement and distribute them. If the activity is of sufficient level escalation will continue to our external customers.

Using the SEC data the SCC is able to determine if a reconfiguration of the spacecraft is warranted, or if the storm is small enough that we can maintain the current configurations. Examples of this reconfiguration are:

If a proton event of sufficient strength is on-going, and expected to continue for sometime, we would disable automatic on-board momentum unloads. As the wheels respond to the increased earth sensor noise, the spacecraft control algorithms mistake this for a buildup of momentum. The spacecraft will then fire thrusters to take care of this momentum. This firing of thrusters should not be occurring as them is no real build up of momentum.

During a magnetic storm, it is very useful to know the expected strength and length of time. This is due to our choices for control methods. For a weaker storm, we could increase the on-board magnetic current to try to compensate. For stronger storms, the increase in on-board magnetic current would not be enough to overcome the weakness in the Earth's magnetic field. In these cases, we need to go to a thruster control mode. These methods will allow for the continued control of roll. As both methods will cause problems with yaw control, it is important to know how long the storm will continue in order to correct the yaw error.

Post Processing

As part of the due diligence that is performed after every spacecraft anomaly, the SEC data is also analyzed. This is done to see if there is a link between the Solar environment and the anomalous condition. On every fish bone analysis Loral has been a part of, the solar environment plays an important part. Often this information has been critical in identifying the space environment as being the cause. This has led to modification of the spacecraft design to improve its immunity to the spade environment and to eliminate the particular failure mode.

Loral also uses the archive data from the SEC during the spacecraft deign and analysis activities.

Question 3

How would you compare our knowledge today of the impacts of space weather on satellite operations to what we knew five years ago, and to what we expect to know five years from now?

Last five years

During the last five years, we have expanded our understanding of the solar environment greatly. However, the biggest change in the last five years goes beyond what we have learned. The biggest change is in how we utilize it. Five years ago there was less information available (as far as what is being monitored), and it was difficult to work with (fax, paper copies, etc.). This has improved over the last five years to allow better access to the information. Data is now available online and viewable at an individual engineers terminal.

Having this data available has allowed a larger team across the industry to analyze the information to show relations to other events. One example is on one of our spacecraft. If we get a solar storm of sufficient magnitude late in an eclipse season, we often also get a transponder shut off coincident with it.

Having the Solar Environment data available allows us to better understand patterns that might otherwise never be understood.

Next five years

I think the industry push at this point is on two fronts:

1) The need for a more reliable early warning system. There has been much individual work on this from many sources. Though the obstacles to overcome are daunting, this would be the single biggest improvement for the next five years.
2) The improvement in the knowledge of the space environment.
   Although we have made great strides in understanding of the space environment, there are still several holes in on knowledge. Improved detectors and analysis tools are needed to provide for better spacecraft designs. Another area of improvement is modeling for specific orbit location. This is a 4D (3 axis with time) modeling to view how the local orbit environment changes with time.

Question 4

What would be the impact to your organization if SEC were no longer able to provide its space weather forecasts? Please provide specific examples when possible.

Impact

The impacts to Loral of not being able to access the SEC would be severe. Many of these have been mentioned in the answers to the previous questions.

One spacecraft whose health would be most adversely affected would be the spacecraft that exhibits an anomaly with its solar array drive electronics. On this spacecraft, when a maneuver is performed during elevated solar activity, the solar array drive electronics switches into an illegal state (stopping the solar array). Each time this has happened, the solar array drive electronics have been commanded back into a normal state successfully.

There is a concern that if this phenomenon were allowed to occur too often, we would be unable to command the solar array drive electronics back into a normal state. Without the SEC information, Loral would not be able to cancel maneuvers based on solar environment levels and consequently we would not be able to avoid this circumstance.

Service outages would also be more often and longer in duration. By having space weather forecast available, Loral is able to prepare in advance for potential situations. For example if a major proton event is expected (or occurring), the spacecraft can be configured to better ignore earth sensor glitches. In addition, the Satellite Control Center (SCC) can be prepared for potential anomalous events associated with the storm. In the case of an earth sensor glitching problem growing to a more serious problem on the spacecraft, the SCC can often reconfigure before any problems affects service. In the case of a magnetics loss of control, the sooner the SCC configures the spacecraft for the solar storm, the lower the attitude error will be.

Another way in which Loral would be affected is the overall spacecraft design quality. Spacecraft Manufacturers use information learned in anomaly investigations to improve their future designs. The better they are able to determine root causes to problems, the better they will be able to improve their designs. The best way to ensure the highest quality root cause analysis is to ensure access to the best data. This includes in-orbit telemetry data, design documents and space weather data. If information on the space environment were not available the spacecraft manufacturer would note able to consider this in the design and testing of his spacecraft or correlate design improvements on orbit.

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Discussion

Chairman Ehlers. And thank you. And thank you to all of the witnesses. Very good testimony.

We will now proceed with questions. And the Chair will ask the first questions. We each have five minutes, and we will— and that includes both the question and your answer, but we won't cut your answer off in mid-sentence, so don't worry about that.

Space Environment Center (SEC) Funding

First, I have a question. I hate to ask yes or no questions, but this is a simple one, and I would like to ask each of you to respond with a yes or no answer. In your opinion, should the Federal Government reduce or eliminate funding for NOAA's Space Environment Center? Dr. Hildner.

Dr. Hildner. My answer is that the funding should not be reduced or eliminated.

Chairman Ehlers. Colonel Benson.
Colonel Benson. No.
Chairman Ehlers. Dr. Grunsfeld.
Dr. Grunsfeld. No.
Chairman Ehlers. Kappenman.
Mr. Kappenman. No.
Chairman Ehlers. Krakowski.
Captain Krakowski. No, sir.

Chairman Ehlers. Hedinger.
Dr. Hedinger. No, sir.
Chairman Ehlers. Thank you.

The Appropriate Organization for Forecasting Space Weather

Second is—I would like to ask another question. Is there a compelling reason why the functions of the SEC should be moved to another agency, without specifying the agency? For example, is NOAA not providing services to you at the expected level or in the useful manner, or do you think some other branch of government would be more effective? Again, we will go reverse this time. Dr. Hedinger.

Dr. Hedinger. I believe the NOAA SEC is the most appropriate place to have this fall.

Chairman Ehlers. Okay. Captain Krakowski.
Captain Krakowski. Mr. Chairman, we believe that this is one of the finest examples of a well-running effort, and we don't see any reason at all to make a change.
Chairman Ehlers. Mr. Kappenman.
Mr. Kappenman. Since I wear both the power industry hat as well as a commercial provider that essentially competes with SEC in some aspects, I would like to answer that we think SEC is the most appropriate agency from both perspectives.
Chairman Ehlers. That reminds me, incidentally, of someone I knew who once questioned the need for NOAA and the National Weather Service said, "I get all of the weather I need from the TV programs." Since you—unfortunately, it was a Congressman, but he lost his next election. But at—from your position as both a user and competitor, that is a very meaningful answer.

Dr. Grunsfeld.
Dr. Grunsfeld. I think that the Space Environment Center and its relationship with NASA and I know for the United States Air Force and NOAA that this is a good example of how government agencies work well together, so I see no compelling reason why we would want to move it.
Chairman Ehlers. Colonel Benson.
Colonel Benson. I—sir, I would see no compelling reason to move the functions.
Chairman Ehlers. And Dr. Hildner, I assume I know your answer, but go ahead.

Dr. Hildner. I think you know NOAA's answer, but let me comment that our partnerships with the other agencies are already so good that I see no compelling reason to move space weather services out of NOAA.

Chairman Ehlers. I—let me just add that—I believe it was Captain Krakowski mentioned another point and that is, although I am sure that one of the military arms of the government could easily do this, there is also the possibility of filtering during a time of national emergency that simply the information would not flow freely. And I think we want to avoid that as well, in spite of their ability to do this.

Another follow-up question on that, and that is, would it make any sense for a non-governmental agency to do this either on a fee-for-service basis, excuse me, or under government contract? And we will go this way again. Dr. Hildner.

Dr. Hildner. Thank you.

We regard space weather as extremely analogous to the meteorological weather service. And so many of the arguments that we apply to the meteorological services and why those should be free to all users I believe apply equally to the space weather service. Let me comment with Mr. Kappenman sitting here that NOAA tends to predict and synthesize the space weather environment, and we leave it to commercial folks, for a fee, to tailor those products to specific systems that are affected by space weather events.

Chairman Ehlers. Colonel Benson.

Colonel Benson. No, sir, I wouldn't be in favor of changing who provides the data and how it is being procured.

Chairman Ehlers. Dr. Grunsfeld.

Dr. Grunsfeld. Well, at NASA, we are very protective of our national assets in space, as I am sure the Air Force is, as well. And we have a very good relationship with the SEC in meeting our needs, and I think we see no reason why we would want to change that.

Chairman Ehlers. Mr. Kappenman.

Mr. Kappenman. I also don't believe that it would be very practical or efficient to transfer this sort of function wholly to a commercial provider.

And if I could just speak a few seconds on the nature of the partnerships that we see developing in the commercial providers of space weather forecasts versus what NOAA does. If we look at NOAA's mission, they are to provide public information. And we actually see the medical industry as being how we are aligning ourselves and forming ourselves. Where NOAA is the general practitioner, handles most of the medical situations, but where you have a very serious space weather health problem from an infrastructure operator standpoint, you should be working with a specialist who can take that NOAA information and also knows how your infrastructure is impacted and work with you very closely on those very serious problems.

Chairman Ehlers. Are you going to change your name from Applied Power to Applied Clinic?

Captain Krakowski.

Captain Krakowski. When I consider the evolution of our navigation systems to become more dependent on satellites, and the FAA is another government agency that we have to work with in our navigation and communication issues, it seems like keeping it within a federal functionality seems right to us.

Chairman Ehlers. Okay. Dr. Hedinger.

Dr. Hedinger. Thank you.

Yes, at this point in time, I think that the services that are provided by NOAA SEC are generally applicable across a very broad environment, which is the right place to have a government service provide it. It spans the commercial

industry, the government industry, and very many other types of functions. Clearly, there are opportunities for some secondary applications that would be in the area of this—that we have just described here. But the functions that NOAA SEC perform would definitely be----

Chairman Ehlers. Thank you for your comments. My time is expired, but I hope you will also, as individuals, express those opinions outside this room with the other Members of Congress who are involved in this situation.

My time is expired. I am pleased to recognize the Ranking Member, Mr. Udall.

SEC Budget Compared to Other Federally Funded Programs

Mr. Udall. Thank you, Mr. Chairman. If I might, I would like to build on your line of questioning and start with the three witnesses who serve in the public sector.

And if I could, I would like to put the SEC's $8 million budget into context. As I see it, the—that budget is a very small part of the total federal budget for space weather. And Dr. Hildner, if I could start with you and move across, how does the SEC's budget compare with federal funding for the design, development, acquisition, and operation of space and ground-based sensors and for the research that has made space weather possible?

Dr. Hildner. I am reluctant to answer about the details of the expenditures in other agencies, but I believe that it is in the billions—or a billion dollars or so of research and sensor development for—that is applicable to space weather.

Mr. Udall. Colonel Benson.

Colonel Benson. Could you repeat your question, sir?

Mr. Udall. What I was trying to get at is we spend $8 million for the SEC function, but I wanted to put that in the context of all of the assets that we deploy as well as the research and development that we do in other federal arms.

Colonel Benson. I can't speak for the total amount in the rest of the federal arms, but it is a minute fraction compared to the value of the assets that we have on orbit and that we spend for R&D.

Mr. Udall. Dr. Grunsfeld, before you reply, I just want to welcome you. It is nice to see you again. Dr. Grunsfeld visited Boulder and the Ball Aerospace Company and has done some great work in repairing the Hubble Telescope as a space walker. And he is also a climber, and he fit in that comment about the— that small subset of interested people who ascend high mountains above 8,000 meters who would be subject to space weather events. And we want to take care of those people as well. So welcome, and great to see you here.

Dr. Grunsfeld. Thank you very much. Thank you for that recognition.

The—NASA has, you know, quite a few number of assets. Just in space science alone, I think we have about 30 satellites that are operational right now, including the Hubble Space Telescope, which, I think, was about $1.6 billion. And so if you look at the $8 million as a kind of insurance policy, you know, it would be an usually small percentage

compared to any other insurance that anybody would consider. It is, you know, certainly less than a percent.

Mr. Udall. Thank you. And yes, it is great to see you here, and thanks for all that you do.

Private Sector Interaction With the SEC

If I could extend now a set of questions to those of you from the private sector, and your testimony, I think, was very compelling. And I think you have answered this in part, but I want to give you another chance to amplify on your comments. Is your interaction with the SEC a one-way interaction? In other words, do you receive these forecasts or do you—are you also in a position where you are solicited for advice and input from the SEC?

Mr. Kappenman. Clearly, it is a two-way relationship. We depend, of course, very heavily upon the SEC to gather and disseminate data at high quality, high cadence that is needed for these environments. We do have a very successful and healthy interaction on what the important features of the environment are, where we can both serve the Nation and the important infrastructures better through things that we can do better in the space environment fields.

Captain Krakowski. While we use their products on a daily basis, the products themselves are not very useful unless we understand how to use them. And I think one of the greatest interactions of SEC was them opening their doors to us and their arms to have us come out to Boulder and learn all about this phenomena before we started to do this kind of flying. So it is very interactive and we do appreciate their warmth and their ability and willingness to help educate companies like ours on these sorts of issues.

Mr. Udall. Dr. Hedinger.

Dr. Hedinger. Thank you.

Yes. I would like to reiterate that this is a very
interactive relationship and a very customer-friendly relationship. The progress that has been made here in the last five years of getting real-time online access to data that we use on a day-to-day basis. In fact, our satellite control center right now is determining how to reconfigure satellites to minimize impacts.

Mr. Udall. Thank you.

SEC Improvements Within the Current Budget
If I could turn back to Dr. Hildner. Dr. Hedinger testified that Loral Skynet expects to see a series of things over the next five years: a more reliable warning system, improvements in knowledge of the space environment, improvements in dynamic modeling for specific orbit locations, and other changes and added products. Do you think NOAA or other partner agencies could supply these improvements if the funding level would remain at the $5 million proposed point at this time?

Dr. Hildner. No. I could amplify that answer, if you would like.

Mr. Udall. I—no, I think that is perfect.

If I might just get one last question in and to Dr. Hildner

once again. The testimony here, I think, suggests that we ought to be investing more in space weather. I am assuming that the budget, the Administration's budget of $8 million would maintain current capabilities and provide some funding for improvements. What opportunities would we be missing if we don't invest in additional efforts when it comes to space weather forecasting?

Dr. Hildner. You are absolutely correct that at the President's requested level we would be able to maintain our operations and make modest improvements. But we stand at a confluence of increasing demands, and some of which you have heard about today, and expectations from our customers, and at the same time, a great increase in opportunity. The DOD, NSF, and NASA are spending a great deal of money for research, new sensors, and so forth, which SEC, even at the President's requested budget, will not be able to incorporate into operations. In other words, the Nation's investment in space weather services improvements will not be garnered if SEC continues on at its current level of effort.

Mr. Udall. I thank the panel and the Chairman for his forbearance in extending a little more time to me. This is a very important topic. Thank you again.

Chairman Ehlers. Thank you.

We have a few more questions, and so we will start a second round. I understand Mr. Gutknecht does not—so I will begin with the second round. And I would point out, incidentally, before I do that, that again, I did a quick mental calculation. If you should receive the President's request, which is $8 million, that comes to just a bit more than three cents per capita in the United States. When you consider that if a commercial satellite went out that was carrying a television program, everyone would spend eight cents to call their TV— cable provider to complain, they would spend more than twice as much as they are spending to maintain the warning system.Sensors Aboard the Aging Advanced Composition Explorer (ACE) Spacecraft

My next question is for Dr. Hildner, Grunsfeld, and Colonel Benson. One of the most vital sensors for providing advanced warning in radiation and magnetic storms is located on, pardon me, NASA's Advanced Composition Explorer, sometimes called the ACE spacecraft. Yet this spacecraft is currently operating beyond its design life and there are no plans to continue collecting this type of solar wind data once ACE ceases to operate. Are NOAA, NASA, and the Air Force planning for a way to continue obtaining this vital data? And we will start with NOAA on this one. Dr. Hildner.

Dr. Hildner. The difficulty with the ACE spacecraft approaching its end of life and the possibility of not getting those enormously important data has been recognized in NOAA. And we are considering requesting the Congress for additional funds to obtain those data.

Chairman Ehlers. Let me just ask, the NPOESS satellites will be going up. It is a joint Air Force/NOAA effort. Could a—could one of these sensors be added to that satellite?

Dr. Hildner. NPOESS will have an improvement in the near-Earth space environment sensors, but because they are in polar orbit near Earth, they do not give us that advanced warning that the ACE satellite does one percent of the way from the Earth toward the sun out in the solar wind.

Chairman Ehlers. One percent, you said, of the distance?
Dr. Hildner. The ACE is stationed at----

Chairman Ehlers. It is about nine million miles?
Dr. Hildner. It is about----
Chairman Ehlers. Fifteen kilometers----
Dr. Hildner. About one million miles. It is 93 million miles to the sun, so one percent----
Chairman Ehlers. Right.
Dr. Hildner [continuing]. Is about one million miles----
Chairman Ehlers. Yeah. Right.
Dr. Hildner [continuing]. Toward the sun from Earth, and that is the place where the Earthward forces and the sunward forces balance and the spacecraft will sit there.
Chairman Ehlers. Yeah.
Colonel Benson.
Colonel Benson. Sir, we rely on the ACE data for the solar wind estimation. The Air Force has just launched, as of two weeks ago, a new block of DMSP satellites, Defense Meteorological Satellite Program. And in this new block of satellites, we have a series of space weather sensors on there. But they are in the low-Earth orbit, and they don't have a package specifically designed to do what the ACE program does.

Chairman Ehlers. Dr. Grunsfeld.

Dr. Grunsfeld. Hopefully the ACE spacecraft will keep

operating beyond its nominal lifetime margin for a good, healthy long time. And the National Academy, in its NRC report, did identify the source of these types of data as being critically important. And so that is something that the Office of Space Science, you know, has in its strategic planning. But as yet, I am not specifically aware, for our research activities, of any plans to replace that capability.

Chairman Ehlers. Is this an expensive satellite?
Dr. Grunsfeld. It is one of our explorer class satellites, and, you know, I am not sure what, in this context, "expensive" is. It is not—you know, it is not in the, you know, great observatory class. It is one of the smaller satellites.
Chairman Ehlers. Yeah. Okay. I—we will have to pursue that in the Committee, and—because I think that is a self-evident thing to do.
Dr. Grunsfeld. And we can provide you with more information about some of the experiments in the pipeline and how they might relate to this.

Chairman Ehlers. All right. I would appreciate that, because it shouldn't be that expensive if it is a single-purpose satellite. It takes—of course, it takes a fair amount of horsepower to get it up that far, but that is something we will pursue.

I have no other questions at the moment. Mr. Udall, do you have----

Vulnerability to Industry From Space Weather Events

Mr. Udall. Thank you, Mr. Chairman. I would like to take this opportunity to direct a couple of questions at the witnesses from the private sector.

Would you say that your organizations operations have become more vulnerable to space weather events over time or is it solely a matter of having gained a better understanding of the link between space weather events and specific problems you encounter during operations? Again, we can start with Mr. Kappenman and move across.

Mr. Kappenman. Yeah. In the prepared testimony, I do cite quite a bit of evidence that the power industry has learned that indicates that we are, because of various design changes, growth of the power grid and so forth, we are unequivocally growing more and more vulnerable to space weather. That being said, we are also learning much about space weather impacts. And we may not know exactly how vulnerable we really are. We know right now we are extremely vulnerable.

Mr. Udall. Um-hum.

Mr. Kappenman. And we also know that it is not going to be easy to become unvulnerable or invulnerable and undo what has essentially transpired through billions of dollars of investment in infrastructure, 50 years or more of development of that infrastructure.

Mr. Udall. Captain Krakowski.

Captain Krakowski. Thank you, sir.

Yeah, we are—five years ago, were it not for the ability

to have airplanes fly over 16 hours, we really could not even entertain dealing with such a risk. But now with the commercial opportunities opening up wider between Asia and the United States and the ability to fly longer range flights with the new technology airplanes coming up, this is somewhat new to us----

Mr. Udall. Um-hum.

Captain Krakowski [continuing]. Which is why we are so interested in it.

The other aspect of it is, well, as we contemplate moving more toward GPS-type navigation systems and away from land-based systems, there is an additional concern of what this kind of weather—solar weather impact would mean to that very critical infrastructure. And I think we are still in the learning mode with some of that.

Mr. Udall. Dr. Hedinger.

Dr. Hedinger. Thank you, Congressman Udall.

I think there are really two areas here. One is just the volume of services that have grown over the last several years. An example is the direct to home market. Now we have approximately 20 million households erect a home receiver. Five years ago, how many was that? But it has changed dramatically, and that continues to grow. But it is just the amount of business that is in space, the amount of business that depends on space for its revenue, so that is becoming more critical.

The other thing is the new technologies that are being developed. With the—there is a move toward on-board processing to be able to provide more efficient communications and more economical access services. An example is the new KA band on-board processing satellites. These are likely to be more sensitive to space weather since there are computer chips, et cetera, on board the spacecraft.

Thank you.

Vulnerability to Federal Agencies From Space Weather Events

Mr. Udall. Perhaps I could ask the government witnesses to comment on this as well, if you would, and again, Dr. Hildner— and I—if I restate the question. Would you say that organizations in the government operations have become more vulnerable to space weather events over time or is it solely a matter of having gained a better understanding of the link between solar weather events and specific problems that we encounter during operations?

Dr. Hildner. I would say it is the former. We have become more vulnerable, and partly because we have become more technological and those technological systems, as we become more dependent upon them, they, in fact, are becoming more vulnerable. And so we are becoming more vulnerable.

Mr. Udall. Colonel Benson.

Colonel Benson. Sir, I would agree with Dr. Hildner. I

think we are more vulnerable as we require—rely more and more on space-based assets. Those vulnerabilities are there for the assets that we have on orbit. Even our Global Positioning System has effects from space weather as far as the errors that are driven by space weather events. So our dependency on GPS has also magnified the impacts of a space weather event on navigation systems.

Mr. Udall. And I—space command based in Colorado, and I was sure that General Lord and others would underline what you had to say about the effects on our space command.

Dr. Grunsfeld.

Dr. Grunsfeld. Well, I think first and foremost, we are

interested in the safety of our crew. And I am very proud to say that, you know, we are coming up on having three years of human international crews living in space all of the time, 365/ 24/7. And so in that respect, we certainly are more vulnerable. In addition, we are kind of a victim of our own success in technology in that the capability of the microchips and the technology that goes into constructing all of the space assets that we have talked about have gotten a lot smaller and more compact and using technology that, in a sense, is more vulnerable to space radiation.

Relationship With the International Community

Mr. Udall. I thank the panel, and I might extend a request to the Chairman, I—we—one area we didn't cover was the relationship we have with the international community and their space weather forecasting capabilities and how we coordinate and whether there would be an effective—if the SEC was to be put out of business or the funding—the necessary funding wasn't in place, but----

Chairman Ehlers. Dr. Hildner, if you would just like to just answer that, comment on that.

Dr. Hildner. I would be happy to. In the interest of time, we had not mentioned our international partnership. There is an outfit called the International Space Environment Service. It has 12 regional warning centers around the world. NOAA's center in Boulder is one of those regional-warning centers. All of those centers exchange data actually through Boulder every day. And then Boulder synthesizes all of that information and puts out the global forecast as the world-warning agency of the International Space Environment Service. Of course, that would all go away if we were eliminated.

The Vital Role and Responsibilities of the SEC

Chairman Ehlers. The gentleman's time is expired. I would just like to conclude this hearing by several comments. First of all, it is obvious to me from your comments, Mr. Udall, that far too much government money is going to Colorado. And probably the SEC should move to Michigan where it would be closer to the Aurora Borealis. You could at least have the pleasure of observing that. More importantly, it is clear from today's hearing that the services that NOAA's SEC provides are unique and vital to our nation and its citizens every day, much more so than people realize, and as we just heard, also important to those of other countries.

Secondly, it is neither within the mandate nor the mission of the Air Force or NASA to take on these crucial responsibilities. And it is my opinion that a transfer of this sort, at this time, would require significant expenditures on the part of the Federal Government and certainly above the $8 million sought by the Administration for the SEC. It would also be very disruptive to the entire program.

So I believe that it is certainly advisable that this committee go on record as preserving the SEC precisely where it is. There is no reason to change it. "If it ain't broke, don't fix it," as the old saying goes, and so let us keep it going. And I hope—we will certainly pass this information on to the appropriators in the House and Senate. And I hope that all other interested parties would express that as well.

The fact that we are discussing this precisely as a space storm is occurring, and I understand that Japan has lost— temporarily lost one satellite and is about to lose another, indicates the importance of the work that is being done here.

Before I close, I just simply have a little housekeeping. I, first of all, want to thank you very, very much for your participation. We couldn't have had a better panel, broadly representative of the issue in both the governmental sector and the industry, and I appreciate your time. And above all, I appreciate your wisdom. So thank you for taking the time to be here.

If there is no objection, the record will remain open for additional statements from the Members and the answers to any follow-up questions the Subcommittee may ask of the panelists. And without objection, so ordered. And I would assume you would be willing to respond to questions in writing, should they come up.

Thank you again for your service, and it is my pleasure to declare the hearing adjourned just in time for another vote. The hearing is adjourned.

[Whereupon, at 12:03 p.m., the Subcommittee was adjourned.]

Appendix 1:

Biographies, Financial Disclosures, and Answers to Post-Hearing

Questions

Biography for Ernest Hildner

Dr. Hildner is the Director of NOAA's Space Environment Center. The Center is the Nation's 24-hour-a-day center for alerts, warnings and watches related to space weather. Under his direction, SEC also conducts research and consults on space weather instrument development for NOAA, NASA, and the Aid Force.

Dr. Hildner is a solar physicist who has worked for the High Altitude Observatory, NCAR, and at NASA Marshall Space Flight Center as head of its Solar Physics Branch. He was fortunate to be experiment scientist for Skylab and the Solar Maximum Mission during the 70's. His scientific speciality is coronal and interplanetary physics, in which he has published dozens of papers. He co-holds one patent for a variable-magnification x-ray telescope.

In addition to his administrative responsibilities with NOAA, Dr. Hildner is a Co-chair of the Committee on Space Weather for the National Space Weather Program, is a member of the advisory committees for the NOAO National Solar Observatory and NCAR High Altitude Observatory, and serves on review panels for NASA and DOD projects.

Answers to Post-Hearing Questions

Responses by Ernest Hildner, Director, Space Environment Center,

National Oceanic and Atmospheric Administration

Space Environment Center

Q1. In Col. Benson's written testimony it is mentioned twice that the complementary nature of the Air Force Space Weather Operations Center and the SEC allows each agency to realize significant cost savings. What is the dollar amount saved as a result of the Air Force and NOAA collaboration on space weather?

A1. The National space weather enterprise, with complementary service centers in NOAA and U.S. Air Force Weather, depends on a critical shared database with contributions from NOAA and the USAF complementing each other. However, the savings to the Nation go far beyond the collaborating service centers. NOAH would have to replace and pay for a large fraction of the USAF-provided data if USAF no longer provided it. Conversely, USAF would have to pay tens of millions of dollars per year for the sensors and their data now provided by NOAA, should NOAA no longer provide them.

USAF operates the ground-based Solar Environmental Observing

Network of observatories around the world. NOAA has no equivalent data

in the near-term for the data provided by this
$20M per year network.

Additionally, USAF pays the U.S. Geological Survey $150k per year to help it operate a ground-based magnetometer network so the data can be provided in near real-time to both USAF and NOAA. NOAA's Space Environment Center distributes to the public some products created at U.S. Air Force Weather Agency's center in Omaha; one of these is the immediate, three-hourly estimate of the value of the index characterizing global geomagnetic activity. This index is of great interest to civilian users; NOAA would have to create the product if USAF did not, at an estimated expense of $2M to port the software. Finally, USAF Space Command flies sensors on the Defense Meteorological Space Program (DMSP) series of spacecraft. The data are archived at NOAA's National Geophysical Data Center and used by Space Environment Center. The model NOAA plans to use to characterize and predict the ionosphere is being developed with USAF funding of about $10M and will be driven by data from DMSP. NOAA will save the $10M up-front cost of the model and the annual cost of fabricating and flying the instruments and getting the data because of USAF investments.

In all, we estimate that NOAA would have to spend several tens of millions of dollars per year to sustain the same level of services if USAF dropped from the national collaboration in space weather.

Q2. One of the most vital sensors for providing advanced warning of radiation and magnetic storms is located on NASA's Advanced Composition Explorer spacecraft. Yet, this spacecraft is currently operating beyond its design life and there are no plans to continue collecting this type of solar wind data once ACE ceases to operate. Are NOAA, NASA and/or the Air Force planning for a way to continue obtaining this vital data? If so, please explain the strategy.

A2. Real-time solar wind measurements from upstream of Earth, now obtained from NASA's ACE research spacecraft, are among the most vital data for providing space weather services. The ability to warn of geomagnetic storms approximately an hour in advance is due solely to these data. Delayed solar wind measurements, available from other NASA spacecraft operating in a "store and dump" mode, are of no operational benefit, though they have research value. ACE has already completed its prime research mission, but has been selected by NASA for extended operations, because of new, high-priority scientific goals that can be addressed with this valuable national asset. The spacecraft has enough propellant on board to maintain its new, looser, non-optimal for space weather purposes, orbit around Lagrange Point 1 (L1) until late into the next decade.

ACE has been a unique resource in that it continuously transmits, all day—every day, in near real-time, solar wind and energetic particle data that can be acquired by relatively small ground-based antennas. No other spacecraft can do that; unless the ACE capability for space weather is replaced, when ACE dies NOAA, its partners, industrial space weather service companies, and end users will all lose valuable products and services. Geomagnetic storms are especially important to electric power grid operators and radio communicators (including airlines).

NOAA, NASA and the USAF, will continue to consider options for providing ACE-like data.

Biography for Charles L. Benson, Jr.

Colonel Charles L. Benson, Jr., is commander of the Air Force Weather Agency. He leads over 900 agency members at 20 locations around the world providing centralized weather products and services, including climatological and space weather support, to USAF, U.S. Army, special operations national intelligence community and other DOD activities. He executes a worldwide weather support mission, that provides decision assistance to combat, reconnaissance, command and control, presidential support, treaty verification and airlift missions directed by the Joint Chiefs of Staff, theater commanders, and major command commanders.

Colonel Benson has served as a wing weather officer in Korea; executive assistant to the Commander, Air Weather Service, Scott AFB, IL; and Chief of the Advanced Systems Management Section, Offutt AFB, NE. He has commanded a weather detachment in Kansas and served as a program element monitor in Headquarters USAF's Directorate of Weather. Colonel Benson was assigned to Headquarters USAF's Directorate of Operational Requirements as Chief of Force Enhancement Requirements. He has served as Director of Weather for Headquarters Air Mobility Command's Tanker Airlift Control Center; Chief of Protocol for the Commander in Chief, United States Transportation Command; and Deputy Commander, 60th Support Group, Travis AFB, California.

Prior to his arrival at Offutt AFB, Colonel Benson commanded the United States Air Force Academy's 34th Support Group.

EDUCATION

1977 Bachelor of Science degree in Meteorology, Texas A&M University 1978 Officer Training School, Maxwell Air Force Base, Ala. 1985 Master's degree in Meteorology, St. Louis University 1986 Air Command and Staff College (Correspondence)

1990 Distinguished Graduate, Naval War College's Naval Command & Staff, Naval War College, Newport, R.I.
1991 Master's degree in National Security & Strategic Studies, Naval War College, Newport, R.I.
1995 Air War College, Maxwell Air Force Base, Ala.

ASSIGNMENTS AND DATES

1. September 1978-April 1981, wing weather officer, 463rd Tactical Airlift Wing, Dyess AFB, Texas 2. April 1981-June 1982, wing weather officer, 8th Tactical Fighter Wing, Kunsan Air Base, Korea 3. June 1982-January 1984, executive assistant to the commander, Air Weather Service, Scott Air Force Base, Illinois 4. January 1984-June 1985, student, St. Louis University, St. Louis, Missouri 5. June 1985-October 1987, chief, Advanced Systems Management Section, Air Force Global Weather Central, Offutt Air Force Base, Nebraska 6. October 1987-August 1990, commander, Detachment 23, 9th Weather Squadron, McConnell Air Force Base, Kansas 7. August 1990-December 1991, student, Naval War College, Newport, R.I.

8. December 1991-November 1992, program element monitor, Deputy Chief of Staff for Air and Space Operations, Headquarters U.S. Air Force, Washington, D.C.

9. November 1992-August 1994, chief, Force Enhancement Requirements, Directorate of Operational Requirements, Deputy Chief of Staff for Air and Space Operations, Headquarters U.S. Air Force, Washington, D.C.

10. August 1994-June 1995, student, Air War College, Maxwell Air Force Base, Alabama
11. June 1995-September 1997, director of weather, Tanker Airlift Control Center, Headquarters Air Mobility Command, Scott Air Force Base, Illinois
12. September 1997-August 1998, chief of protocol, U.S. Transportation Command, Scott Air Force Base, Illinois
13. August 1998-April 1999, deputy commander, 60th Support Group, Travis Air Force Base, California
14. April 1999-May 2001, commander, 34th Support Group, U.S. Air Force Academy, Colorado Springs, Colorado
15. May 2001-August 2002, vice commander, Air Force Weather Agency, Offutt Air Force Base, Nebraska
16. August 2002 to Present, commander, Air Force Weather Agency, Offutt AFB, Nebraska

AWARDS AND DECORATIONS

Legion of Merit

Meritorious Service Medal with five oak leaf clusters

Air Force Commendation Medal with one oak leaf cluster

Air Force Achievement Medal

EFFECTIVE DATES OF PROMOTION

Second Lieutenant August 15, 1978

First Lieutenant August 15, 1980

Captain August 15, 1982

Major June 1, 1989

Lieutenant Colonel June 1, 1993

Colonel April 1, 1999

Answers to Post-Hearing Questions

Responses by Colonel Charles L. Benson, Jr., Commander, Air Force Weather Agency

Questions submitted by Chairman Vernon J. Ehlers

Vital Sensors

Q1. One of the most vital sensors for providing advanced warning of radiation and magnetic storms is located on NASA's Advance Composition Explorer (ACE) spacecraft. Yet, this spacecraft is currently operating beyond its design life and there are no plans to continue collecting this type of solar wind data once ACE ceases to operate. Are NOAA, NASA and/or the Air Force planning for a way to continue obtaining this vital data? If so, please explain the strategy.

A1. Air, Force Weather (AFW) has a requirement for solar wind data, but does not field space-based systems. AFW has advocated for solar wind data and will continue to do so. We continue to advocate for environmental monitoring capabilities and to leverage existing and proposed Air Force Space Command, NASA, and NOAA satellites and sensors. Once ACE ceases to operate, we will be without the data it provides with no other viable alternative system immediately available.

Dollar Amount Saved

Q2. In your written testimony it is mentioned twice that the complementary nature of the Air Force Space Weather Operations Center and the SEC allows each agency to realize significant cost savings. What is the dollars amount saved as a result of the Air Force and NOAA collaboration on space weather?

A2. The estimated annual space weather operations cost savings for the Air Force Weather Agency (AFWA) is $11.4M. This cost savings is comprised of $6.8M from leveraging the research and technology transition performed by SEC. Additionally, there would be an up-front cost (significantly greater that the annual operation costs of $10M)

to initially set up all of SEC's operations and research at AWA, if SEC's mission was transferred to the Air Force.

Biography for John M. Grunsfeld

PERSONAL DATA: Born in Chicago, Illinois. Married to the former Carol E. Schiff. They have two children. John enjoys mountaineering, flying, sailing, bicycling, and music. His father, Ernest A. Grunsfeld III, resides in Highland Park, Illinois. Carol's parents, David and Ruth Schiff, reside in Highland Park, Illinois.

EDUCATION: Graduated from Highland Park High School, Highland Park, Illinois, in 1976; received a Bachelor of science degree in physics from the Massachusetts Institute of Technology in 1980; a Master of science degree and a doctor of philosophy degree in physics from the University of Chicago in 1984 and 1988, respectively.

ORGANIZATIONS: American Astronomical Society. American Alpine Club. Experimental Aircraft Association. Aircraft Owners and Pilot Association.

SPECIAL HONORS: W.D. Grainger Fellow in Experimental Physics, 1988-89. NASA Graduate Student Research Fellow, 1985-87. NASA Space Flight Medals (1995, 1997, 1999, 2002). NASA Exceptional Service Medals (1997, 1998, 2000). NASA Distinguished Service Medal (2002). Distinguished Alumni Award, University of

Chicago. Alumni Service Award, University of Chicago. Komarov Diploma (1995), Korolov Diploma (1999, 2002).

EXPERIENCE: Dr. Grunsfeld's academic positions include that of Visiting Scientist, University of Tokyo/Institute of Space and Astronautical Science (1980-81); Graduate Research Assistant, University of Chicago (1981-85); NASA Graduate Student Fellow, University of Chicago (1985-87); W.D. Grainger Postdoctoral Fellow in Experimental Physics, University of Chicago (1988-89); and Senior Research Fellow, California Institute of Technology (1989-92). Dr. Grunsfeld's research has covered x-ray and gamma-ray astronomy, high-energy cosmic ray studies, and development of new detectors and instrumentation. Dr. Grunsfeld studies binary pulsars and energetic x-ray and gamma ray sources using the NASA Compton Gamma Ray Observatory, x-ray astronomy satellites, radio telescopes, and optical telescopes including the NASA Hubble Space Telescope.

NASA EXPERIENCE: Dr. Grunsfeld was selected by NASA in March 1992, and reported to the Johnson Space Center in August 1992. He completed one year of training and is qualified for flight selection as a mission specialist. Dr. Grunsfeld was initially detailed to the astronaut Office Mission Development Branch and was assigned as the lead for portable computers for use in space. Following his first flight, he led a team of engineers and computer programmers tasked with defining and producing the crew displays for command and control of the International Space Station (ISS). As part of this activity he directed an effort combining the resources of the Mission Control Center (MCC) Display Team and the Space Station Training Facility. The result was the creation of the Common Display Development Facility (CDDF), responsible for the on-board and MCC displays for the ISS, using object-oriented programming techniques. Following his second flight, he was assigned as Chief of the Computer Support Branch in the Astronaut Office supporting Space Shuttle and International Space Station Programs and advanced technology development. Following STS-103, he served as Chief of the Extra-vehicular Activity Branch in the Astronaut Office. Following STS-109 Grunsfeld served as an instructor in the Extra-vehicular Activity Branch, and worked on the Orbital Space Plane, exploration concepts, and technologies for use beyond low earth orbit in the Advanced Programs Branch. He is currently the NASA Chief Scientist detailed to NASA Headquarters. A veteran, of four space flights, STS-67 (1995), STS-81 (1997), STS-103 (1999) and STS-109 (2002), Dr. Grunsfeld has logged over 45 days in space, including 5 space walks totaling 37 hours and 32 minutes.

SPACE FLIGHT EXPERIENCE: STS-67/Astro-2 Endeavour (March 2-18, 1995) was launched from Kennedy Space Center, Florida, and returned to land at Edwards Air Force Base, California. It was the second flight of the Astro observatory, a unique complement of three ultra-violet telescopes. During this record-setting 16-day mission, the crew conducted observations around the clock to study the far ultra-violet spectra of faint astronomical objects and the polarization of ultra-violet light coming from hot stars and distant galaxies. Mission duration was 399 hours and 9 minutes.

STS-81 Atlantis (January 12-22, 1997) was a 10-day mission, the 5th to dock with Russia's Space Station Mir, and the 2nd to exchange U.S. astronauts. The mission also carried the Spacehab double module providing additional mid-deck locker space for secondary experiments. In five days of docked operations more than three tons of food,

water; experiment equipment and samples were moved back and forth between the two spacecraft. Grunsfeld served as the flight engineer on this flight. Following 160 orbits of the Earth the STS-81 mission concluded with a landing on Kennedy Space Center's Runway 33 ending a 3.9 million mile journey. Mission duration was 244 hours, 56 minutes.

STS-103 Discovery (December 19-27, 1999) was an 8-day mission during which the crew successfully installed new gyroscopes and scientific instruments and upgraded systems on the Hubble Space Telescope (HST). Enhancing HST scientific capabilities required three space walks (EVA). Grunsfeld performed two space walks totaling 16 hours and 23 minutes. The STS-103 mission was accomplished in 120 Earth orbits, traveling 3.2 million miles in 191 hours and 11 minutes.

STS-109 Columbia (March 1-12, 2002). STS-109 was the fourth Hubble Space Telescope (HST) servicing mission. The crew of STS-109 successfully upgraded the Hubble Space Telescope installing a new digital camera, a cooling system for the infrared camera, new solar arrays and a new power system. HST servicing and upgrades were accomplished by four crew members during a total of 5 EVAs in 5 consecutive days. Grunsfeld served as the Payload Commander on STS-109 in charge of the space walking activities and the Hubble payload. He also performed 3 space walks totaling 21 hours and 9 minutes, including the installation of the new Power Control Unit. STS-109 orbited the Earth 165 times, and covered 3.9 million miles in over 262 hours.

Answers to Post-Hearing Questions

Responses by John M. Grunsfeld, Chief Scientist, National Aeronautics

and Space Administration

Question submitted by Chairman Vernon J. Ehlers

Q1. One of the most vital sensors for providing advanced warning of radiation and magnetic storms is located on NASA's Advanced Composition Explorer spacecraft. Yet, this spacecraft is currently operating beyond its design life and there are no plans to continue collecting this type of solar wind data once ACE ceases to operate. Are NOAA, NASA and/or the Air Force planning for a way to continue obtaining this vital data? If so, please explain the strategy.

A1. NASA's Advanced Composition Explorer (ACE) was launched in August 1997 from the Kennedy Space Center. It carried six high-resolution sensors and three monitoring instruments to sample low-energy particles of solar origin and high-energy galactic particles with a collecting power 10 to 1,000 times greater than past or planned experiments. In addition, the ACE payload includes a real-time space weather monitoring capability, and NOAA has used this for space weather prediction.

ACE has already completed its prime research mission, and in the 2003 Senior Review process, it was selected for extended operations because of new, high-priority scientific goals that can be addressed with this valuable national asset. The spacecraft has enough propellant on board to maintain an orbit at Lagrange Point 1 (L1) until late into the next decade.

ACE has been somewhat of a unique resource because of the type of solar wind data it collects; therefore, NASA has devised a plan to continue collecting similar solar wind data after ACE ceases to operate. NASA is currently moving the Wind spacecraft into L1 to serve as a "hot" backup to ACE in order to maintain our research capability in the area of solar wind turbulence. The Solar and Heliospheric Observatory (SOHO) will also provide complementary data. NASA believes that these resources will ensure continued research and data collection in this discipline in the event that ACE is no longer able to produce useful scientific research.

Questions submitted by Democratic Members

Q1. Is the ISS currently operating with a waiver due to the lack of functional radiation monitors on board?

A1. No. There are currently several functional radiation monitors on board the International Space Station (ISS), including both Russian and U.S.-provided hardware. There is a waiver in place for the Tissue Equivalent Proportional Counter (TEPC), which is one part of the overall ISS on-orbit radiation monitoring system.

Q1a. Is the fact that the Space Environment Center can provide predictions one of the justifications used to grant the waiver?

A1a. There is no overall waiver granted for radiation monitoring because there is functional equipment currently on orbit. The TEPC waiver was presented and approved at the 10 March 2003 ISS Vehicle Control Board. During the discussions regarding the waiver, continued availability of space weather warnings, alerts, and real-time data on solar proton fluxes from the Space Environment Center (SEC) were mentioned as an additional rationale for why it was acceptable to continue without the TEPC.

Q1b. Is NASA currently depending on the SEC in order to provide direction to the ISS crew about radiation protection actions?

A1b. Yes. Real-time data provided by the SEC are the primary information used in developing recommendations to the flight control team. This team directs the crew to take appropriate actions to minimize their radiation exposure.

Q1c. Did the Space and Life Sciences Directorate highlight the "potential that ground-tracked radiation and forecasting from satellites will be reduced or eliminated in FY 2004 (NOAA)" as a concern in their Stage Ops Readiness Rev. meeting on Sept. 24, 2003, while preparing for the launch of the current ISS crew?

A1c. Yes. The Johnson Space Center (JSC) Space and Life Science Directorate (SLSD) highlighted the potential risk posed by the loss of SEC data in the September 24, 2003 SORR discussions and in the October 2, 2003 Flight Readiness Review (FRR).

Q1d. When does the waiver expire?

A1d. The waiver for the ISS TEPC expired October 31, 2003 and is in the process of being extended to April 2004.

Q2. Is the failure of the TEPC one of the elements that led to the recommendation by two managers responsible for monitoring the ISS environmental systems not to launch the current crew to ISS?

A2. The lack of a functional on-orbit TEPC was one element of the overall degradation of on-orbit real-time environmental monitoring on ISS that raised concerns.

Q2a. Was their ultimate decision to agree to go ahead with the launch based on plans to launch a replacement TEPC aboard Progress Flight 14? When is that launch scheduled to occur?

A2a. Yes. Launching a TEPC on ISS Flight 14P (Progress M-49) was one of the specific items cited in the exception to the ISS Flight 7S (Soyuz TMA-3) CoFR. At the time of the CoFR, 13P was scheduled for launch in November 2003 and 14P was scheduled to launch in January 2004. Since that time, the launch of 13P has moved to no earlier than late January 2004. As a result, NASA has requested that the TEPC be manifested on 13P. The manifest for 13P is still under review.

Q2b. Was the TEPC replacement originally scheduled to fly aboard Progress 12, but removed because it cost too much to certify it to fly on a Russian vehicle?

A2b. The original schedule envisioned launching the TEPC in Nov. 2003 on ISS Flight 13P. However, work on recertifying the TEPC for launch was delayed for several months because of funding issues. Because of this delay, the JSC Engineering Directorate determined that the hardware could not be ready for delivery in time for ISS Flight 13P, so TEPC was moved to ISS Flight 14P. When the 14P Progress missions slipped, NASA requested that the TEPC be manifested on ISS Flight 13P (January 2004). The manifest for ISS Flight 13P is currently under review. This TEPC required additional certification to meet Russian launch requirements (Progress launch vibration test), as well as some additional testing to allow operation in the Russian segment of the ISS (i.e., Russian power qualification).

Q2c. Is it important to have the TEPC installed aboard the ISS no later than January to calibrate it as the Sun approaches the minimum activity levels of its 11-year cycle?

A2c. Ideally, in order to be prepared for the earliest potential maximum crew exposure to solar radiation, the TEPC should be on orbit by April 2004. This date is driven by the following considerations: during the last solar cycle, the time of maximum crew exposure preceded the point of actual solar minimum by nine months; SEC's current projection of future solar activity levels places solar minimum sometime between January 2006 and July 2007. Using January 2006 as the earliest possible date for solar minimum, the point of maximum crew exposure would be nine months earlier—or April 2005. If the TEPC is on orbit by April 2004, NASA will be able to collect data for at least one year prior to the point of maximum crew exposure; this will allow us to develop a baseline of performance for the TEPC on orbit, as well as to track the exposure rise to solar minimum.

Biography for John G. Kappenman

Education

Graduated with High Honors from South Dakota State University in 1976 with a Bachelor of Science degree in Electrical Engineering. Member of Eta Kappa Nu, Tau Beta Pl, and Phi Kappa Phi Honor Societies.

Professional Experience

1998-Present Metatech Corp, Joined firm in Senior Management Position as Division Manager of Applied Power Solutions Division. He directs the development of products, services, and consulting that are provided to clientele world-wide and primarily focusing on Geomagnetic Disturbances & Space Weather, Lightning, and substation and power system engineering and related specialty products.

1977-1998 Minnesota Power Held a number of professional positions in the organization, 1978-1980 Special Studies Engineer, 1981-1994 Supervisor of Transmission Planning Department, Responsible for Development and Conceptual Design in excess of $100 million in Transmission Construction Projects. 1994-1998 Manager of Transmission Power Engineering Department. Responsible for Substation and Control Engineering Functions arid associated Technology Transfer.

1995-1998 University Minnesota-Duluth Dept. of Electrical & Computer Engineering—Instructor for Senior Technical Elective Courses in Power Systems and Senior Seminar.

Other Professional Activities; Faculty Member of the Electromagnetic Transients Program extension courses held at the University of Minnesota in 1982 and at the University of Wisconsin in 1984. Faculty member for the EMTP courses at the University of Minnesota Extension Program since July 1990. He has served as Chairman of the Industry Advisory Board for the University of Minnesota Center for Electric Energy. He has served on a National Academy of Sciences Panel on the National Geomagnetic Initiative. In March 1997, he was invited by the Presidents Commission on Critical Infrastructure Protection to brief the Commission on the "The Impact of Space Weather on Power Systems and their Operation." He is also a member of the Organizing Committee for the NATO Advanced Science Institutes Conference on Space Weather Hazards being held in June 2000 in Crete. Mr. Kappenman has also served as a member of the Science Advisory Panel in July 2000 to the NOAA Space Environment Center. He was on the Scientific Organizing Committee of the NATO Advanced Research Workshop on Effects of Space Weather on Technology Infrastructure (ESPRIT) held in Rhodes in March 2003. He is a member of the Editorial Advisory Committee to the AGU International Journal of Space Weather. He is one of the founders and current Chairperson of the Commercial Space Weather Interest Group.

He has been an active researcher in power delivery technologies and his primary engineering contribution has been his research work on magnetic storms and their disruptive effects on electric power systems. He is leading a design team to develop forecasting and mitigation techniques. He has also been a collaborator with EPRI and Global Atmospherics on the development and application of the Fault Analysis and Lightning Location System that will allow economic Location-Centered mitigation of

lightning to transmission networks, work for which he has been granted a U.S. Patent. He is also one holds a U.S. Patent for his design of this device. He has been a principle investigator on a number of EPRI research projects on these and other subjects.

Mr. Kappenman is one of the principle investigators under contract with the Commission to Assess the Threat to the United States from Electromagnetic Pulse (EMP Commission). The EMP Commission was established by Congress under the provisions of the Floyd D. Spence Defense Authorization Act of 2001, Public Law 106-398, Title XIV. The EMP Commission was chartered to conduct a study of the potential consequences of a high altitude nuclear detonation on the domestic and military infrastructure and to issue a report containing its findings and recommendations to the Congress, the Secretary of Defense, and the Director, FEMA.

Engineering, Scientific and Professional Societies

He is a Senior Member of the Institute of Electrical and Electronics Engineers and the Power Engineering Society, and has served as the Chairman of the Transmission and Distribution Committee (1994-1996). He is also a member of the following IEEE Working Groups: GIC and Power System Effects, Flexible AC Transmission, and Lightning Performance of Transmission Lines and Distribution Lines. He is a member of the American Geophysics Union. Registered as Professional Engineer in the State of Minnesota, License #25100.

Honors and Awards

He is a recipient of the IEEE Walter Fee Outstanding Young Engineer Award. The Westinghouse Nikola Tesla Engineering Award, two IEEE PES Prize Paper Awards and twice awarded EPRI Innovator Awards.

Principal Publications

J.G. Kappenman, V. Koschik, F.E. Hammerquist, W.E. Reid, R.G. Rocamora,

"The Existence and Control of Secondary Arc Current Harmonics in Long-Line Single-Phase Reclosing Applications," IEEE PAS Transactions, Vol. PAS-99, July/August, 1980, Paper a80 006-7, page 1318.

J.G. Kappenman, "Planning, Design, and Application of a 500kV Single-

Phase Reclosing Scheme," Paper presented at the 1980 Minnesota Power Systems Conference, October 14-15, St. Paul, MN.

N. Mohan, J.G. Kappenman, V.D. Albertson, "Harmonics and Switching

Transients in the Presence of Geomagnetically-Induced Currents," IEEE PAS Transactions, Vol. PAS-100, February 1981, pp. 585-593.

V.D. Albertson, J.G. Kappenman, N. Mohan, G.A. Skarbakka, "Load-Flow

Studies in the Presence of GeomagneticallyInduced Currents," IEEE PAS Transactions, Vol. PAS-100, February 1981, pp. 594-607.

J.G. Kappenman, V.D. Albertson, N. Mohan, "Current Transformer and

Relay Performance in the Presence of Geomagnetically-Induced Currents," IEEE PAS Transactions, Vol. PAS-100, March 1981, pp. 1078-1088.

J.G. Kappenman, V.D. Albertson, N. Mohan, Investigation of

Geomagnetically Induced Currents in the Proposed Winnipeg-Duluth-Twin Cities 500kV Transmission Line, Electric Power Research Institute Report EL-1949, July 1981.

J.G. Kappenman, G.A. Sweezy, V. Koschik, K.K. Mustaphi, "Staged Fault

Tests with Single Phase Reclosing on the Winnipeg-Twin Cities 500kV Interconnection," IEEE PAS Transactions, Vol. PAS-101, March 1982, pp. 662-673.

N. Mohan, V.D. Albertson, T.J. Speak, J.G. Kappenman, M.P. Bahrman,

"Effects of Geomadnetically-Induced Currents on HVDC Converter Operations," IEEE PAS Transactions, Vol. PAS-101, November 1982, pp. 4413-4418.

J.G. Kappenman, F.S. Prabhakara, C.R. French, T.F. Clark, H.M. Pflanz,

V.D. Albertson, N. Mohan, Mitigation of Geomagnetically-Induced and DC Stray Currents, Electric Power Research Institute Report EL-3295, December 1983.

Editor, Coordinator, and Co-Author of the IEEE Special Publication

90^{TH}0291-5 PWR, "Effects of Solar-Geomagnetic Disturbances on Power Systems," Sponsored by the PES Technical Council, Special Panel Session Report from the IEEE FES Summer Meeting, July 1989, Long Beach, CA.

J.G. Kappenman, V.D. Albertson, "The Geomagnetic Storm of March 13,

1989: Power System Effects," Paper presented at the 1989 Minnesota Power Systems Conference, October 3-5, 1989, St. Paul, MN.

J.G. Kappenman, "Field Tests to Measure Large Power Transformer

Behavior to GIC Excitation," EPRI Conference on

Geomagnetically-Induced Currents, EPRI Publication TR-100450, pages 6.1-16, November 8-10, 1989, San Francisco, CA.

J.G. Kappenman, D.L. Carlson, G.A. Sweezy, "GIC Effects on Relay and

CT Performance," EPRI Conference on Geomagnetically-Induced Currents, EPRI Publication TR-100450, pages 10.1-16, November 8-10, 1989, San Francisco, CA.

V.D. Albertson, J.G. Kappenman, "Measuring GIC," Paper presented at

the EPRI Conference on Geomagnetically-Induced Currents, November 8-10, 1989, San Francisco, CA.

J.G. Kappenman, V.D. Albertson, "Mitigation of GIC," Paper presented

at the EPRI Conference on Geomagnetically-Induced Currents, November 8-10, 1989, San Francisco, CA.

J.G. Kappenman, G.A. Sweezy, S.R. Norr, “GIC Mitigation: A Neutral

Blocking/Bypass Device Conceptual Design and Performance Evaluation,” Paper presented at the EPRI Conference on Geomagnetically-Induded Currents, November 8-10, San Francisco, CA.

J.G. Kappenman, S.R. Norr, G.A. Sweezy, D.L. Carlson, V.D. Albertson,

J.E. Harder, B.L. Dchmsky, “GIC Mitigation: A Neutral Blocking/Bypass Device to Prevent the Flow of GIC in Power Systems, IEEE FES Special Publication 90TH0357-4-PWR, Special Panel Session July 17, 1990, pages 45-52.

J.G. Kappenman, V.D. Albertson, “Bracing for the Geomagnetic Storms,”

feature article for IEEE Spectrum Magazine, pp. 27-33, March 1990.

J.G. Kappenman, “Geomagnetic Disturbances and Power System Effects,”

Solar Terrestrial Predictions Workshop Proceedings, U.S. Dept of Commerce, NOAA, pp. 131-141, May 1992.

J.G. Kappenman, S.R. Norr, “Application of Phase Shifting Transformers

in the Upper Midwest,” IEEE Special Publication, Current Activity in Flexible AC Transmission Systems, Publication #92TH 0465-5PWR, April 1992, pp. 45-52.

J.G. Kappenman, “Static Phase Shifter Applications and Concepts,”

EPRI FACTS Conference Proceedings, EPRI TR-101784, December 1992.

J.G. Kappenman, D.L. Van House, “Thyristor Controlled Phase Angle

Regulator Applications and Concepts for the Minnesota-Ontario Interconnection,” EPRI FACTS Conference 3, October 1994.

S. Nyati, M. Eitzmann, J. Kappenman, D. VanHouse, N. Mohan, A. Earls,

“Design Issues for a Single Core Transformer Thyristor Controlled Phase-Angle Regulator,” IEEE Transactions on Power Delivery, October 1995, Vol. 10, Number 4, pp. 2013-2019.

J.G. Kappenman, D.L. VanHouse, “Utility Fault Diagnostics: Use of the

National Lightning Detection Network at Minnesota Power,” International Lightning Detection Conference, Tucson, Arizona, Feb. 1995.

J.G. Kappenman, “Emerging Power Delivery Technologies: ‘Location-

Centered Lightning Mitigation’ and ‘Transformer Dynamic Rating’, A Utility Perspective of the Operational and Economic Benefits,” EPRI Power Delivery Conference, Washington DC, May 1996.

J.G. Kappenman, “Geomagnetic storms and Their Impact on Power Systems:

Lessons Learned from Solar Cycle 22 and the Outlook for Solar Cycle 23,” IEEE Power Engineering Review, May 1996, pp. 5-8.

J.G. Kappenman, D.L. Van House, “Location-Centered Mitigation of

Lightning-Caused Disturbances," IEEE Computer Applications in Power, Vol. 9, July 1996, pp. 36-40.

J.G. Kappenman, L.J. Zanetti, W.A. Radasky, "Space Weather From a

User's Perspective: Geomagnetic Storm Forecasts and the Power Industry," EOS Transactions of the American Geophysics Union, Vol. 78, No. 4, January 28, 1997, pp. 37-45.

J.G. Kappenman, L.J. Zanetti, W.A. Radasky, "Geomagnetic Storms can

Threaten Electric Power Grid," Earth in Space, American Geophysics Union, Vol. 9, No. 7, pp. 9-11, March 1997.

J.G. Kappenman, W.A. Radasky, J.L. Gilbert, I.A. Erinmez, "Advanced

Geomagnetic Storm Forecasting: A Risk Management Tool for Electric Power Operations," IEEE Plasma Society Special Issue on Space Plasmas, December 2000, Vol 28, #6, pp. 2114-2121.

J.G. Kappenman, "Geomagnetic Storm Forecasting Mitigates Power System

Impacts," IEEE Power Engineering Review, November 1998, pp. 4-7.

J.G. Kappenman, "Advanced Geomagnetic Storm Forecasting for the

Electric Power Industry," American Geophysics Union Press Book "Space Weather" Geophysical Monograph #125, July 2001.

J.G. Kappenman, Chapter 4.9--" Geomagnetic Disturbances and Impacts

Upon Power System Operations," The Electric Power Engineering Handbook, CRC Press/IEEE Press, pp. 4-150-165, published 2001.

I.A. Erinmez, J.G. Kappenman, W.A. Radasky, "Management of the

Geomagnetically Induced Current Risks on the National Grid Company's Electric Power Transmission System," Journal of Atmospheric and Solar Terrestrial Physics (JASTP) Special Addition for NATO Space Weather Hazards Conference June, 2000, in press 2001.

L.J. Lanzerotti, L.V. Medford, C.G. MacLennan, J.S. Kraus, J.G.

Kappenman, W. Radasky, "Titans-Atlantic Geopotentials during the July 2000 Solar Event and Geomagnetic Storm," for "BASTILLE FLARE ISSUE" of Solar Physics, Kluwer Academic Press, release for Fall 2001.

J.G. Kappenman, "Advanced Geomagnetic Storm Forecasting for the

Electric Power Industry," American Geophysics Union Press Book "Space Weather" Geophysical Monograph #125, July 2001, pages 353-358.

J.G. Kappenman, Chapter 13--"An Introduction to Power Grid Impacts and

Vulnerabilities from Space Weather," NATOASI Book on Space Storms and Space Weather Hazards, edited by I.A. Daglis, Kluwer Academic Publishers, NATO Science Series, Vol. 38, pg 335-361, 2001.

I.A. Erinmez, S. Majithia, C. Rogers, T. Yasuhiro, S. Ogawa, H. Swahn,

J.G. Kappenman, "Application of Modelling Techniques to Assess Geomagnetically Induced Current Risks on the NGC Transmission System," CIGRE Paper 39-304, Session 2002.

W.A. Radasky, J.G. Kappenman, R. Pfeffer, "Nuclear and Space Weather

Effects on the Electric Power Infrastructure," NBC Report, Fall/Winter 2001, pp. 37-42.

J.G. Kappenman, Space Weather and the Vulnerability of Electric Power

Grids, in Effects of Space Weather on Technology Infrastructure, edited by I.A. Daglis, Kluwer Acad., Norwell, Mass., in press, 2003.

J.G. Kappenman, "SSC Events and the Associated GIC Risks to Ground-

Based Systems at Low and Mid-Latitude Locations," AGU International Journal of Space Weather, in press 2003.

J.G. Kappenman, "Electric Power Grids and Evolving Vulnerability to

Space Weather," feature article for AGU International Journal of Space Weather, in press 2003.

J.G. Kappenman, "Opinion: Systemic Failure on a Grand Scale—August

14, 2003," signed opinion article for AGU International Journal of Space Weather, in press 2003.

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Biography for Henry P. (Hank) Krakowski

Vice President—Corporate Safety, Security & Quality Assurance

United Airlines

Named to this position in November 2001, Captain Krakowski is responsible for corporate Safety, Security and Quality Assurance. These responsibilities cover all flight, operational, computer and maintenance functions, including emergency response. His organization is based in Chicago and has both Safety, Security and QA personnel worldwide.

Hank joined United as a pilot in 1978 and has served as Director of Flight Crew Planning and most recently as Director—Flight Operations Control. He was in charge of Flight Operations at United's Operations Control Center on September 11th 2001. In addition to his officer duties Hank also flies the Boeing 737 out of O'Hare.

A native of Evanston, Illinois, Hank holds a Master's degree in Business & Management and a Bachelor's degree in mechanical engineering from St. Louis University. Hank has served as chairman of communications and national spokesman for the Air Line Pilots Association.

Active in numerous aspects of aviation, he is also a rated Flight Dispatcher and practicing Aircraft Mechanic. In addition to rebuilding two aircraft, Hank has been an

airshow pilot with the Chicago based Lima Lima aerobatic demonstration flight team. He lives in Deerfield, IL.

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Biography for Robert A. Hedinger

Dr. Robert Hedinger, Executive Vice President at Loral Skynet, U.S.A, is responsible for Sales, Marketing and Client Services. He joined AT&T Bell Laboratories in 1978 as a Satellite Systems Engineer responsible for Satellite System Design, Satellite Transmission Planning, and International Technical Regulatory Matters. He led marketing and sales for AT&T SKYNET Satellite Services from 1991 to 1993. He led Business Development efforts for AT&T and subsequently for Loral SKYNET from 1993 through 2002. Since then he has been responsible for Sales, Marketing, and Client Services. Dr. Hedinger participated in ITU activities since 1980. He chaired the U.S. delegation to CCIR Study Group 4 for three years and participated as a U.S. delegate to three WRCs. He participated as Vice Chairman of U.S. Delegation to WARC ORB'88.

Dr. Hedinger received his Ph.D. in Physics from the University of Cincinnati, Cincinnati, Ohio in 1975.

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Appendix 2:

Additional Material for the Record

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What Is Space Weather? Why Is It Important?

The Sun is a variable star. Its magnetic field varies on a time scale from seconds to decades. The origins of solar variability are still poorly understood, but it causes the Sun

to produce vast explosions (flares and coronal mass ejections) and streams of ionized gas (the solar wind). The space environment, in which the entire Solar System exists, is controlled and modulated by these outpourings from the Sun. This variation in the space environment is called “space weather.”

Fortunately, the Earth has a magnetic field and atmosphere that partially protects us from the daily changes in geospace conditions. However, some of these effects do make their way into the Earth system and can damage our spacecraft and endanger the health and safety our astronauts. Here on Earth, they can affect technologies vital to our civilization such as degrading communications, disrupting electrical power transmission, increasing corrosion rates in oil pipelines, increasing the radiation doses received by passengers and crew on some commercial airliners, and decreasing the accuracy of GPS.

The future of space exploration beyond the immediate Earth environment (i.e., beyond the protection of the Earth’s natural shields) is intimately linked to the necessity of understanding space weather. If we are to send astronauts to Mars or set up a permanent base on the Moon, for example, then understanding these phenomena and being able to predict them will be vital to ensuring our explorers’ safety.

Our Needs for Space Weather Data and Forecasts

Lockheed Martin Space Systems Company has a major stake in space weather. All of our space-related programs use space weather data in the planning, design, and operation of new orbital systems. Radiation dosage, communications quality, navigation and position measurement, surveillance, and mission life are concerns related to space weather in preparing reliable and successful space projects for the U.S. government. One of many possible examples: our Astronautics group (Denver, Colorado) uses SEC space weather forecasts to help scheduling the launches of Atlas and Titan rockets.

Our Advanced Technology Center in Palo Alto, California, works on a wide variety of space weather programs including building instruments for solar monitoring from the NOAA GOES spacecraft and the NASA Living With A Star (LWS) and Solar Terrestrial Probe programs. They research space weather phenomena originating from the Sun and model their direct effects in geospace. They have used the predictions from the NOAA SEC since the launch of the Solar Maximum Mission in 1980 to help optimize the scientific return from some of their solar missions.

Roles of Government, Academia and Industry in Space Weather

NSF, in collaboration with NOAA, DOD, NASA, and several other agencies, produced a study identifying the urgent need for a coordinated approach to space weather. This led to the National Space Weather Initiative. A part of this program was designed to improve the observations and research of space weather in the science community. This effort was spearheaded by NASA and NSF; which defined the outstanding theoretical and observational problems that need to be addressed. This led to the LWS program at NASA and comprehensive modeling projects at NSF.

Academia is important to the ongoing development of space weather because much of the ground-breaking research goes on at universities. While much of this research is of

purely scientific interest, some of it leads directly to models and visualization techniques that are applicable to space weather forecasting. The NOAA SEC is responsible for being familiar with these advances and how they might best be applied to forecasting.

Because the NASA charter focuses on science rather than operational monitoring of phenomena like space weather, the task of gathering long-term space weather data fell to NOAA, hence the inclusion of space weather instruments on NPOESS and GOES-R. NOAA also takes the discoveries made by NASA and NSF research that are specifically relevant to space weather forecasting and turns them into the appropriate data products on which the space weather user community depends.

The SEC has acted as the interface between the space weather science and user communities. For example, they have organized a very successful series of annual meetings, Space Weather Week, which bring these different space weather communities (researchers, modelers, commercial suppliers, and users) together to help understand each other's capabilities and requirements. Without this vital role of the SEC, space weather forecasting would be many years behind where it is today.

Industry provides the capability to build the instruments, spacecraft, and ground systems for NASA research programs and uses that experience to supply the necessary high-reliability monitoring systems for NOAA. The aerospace industry is also one of the many users of NOAA's space weather products.

Other government agencies (e.g., DOD, FAA, and DOE) are major users of NOAA space weather forecasts. They help define the observational requirements and data products that they want from the SEC. There is a marked rise in the number of companies whose business can be affected by space weather; these include the increase in commercial usage of GPS, cell phones, and the need for power grids to run nearer to capacity limits. This upsurge in the need for space weather products has resulted in a growing number of small businesses from all over the United States that provide space weather products specifically tailored to single-end-user needs. These companies rely entirely on the data and forecasts from the SEC.

Future Applications of Space Weather

The continuity and fidelity of the current space weather data and forecasting capabilities provided by NOAA SEC is vital. We should also consider what is needed in the future. Our investment and reliance on space technology are growing, and we need to respond to this by increasing our capability to forecast the operational environment of these ever more sophisticated and expensive space assets. To keep pace with these advances and new priorities, we believe that the SEC needs to grow steadily over the next few years.

Recently there has been increasing scientific interest in the potential link between space weather effects and climate change. It has been estimated that 30 to 50 percent of the recent climate change could be attributable to changes in the Sun. If this link is demonstrated to exist, as many scientists think it will, and the mechanisms are understood so that the space weather input to our climate can be modeled to accurately predict future

climate change, then the solar and geospace data, processed and archived by NOAA, will be of huge economic importance to the Nation's long-term planning of water and land usage. Consequently, we cannot afford to lose or disperse the core of space weather expertise currently resident at the SEC in Boulder, Colorado.

Conclusions

The stage of development of space weather at present is very similar to that of meteorological forecasting more than 40 years ago. The data are sparse and incomplete, and the forecasts are not as accurate in the long-term as some of the users would like. The increase in data acquisition capability represented by the new NPOESS and GOES-R space weather instruments, plus the influx of new data from the current GOES Solar X-ray Imager series, will result in a significant increase in our capability to forecast space weather effects more accurately over a longer period. To take full advantage of this upsurge in space weather data and demand for more forecast products, we need a growing capability at the NOAA SEC, not a reduced one.

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Prepared Statement of Dr. W. Kent Tobiska
President and Chief Scientist
Space Environment Technologies
1676 Palisades Drive
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The shorter-term variable impact of the Sun's photons, solar wind particles, and interplanetary magnetic field upon the Earth's environment that can adversely affect technological systems is colloquially known as space weather. It includes, for example, the effects of solar coronal mass ejections, solar flares and irradiances, solar and galactic energetic particles, as well as the solar wind, all of which affect Earth's magnetospheric particles and fields, geomagnetic and electrodynamical conditions, radiation belts, aurorae, ionosphere, and the neutral thermosphere and mesosphere.

The U.S. activity to understand, then mitigate, space weather risks is programmatically directed by the interagency National Space Weather Program (NSWP) and summarized in its NSWP Implementation Plan [2000]. That document describes a goal to improve our understanding of the physics underlying space weather and its effects upon terrestrial systems. A major step toward achievement of that goal is the ongoing development of operational space weather systems which link models and data to provide a seamless energy-effect characterization from the Sun to the Earth. The NOAA Space Environment Center is the key agency providing the raw information necessary for inputs into these systems and the continued support by NOAA SEC to space weather users is of critical importance in our technology-based society.

In relation to space weather's effects upon the ionosphere, there are challenges to space- and ground-systems that result from electric field disturbances, irregularities, and scintillation. Space and ground operational systems that are affected by ionospheric space weather include telecommunications, Global Positioning System (GPS) navigation, and radar surveillance. As an example, solar coronal mass ejections produce highly variable and energetic particles embedded in the solar wind while large solar flares produce elevated fluxes of ultraviolet (UV) and extreme ultraviolet (EUV) photons. Both sources can be a major cause of terrestrial ionospheric perturbations at low- and high-latitudes. They drive the ionosphere to unstable states resulting in the emergence of irregularities and rapid total electron content (TEC) changes.

Trans-ionospheric radio communications and GPS navigation systems are particularly affected by these irregularities. The ionosphere's ability to reflect high frequency (HF) radio signals is affected and conditions are created where HF radio propagation is not feasible when signal amplitude and phase scintillations are degraded. For GPS navigation systems users in perturbed ionospheric regions, the timing of GPS signals becomes significantly and adversely degraded, translating directly into location inaccuracy and even signal unavailability.

Ionospheric perturbed conditions can be recognized and specified in real-time or predicted through linkages of models and data streams such as those provided by NOAA SEC. Linked systems must be based upon multi-spectral observations of the Sun, solar wind measurements by satellites between the Earth and Sun, as well as by measurements from radar and GPS/TEC networks. Models of the solar wind, solar irradiances, the neutral thermosphere, thermospheric winds, joule heating, particle precipitation, substorms, the electric field, and the ionosphere provide climatological estimates of non-measured present and predicted parameters. Data provided by NOAA SEC are continuously used by these models.

Space Environment Technologies, a company that provides advanced space weather products and services for government and aerospace customers, supports NOAA Space Environment Center in a common effort to develop operational ionospheric forecast systems that will detect and predict the conditions leading to dynamic ionospheric changes. Such systems will provide global-to-local specifications of recent history, current epoch, and 72-hour forecast ionospheric and neutral density profiles, TEC, plasma drifts, neutral winds, and temperatures. Geophysical changes will be captured and/or predicted (modeled) at their relevant time scales using data assimilation techniques. Linked physics-based and empirical models that will provide thermospheric, solar, electric field, particle, and magnetic field parameters will enable reliable forecasts and will mitigate risks from space weather to our technological systems.

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Comments of the Electric Power Research Institute (EPRI)

EPRI is a non-profit corporation formed by U.S. electric utilities in 1972 as the Electric Power Research Institute to manage a national, public/private collaborative research program on behalf of EPRI members, their customers, and society. Today, EPRI has over 1,000 members consisting of government-owned utilities (both federal and non-federal), rural electric cooperative associations, investor-owned utilities,

Independent and Affiliated Transmissions Companies (ITC and ATC), Independent System Operators (ISOs), and Regional Transmission Operators (RTOs), foreign (international) utilities, independent power producers, and governmental agencies engaged in funding electricity-related research and development.

EPRI has gained a worldwide reputation for excellence and credibility in scientific research and technology development related to electricity. As a tax-exempt scientific organization under Internal Revenue Code Section 501 © (3), EPRI makes its research results available through its technology transfer program, including publication of reports, licensing of intellectual property, and sponsoring seminars and conferences.

INTRODUCTION

Moderate and local disturbances in the power grid as a result of solar storms were seen from time to time, but was not fully understood that the possible damage could be serious until the storm of March 31, 1989. As a result of this storm, the Province of Quebec suffered a complete blackout and major equipment damage occurred in the northern United States. Since that event, the industry has been aware of the potential harm and has become more careful about noting Space Environment Center (SEC) alerts and responding to them.

The Northeast Blackout of August 14, 2003 was a reminder that the power grid is dynamic and that the necessary operational balance must be maintained with some care. Solar storms represent another disturbing influence which can unsettle the system if we are not careful. The alerts of the Space Environment Center provide critical information used by many utilities to gauge how to plan their operations during times of expected stress.

How likely is it that we will see a repeat storm of severity equal to that of March 13, 1989? We have since experienced a half of a sunspot cycle and not seen a comparable storm impact the earth. On the other hand there are compelling reasons to expect that our system is becoming more susceptible, rather than less, to the same disturbance.

Several trends combine to this so:

> Deregulation has increased the purchase of power from more remote locations and thereby increased the long distance flows of power over the grid. Longer lines are more vulnerable to disruption from solar storms.
>
> The relative loading of lines and transformers compared with their ratings have increased as load has grown faster than new installations. Equipment used near its limits of temperature and magnetic flux can be more easily pushed into failure from solar storms.
>
> The use of microprocessors in electric energy consuming devices and appliances is rising dramatically. As a result, US business and industry is increasingly demanding more reliable, digital quality electrical supply. Microprocessor-based devices are more prone to disturbance and to misinterpretation of noisy signals that are likely to result from the effects of solar storms on the power grid.

Against the unknown probability of a recurrence (admittedly not a high probability) there must be balanced the projected cost of a widespread outage. This cost could be very

high indeed. In the United States, the region of highest risk runs form the Canadian border down to the middle of the country. Because the Magnetic North Pole is displaced somewhat towards the eastern U.S., the region of highest risk does not extend as far south into California as it does into Virginia. By coincidence, the recent Mid-West/Northeast Blackout of August 14 and 15, 2003 can serve as a reasonable model of what might happen from the recurrence of a high magnitude solar storm in the eastern U.S.

We value the alerts issued by the Center to our industry. Many utilities curtail elective maintenance operations and take steps to distribute their generation more evenly on the basis of these alerts. Several utilities have combined under the leadership of EPRI to pool readings of solar induced currents in real time so we can better assess the current status of any ongoing event.

We value the studies the Center makes of the solar wind and the evidence and data it is accumulating that will one day give us a much better understanding of phenomena we only observe today. It would be of great value if one day the Center was able to predict further into the future and with more certainty what to expect from the solar flows.

We value the studies of solar phenomena, the drivers of all the effects we experience. Understanding here may be further away, but could be even more valuable for predicting releases many days into the future.

It is not clear that any other public or private organizations have the budget or interest to pursue such long-term matters. The solar phenomena influence industries as diverse as communications, oil and gas pipelines and the electric power industry. The U.S. military has an interest in the matter of solar disturbances, which can disrupt GPD systems and indirectly impact them through loss of electric power.

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Prepared Statement of Timothy L. Killeen

Director

National Center for Atmospheric Research

I wish to thank Chairman Ehlers, Ranking Member Udall, and Members of the Subcommittee on Environment, Technology and Standards for holding the October 30 Subcommittee hearing, What Is Space Weather and Who Should Forecast It? Space Weather is a relatively new, but critical area of scientific research and operations that may not be understood or appreciated by many in a manner that captures the field's importance to the Nation's security and technological preeminence in the world. You are doing the country a great service by examining the state of the science and recent questions that have been raised by Congress about who should forecast space weather and provide warnings about threats from solar storms. I write this not only from my position as director of the National Center for Atmospheric Research (NCAR), but as principal investigator of an instrument on the, (TIMED) satellite. A major goal of TIMED is to improve our ability to predict and understand Space Weather.

I would like to address the work and positioning of the Space Environment Center (SEC) of the National Oceanic and Atmospheric Administration (NOAA), the main topics of the October 30 hearing. I have experience working with the scientists of SEC

and was quite concerned to see the FY 2004 marks and language in both the House and Senate NOAA bills regarding the Center. The President's request for SEC provided it with a $3 million increase over FY 2003. As I am sure you are well aware, the House mark eliminated this increase, keeping the account flat. Worse, the Senate zeroed SEC out and included the following language in the committee report: The "Atmospheric" in NOAA does not extend to the astral. Absolutely no funds are provided for solar observation. Such activities are rightly the bailiwick of the National Aeronautics and Space Administration and the Air Force.

The atmospheric sciences community is fully aware of the requirement in both the House and Senate bills to review NOAA research operations. Such a review will, I believe, strengthen those operations and provide long-term benefits to the country. However, the language of the Senate bill in particular seems to criticize research activities within NOAA across the board and single out SEC as an inappropriate NOAA function. This approach seems to me likely to be of significant harm to the Nation's scientific endeavors.

SEC has made many extraordinary basic and applied research contributions that have been described in detail by SEC Director Hildner in his testimony. These include the real-time monitoring and forecasting of solar events such as radiation storms that can damage satellites and electrical grids. The Center provides forecasts and real-time data that enable the prediction of solar effects on the Earth's magnetosphere, ionosphere, and upper atmosphere. These effects include enhancements of the radiation belts, ionospheric interference with communication and navigation systems, and changes in the orbits of satellites. SEC is the undisputed world leader in space weather forecasting, and its services are of significant value to commercial, military, and research endeavors conducted in near-Earth space.

In cooperation with the U.S. Air Force, SEC operates the Space Weather Operations Center, which serves as the national early warning center for space disturbances that can affect people and equipment working in the space environment. Research satellites such as the Hubble Space Telescope as well as communications and surveillance satellites are protected by the Center's activities, as are astronauts on the Space Station. Additional SEC activities include the prediction of solar influences on the Earth's magnetosphere, ionosphere and thermosphere. SEC predicts energetic particle fluxes in the Earth's ring current of geomagnetically trapped ions and electrons, ionospheric disturbances and their effect on radio communication, and thermospheric densities that affect satellite drag. The skill and knowledge to be able to provide these assessments are not easy to come by, taking years of experience to develop. Also taking much skill and experience to develop are effective ways in which to provide end users with information needed for operational purposes. SEC does an excellent job on both fronts.

The geophysical indices SEC provides are used by a wide number of scientific researchers, students, postdoctoral students, and the general public. They are employed in models of the upper atmosphere, ionosphere, and magnetosphere, and are important for operational studies. Disrupting SEC at this time would have a negative impact on studies involved with NSF-sponsored programs such as Coupling, Energetics and Dynamics of Atmospheric Regions (CEDAR), Geospace Environment Modeling (GEM), and Solar,

Heliospheric, and INterplanetary Environment (SHINE), as well as satellite studies of NASA and the DOD.

Space weather basic and applied research at SEC provides critical support to the operational forecasting and data services. SEC maintains active collaborations with the National Center for Atmospheric Research, the University of Colorado, Boston University, and many other institutions engaged in the extensive and challenging endeavor of obtaining a full and detailed physical understanding of the processes that drive solar activity, solar particle and electromagnetic radiation, changes in the solar wind and magnetic field, and the response of the magnetosphere-ionosphere-thermosphere system to those changes. In particular, SEC is a national leader in developing numerical models of the solar wind and the ionosphere, and data assimilation techniques applied to the upper atmosphere. Research at SEC is of very high quality and, I believe, is an irreplaceable component of current multi-institutional projects to create the next generation of coupled Sun-to-Earth numerical modeling systems for space weather forecasting.

As stated above, language in the Senate budget for FY04 implies that SEC functions should be transferred to NASA or to the Department of Defense (DOD). I have close working knowledge of the programs of NASA and believe that it is an agency that is not equipped to provide support for continuous ("24□7") data and forecast services, having other priorities more critical to its core mission. Therefore, I do not believe that NASA would provide an appropriate home for SEC operational activities in the near-term. DOD could conceivably manage the operational arm, but would not be an appropriate home for the research activities conducted at SEC. In addition, DOD's primary responsibility is military defense of the Nation. In times of war or other military emergency, it is conceivable that DOD operations would be classified and would pertain only to military matters. In this situation, response to civilian concerns relating to solar geomagnetic and radiation storms would likely be of lower priority.

I am sure that you are aware of the recently released National Research Council (NRC) decadal study on research strategy in solar and space physics titled, The Sun to the Earth—and Beyond. In this document, the eminent members of eight Blue Ribbon panels, committees, and boards strongly endorse SEC and recommend throughout that NOAA, NASA, DOD, and the National Science Foundation collaborate to lead the military and civilian effort to continue and to expand solar and space research, research applications, the acquisition of real-time data, and technology development.

A recommendation on page 14 of the NRC report states that "NOAA should assume responsibility for the continuance of space-based measurement such as solar wind data. . ." This is a recommendation by numerous experts in the field. Absolutely nowhere in this document is there a recommendation that NOAA extricate itself from solar and space weather work because it is inappropriate to its mission. To the contrary, recommendations throughout elucidate the critical role that NOAA plays among the four involved agencies.

Though constrained by limited budgets SEC has done excellent work within NOAA and I believe it makes sense for it to continue to reside there. NOAA's mission reads in part, "To understand and predict changes in the Earth's environment. . .to meet our

nation's economic, social, and environmental needs." The Sun makes life on Earth possible and causes tremendous environmental changes. To better understand the Sun's behavior is to better understand Earth's environment. To understand the threats of solar geomagnetic and radiation storms and warn of their possible impacts contributes to meeting our nation's economic, social, and environmental needs. In my opinion, SEC's work is an integral part of the NOAA mission.

I understand that NOAA leadership is considering the transfer of SEC (should it survive the FY 2004 Appropriations process) from the Office of Oceanic and Atmospheric Research (OAR) to the National Weather Service (NWS). Transfer of SEC to NWS could strengthen its operational mandate, and provide a programmatic environment appropriate to its national mission. I would have some concern, though, that the critical, basic research side of the Center could become undervalued within the overwhelmingly operational environment of NWS. The two sides of SEC are symbiotic and not readily separated without seriously compromising the forecasting side. As has been stated before, operations are only as strong as the research and research applications behind them. To diminish one is to weaken or cause stagnation in the other. I would like to urge the Committee to seek assurances from NOAA leadership that, if SEC is transferred from OAR to NWS, the research side of the laboratory will receive continued support within NWS, or will be maintained elsewhere within NOAH with a close working relationship to the operational side.

In closing, I would like to note that NOAA/SEC is the undisputed world leader in space weather forecasting. SEC has an effective balance of research and operational staff in the area of solar-terrestrial physics and an ideal scientific culture for the purpose of forecasting. To create such a balance and culture at any other U.S. institution would be difficult, time-consuming, and expensive.

SEC could, in principle, be transferred to another agency, but that would require unnecessary expenditures, disruptions, and a short-term (if not long-term) downgrading in the quality of forecasting. Space weather forecasting is of immense importance to this technologically advanced nation; it should be carried out at NOAA, the culture of which supports forecasting with a strong scientific basis.

Mr. Chairman, in your leadership role with the Committee, and as a fellow physicist, I hope you will appreciate the value to the country of protecting SEC's research and operational role within NOAA, the importance of which was illustrated well during the very recent solar storms that erupted in the Earth's direction. I thank you and Mr. Udall for the opportunity to submit this written testimony and I appreciate your attention to this important matter.

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Prepared Statement of Bruce Mahone

Space Weather Funding in Jeopardy

As a result of a Washington funding dispute, the Space Environment Center (SEC) in Boulder, Colorado, might have to close its doors in the coming months.

Funding for the Center has been reduced by the U.S. House of Representatives and cut entirely by the Senate. This could have a devastating impact on the U.S. airline industry, U.S. astronauts, the U.S. power distribution grid, worldwide navigation of all types, and U.S. military exercises.

The SEC is jointly operated by the Commerce Department's National Oceanographic and Atmospheric Administration (NOAA) and the U.S. Air Force.

Although other government entities collect data on space weather, no other facility serves as a focal point for aggregating and disseminating the full range of space weather information currently available. And no other office serves such a broad range of customers with its data—NASA, FAA, NOAA, DOD, and the private sector.

If the type of data provided by SEC were no longer available nationwide, some or all of the following effects could be expected:

Harmful radiation to airline passengers. Commercial airlines and high-altitude business jets flying polar routes during intense solar flares are subject to radiation doses as injurious to humans as the low-level radiation from a nuclear blast. This is the equivalent of 100 chest x-rays and would lead to increased cancer rates among crew and passengers. Without space weather information, aircraft operators do not know when to change direction to slower, yet safer non-polar routes.

Deadly radiation to astronauts. Astronauts venturing outside the Space Shuttle or International Space Station during intense solar activity are subject to dangerously high levels of radiation.

Loss of electrical power grids. For economic reasons, many portions of our nation's power grid regularly operate at peak capacity. If faced with a voltage spike induced by a magnetic storm, many nodes on the grid cannot handle the surge and would fail. When alerted that a magnetic storm is coming, however, grid operators can reduce the amount of electricity flowing through the grid, allowing "space" for the coming voltage spike and thus avoid system failure.

Critical navigational errors. Solar events and magnetic storms can interrupt or degrade navigation signals from Long Range Navigation (LORAN) systems and Global. Positioning Systems (GPS). This can lead to navigation system failures or, even worse, false position readings. Navigators notified of such intense space weather can switch to backup navigation systems, thus avoiding misdirected vehicles and potential crashes.

Military effects. Electromagnetic signals caused by solar emissions influence high frequency communications, satellite ultra-high frequency communications, and GPS navigation signals. They also increase interference or false returns to sunward and/or poleward looking radars. Those who track satellites and other objects in orbit can potentially lose their targets because of these changes in the atmosphere caused by space weather.

Some in Congress are concerned that NOAA should stick to its core mission of tracking weather within Earth's atmosphere and not concern itself with weather patterns in space. Space weather, however, does ultimately enter Earth's atmosphere and (as noted above) affects systems on the ground.

Others are concerned that SEC funding comes from a portion of NOAA's budget designated for scientific research rather than for operational forecasting. This is not, however, inconsistent with SEC's work. Forecasting space weather and using the forecasts in real time is still in its infancy. It is a field that has proved very helpful in numerous ways, but one that is still in need of extensive research.

The view of the aerospace industry is that the Space Environment Center is not "broken" so there is no reason to "fix" it by moving its function to NASA, DOD, or another agency. And curtailing the services provided by SEC is not an option, particularly considering the hazardous threat environment in which we find ourselves. Keeping our nation safe, secure, and economically viable requires every bit of critical information available. And a major component of that information is space weather.

AIA is taking an active role with its Space Council and legislative staff to ensure that SEC funding is restored. The amount of funding the office requires (roughly $5-8 million per year) is very modest compared to the benefits received from the products it offers for the good of our nation.

BEFORE THE STATE OF WASHINGTON

ENERGY FACILITY SITE EVALUATION COUNCIL

In the Matter of	)	
Application No. 2009-01	)	Public Comment Meeting
WHISTLING RIDGE ENERGY, LLC.	)	On Draft EIS
WHISTLING RIDGE ENERGY PROJECT	)	Pages 1 - 86
_____	)	

A Public Meeting in the above matter was held on Wednesday, June 16, 2010, at the Underwood Community Center, 951 Schoolhouse Road in Underwood, Washington at 6:30 p.m., before the Energy Facility Site Evaluation Council Members.

* * * * *

CHAIR LUCE: Good evening. My name is Jim Luce. I'm the Chair of the Washington State Energy Facility Site Evaluation Council, and we are here tonight to receive public comment on the Draft Environmental Impact Statement for the Whistling Ridge Energy Project. Tonight is June 16, 2010. We are gathered at the Underwood Community Center in Underwood, Washington. I want to thank all of you for coming to this meeting because I know it's a night meeting, and that takes you away from other priorities in your life.

I'll begin by introducing fellow Council Members that are with us here tonight, and I'll ask Council Members and staff from my right to introduce themselves beginning

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with Mr. Posner, Stephen Posner. It's all right to give your name. All right. Next to him is Al Wright, our manager for the Energy Siting Council. Next to him is Bob Wallis, our Administrative Law Judge. Next to him is Kyle Crews. Kyle represents us. He's with the Attorney General's Office.

MS. McDONALD: Mary McDonald with the Department of Natural Resources.

CHAIR LUCE: And Jeff Tayer with the Department of Fish and Wildlife, Dick Fryhling with the Department of Commerce. I've introduced myself already. On my left is Andrew Montano. Andrew is the Environmental Protection Specialist for the Bonneville Power Administration which you are aware we're doing this as a joint environmental impact statement together with Bonneville.

To Andrew's left, go ahead.

MR. MOSS: I'm Dennis Moss with the Utilities and Transportation Commission.

CHAIR LUCE: To Dennis's left is Judy Wilson. She's representing Skamania County.

So I'm going to ask Andrew to introduce the Bonneville people that are with him tonight.

MR. MONTANO: Good evening and thanks for coming. My name is Andrew Montana, and with me I have Susan Offerdal who is an environmental protection specialist and Heidi

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Helwig who is our public affairs specialist who is also available to answer any questions.

CHAIR LUCE: Thank you. A few comments about tonight's meeting. As you know, tonight's meeting is to receive comments on specific issues addressed in the Draft EIS. That's specific issues. It's not general views, although we appreciate everybody has them regarding such things as energy policy, alternative energy resources, the applicant, the proponents. Issues in the environmental impact statement is what we're here about tonight.

Due to the adjudicative proceedings that are occurring concurrently at the same time as review of the Draft EIS Council Members including myself are unable to talk with any of you. Under different circumstances if this was not an adjudication, we would be glad to talk to you. We like to talk to people, we like to answer questions, but the ground rules for the adjudicative proceeding do not allow us to do that so please understand.

If you do have questions about EFSEC or the Bonneville process direct them to Al, Al Wright or to Andrew. Andrew is not part of this adjudicatory process so he can be on the receiving end of your questions.

Now I'm going to briefly summarize this project. On March 10, 2009, Whistling Ridge Energy, LLC, a Washington limited liability company, submitted an application for site

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certification to the Energy Facility Site Evaluation Council to construct and operate the Whistling Ridge Energy Project, a 75-megawatt electrical wind generation facility. The proposed project would be located about seven miles north of the city of White Salmon in Skamania County, Washington. The proposed project site is privately owned land currently used for commercial timber harvest. Up to 50 wind turbines ranging in size of 1.2 to 2.5 megawatts and up to 426 feet tall would be installed for the project. The project also includes an operating and maintenance facility, a electrical substation -- that's Bonneville's part -- underground collector lines and systems, access roads, and other ancillary facilities.

A revised application was submitted on October 12, 2009 which changed site access by removing the use of a forest service road located within the Columbia River Gorge National Scenic Area.

Last month the Draft Environmental Impact Statement was issued directed by ESFEC and BPA. The EIS has been prepared consistent with the requirements of SEPA and NEPA. Because the State of Washington has a primary role in siting of this facility the DEIS follows the format contained in WAC 197-11 as adopted by EFSEC through WAC 463-47.

We will accept written comments tonight or

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comments may be submitted by mail to EFSEC or Bonneville. We will share comments. To be considered written comments, comments must be postmarked by July 19, 2010. Please submit your written comments to our EFSEC staff person seated at the sign-up table that you have with you tonight.

Tammy, are you back there? Everybody turn around and look at Tammy. Tammy is in charge of written comments. Say hello Tammy.

MS. TALBURT: Hello.

CHAIR LUCE: And Kayce is back there. Is Kayce back there with you? Kayce is here, trusty assistant.

So give your written comments if you have them with you to those staff members tonight. If you have any questions about EFSEC's review process, again talk to EFSEC staff, Stephen Posner, Al Wright, or you can contact Bruce Marvin, Counsel for the Environment.

Mr. Marvin, are you in the audience? Mr. Marvin is not in the audience this evening. Mr. Marvin can be reached. We will provide his e-mail address and phone number. He is the State Assistant Attorney General appointed to represent the public and its interest in protecting the quality of the environment. I want to stress he looks at the environmental issues from a state-wide perspective, not individual issues that each one of you may or may not have with the project. So it's a state-wide

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perspective that he brings to the table.

Tonight's comments are part of the Council's SEPA process, and Shaun is here with the court reporter machine. So I am going ask everyone to be silent when someone is speaking so we can hear what they're saying and Shaun can hear what they're seeing and get it down.

If you need to come and go during the meeting please do so as quietly as possible. Now sometimes I'm guilty of something which is and it's on. My cell phone is on and it's now going off. Would you please check your cell phone and make sure that they're off. We love ring tones, but we don't need to hear them this evening, at least not during the hearing.

When making a comment be as specific as possible about which section of the EIS that you're addressing, and if you inadvertently start drifting away from the subject of tonight's meeting, I'll ask you to refocus your comment. We've got a lot of people here tonight, and so we're going to have the three-minute rule. It's basically you say what you're going to say in an elevator ride. We will have Mr. Stephen Posner keeping time and he will be giving a one-minute warning. Again if you submit these comments in writing, they will be read by the Council. We read everything we get, and often it's a great deal of reading, but that's part of our job.

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If there are those among you who want to consolidate your time, that is if there are five of you speaking to a specific issue, you could get together and 5 times 3 is 15. Now, that's another way to do it, and that's perfectly reasonable. If you do that, then I would ask you to provide me the names of who's going to do the consolidation so we can strike those other names that are not speaking off of the list. I can see that that might be helpful to some people already.

So please be respectful. No applause, no negative comments. Everybody deserves respect. You can speak at tonight's meeting or tomorrow night's meeting but do not speak to the same subject matter twice, please. If you feel the need to speak tomorrow night, you will be given the chance to do so, but you will come at the end of the line. And hopefully and I trust everybody in good faith would only speak if they have brand new information that they couldn't otherwise present in writing or orally.

If you have written comments, as I've said please submit them to Tammy. Don't read them into the record. Standing before us and reading extensive comments is not making them anymore important to the Council. They will be made part of the record. If it turns out that you agree with somebody -- I think I said that already -- please state your agreement with the person or consolidate your time.

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I'll call three speakers at a time. We have two chairs behind the podium. Do we have two chairs behind the podium? I don't think we do, but anyway we'll work that out. I'll call three people in any case and two can be in the ready room. Everybody will have a chance to speak, and when you come forward to give your comment please state your full name, spell your last name, give your mailing address, and if you've brought written materials again Tammy is in the back and she is at the sign-up table.

So now we will hear oral comments, and we will begin with Mr. Rex Johnston, Klickitat County Commissioner, on the firing line Peggy Bryan, and Frank Backus.

Mr. Commissioner.

COMMENTS BY REX JOHNSTON

Council Members, Ladies and Gentlemen, my name is Rex Johnston J-o-h-n-s-t-o-n. I'm a Klickitat County Commissioner from Western District 1. I'm here this evening --

CHAIR LUCE: Could we have a live mic?

MR. JOHNSTON: Is that better?

(Audience says yes.)

MR. JOHNSTON: Shall I Start over?

CHAIR LUCE: Yes.

MR. JOHNSTON: Council Members, Ladies and Gentlemen, my name is Rex Johnston. I'm a Klickitat County

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Commissioner, District 1. I'm here this evening in support of SDS's Whistling Ridge Energy Project. This is a time of energy crisis not only with the United States but around the world where the demand for energy is on the rise. There are also many problems associated with production of energy. The current oil spill in the Gulf and the timer by environmental groups to remove hydroelectric dams are just a couple examples.

Wind energy appears to be a vital form of alternative energy, especially here in the Columbia Gorge where we have both wind to produce energy and the infrastructure to conduct it already in place. The EIS for the Whistling Ridge Energy Project has properly analyzed the environmental impacts; therefore, the project should be approved. The scenic area boundary is the boundary. No authority to condition projects outside the boundary based on visual effects exists. This is a critically important principle for economic development opportunities in the Gorge counties. If this principle is not upheld it sets a precedence for conditioning all projects in urban exempt areas and beyond.

In Klickitat County the wind energy industry has been a fantastic partner for the county. It has provided income for struggling farmers and ranchers while also providing much needed income for the county itself. In this

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time of economic downturn we hope that the wind energy industry will help Skamania County as well. Now more than ever is the time for advancing clean energy. I hope we can all get behind this project and help this through. Thank you very much.

CHAIR LUCE: Thank you very much.

Ms. Bryan.

COMMENTS BY PEGGY BRYAN

My name is Peggy Bryan. I live at [redacted] Carson, Washington.

On behalf of the board of directors of the Skamania County Economic Development Council I would like to restate the strongest possible support for approval of the proposed Whistling Ridge Energy Project. We have reviewed the Draft EIS and believe that it is objective, comprehensive, accurate, and authoritative. The Draft EIS has not provided any reasons to justify opposition to the project.

The Draft EIS found no significant impact on wildlife or bird population, no significant impact on scenic views, no evidence of any negative impact on tourism. The draft concluded that Whistling Ridge is properly sized and can only proceed successfully at its currently proposed size of 75 megawatts.

The report confirms the many reasons the EDC

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supports the project. Apart from the clear benefit of clean renewable energy that substantiates the economic benefits that drive our organization to strong support, the draft EIS found that there will be considerable economic benefits to the tri-county area of Skamania, Klickitat, and Hood River counties. The construction workforce hired to build the wind farm would add 143 workers with a peak of approximately 265 workers. There will be an estimated 1.3 million in local non-labor purchases during construction. Annual property tax revenues for the county would increase by $730,000. The White Salmon School District will receive an estimated $150,000 annually. Eight to nine new permanent full-time jobs will be created.

Of the 1,070,000 acres of Skamania County less three percent could be developed providing tax base and provide economic sustainability to provide the necessary services to the residents, business, and visitors of our county. Due to excessive federal and other public ownership of its land base Skamania County must take advantage of every opportunity it has to grow its tax base.

Again, the board of directors of the Skamania County Economic Development Council supports the Whistling Ridge Wind Energy Project not just because it is a sound economic development opportunity, but also because it provides a clean, safe, green renewable energy resource that

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will provide a better future to generations to come. Thank you.

CHAIR LUCE: Thank you.

The next speaker will be Frank Backus. I hope I'm pronouncing that right. And on the ready room Rich Potter and Joy Gohl.

COMMENTS BY FRANK BACKUS

Thank you. My name is Frank Backus. [redacted] and I want to thank the members of the Council and Bonneville Power Administration for having this hearing tonight.

I'm in favor of this project. Your environmental impact statement has analyzed this project, and it's found no adverse impacts that would stop this project, not fauna, flora, or scenic value. It's been said that this is a pristine area. Most of the area that is involved in this project is now planted in third growth forest. It's not pristine. It's a working managed forest. I'm going to agree with Mr. Johnston on the boundaries, and you heard my comments on that last year, the Columbia River Gorge boundaries, excuse me.

The Washington voters have spoken in this state, and they have mandated every utility in this state to furnish renewable resource, renewable power to their customers. Here's a project that's going to do exactly

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that. This project is compatible with the forest that it's being proposed in, and it's compatible with the agricultural lands that are nearest to this project. There is no residential zoned lands near this project.

This project will have a major role in securing the economy of Skamania County and the SDS family of companies so thank you very much.

CHAIR LUCE: Thank you, sir. Next we'll hear from Rich Potter, following that Joy Gohl and Brad Anderson.

Sir.

COMMENTS BY RICH POTTER

My name is Rich Potter, P-o-t-t-e-r, [redacted] Underwood, Washington. Thank you for this opportunity, appreciate your time.

I'm here to state that I believe that the draft environmental impact statement is comprehensive and complete and that no further analysis is needed.

And I just want to state that I support this project because, one, it's green, and everybody here in the room would agree that we need less dependence on petroleum and more green energy; two, because it is in my back yard and because it's going to bring significant economic development and incremental tax income to the county and to the school districts. Thank you.

CHAIR LUCE: Thank you, sir. Joy Gohl followed by

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Brad and Keith brown.

COMMENTS BY JOY GOHL

My name is Joy Gohl, and I live at [redacted] Road, White Salmon, and we have a dot.com business. We do millions of dollars in business relating to the Columbia River Gorge. Now the lady said that the tourism, there is no problem with tourism, but with every client that we book on these expensive seven night Columbia River Gorge cruises we ask, "What do you want to experience?" And they all say natural beauty. You know, where can we find a unique place like this? This is an incredible place. They like to experience wildlife, eagles, whatever, the sea lions, and just see the beautiful scenery and enjoy the history, the Lewis and Clark history. That's what every one of them says. It's not a party cruise. There's no casino. There's no dancing girls. They come to see the Gorge.

And so this is a real plight on the view coming up here, and once it gets started, you know, where does it end? And so tourism brings millions and millions of dollars here. You don't see it. You don't even think about it unless you're in a business like mine. But they spend money. They stay afterwards, they rent a car, they drive up to Hood River. If they could, the ships would stop at Hood River again except that the sandbar is out too far and they can't get in. So anyway that's a very real thing.

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We tend to think that the Gorge belongs to us because we live here. The Gorge was named one of top two tourist places in the United States -- I'm sure all know this -- by National Geographic recently. It's the Columbia River Gorge and Vermont. Those are the top two places, and my clients tell their friends that it's the most fabulous thing. I've heard it over again. They'll do it, they'll repeat it sometimes two or three times. So we have a real treasure here.

And, you know, what I don't like about the wind turbines, and I appreciate them being green, but it does kill birds, and I don't know how that can be overlooked, especially the red tail hawks and the eagles, and, you know, birds of prey. They're looking at prey on the ground. There's a lot of birds here to be killed by wind turbines.

The real clean energy is solar. I don't know why the solar the latest technology developed in California is being sent to Europe. We don't get it here at all. So I think we need to think bigger, think cleaner, preserve what we have. Thank you.

CHAIR LUCE: Thank you.

Brad.

COMMENTS BY BRAD ANDERSON

Good evening, Council. Brad Anderson. I am at [redacted] I'm here on

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behalf of Skamania County Economic Development Council. I'm the Chair of the Economic Development Council. I also used to be a prosecutor for Skamania County and a private attorney with the law firm, regional law firm of Schwabe, Williamson, & Wyatt.

I'm here to testify in support of the project but also in support of the Draft Environmental Impact Statement. I haven't read the whole thing, but the conclusion is consistent with what we think is appropriate in this case. And obviously a lot of money, time, and resources have gone into that, and we'd ask you to adopt that, to find that there's not going to be a significant resource.

I'm here on a limited purpose. I'm going to try to limit my comments on two things. First of all, is the economic development side. We are a commission made up of volunteers from the private as well as the public sector. Every year we come with a list of those things that we think are the top priority. The last several years this project as well as other alternative energy projects have been at the top of our list so obviously we are supportive of that.

We're not stupid. We don't do things that are going to undermine the economics of this community. Folks, our county is hurting. For years when I was the prosecutor I'd lobby for the federal funds. We're losing those federal funds. They're dwindling. So we need alternative sources

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of revenue in order to support our schools, support our law enforcement, support of courts, everything else. We need this project. We need this and many other projects to substitute for those funds. I mean it's $971,000 of revenue. We need that. We need that very bad. With regard to the jobs, okay, seven or eight jobs, permanent jobs maybe that doesn't sound like a lot to a larger community, but every job in a small community like Skamania County means a lot. So every job counts.

With regard to the -- I also want to comment about the impacts on the tourists. We wouldn't be stupid enough to support something that's going to take away from another factor. That's important and that is the tourist industry here in the Columbia River Gorge. We know the treasure that we have. But when we investigated this, and believe me we have spent a lot of time looking at other communities that have these type of projects, and our investigation and our conclusion show that these things are not a distraction to people coming to your area like the Bonneville Dam.

I live in North Bonneville, drive by the Bonneville Dam everyday, and I can tell you there's a ton of visitors that think that's a pretty remarkable facility. The same will be true for rain resources or wind energy projects like windmills. So it's not going to distract. It's going to be another attraction that will bring people

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to the Columbia River Gorge. We ask that you support this project, that you find that there will not be any adverse impacts to environment and approve this when you finally get to that moment. Thank you.

CHAIR LUCE: Thank you, Brad. Keith Brown, followed by Teresa Robbins and David Querry.

MR. BROWN: There are four of us that are going to consolidate our time, and I'll take the first half and Teresa Robbins will take the second half.

CHAIR LUCE: Keith and Teresa. And who are the others?

Donnarae Querry and Dave Querry.

CHAIR LUCE: All right.

COMMENTS BY KEITH BROWN

Okay. I've got a couple of charts that we're going to put up. Before I begin I'm not an expert on wind turbines, but I have taught program evaluation, advanced statistics, and measurement techniques at universities. I was the assistant director at one of the top research and development centers. During the last two years I've spent hundreds of hours researching the probable impact of wind turbine noise. Keith Brown, Ph.D., [redacted] Washougal, Washington.

The noise portion of this Draft EIS should accurately predict and fully describe potential adverse

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impacts of the probable and worst-case noise scenarios. This Draft EIS in our opinion fails to do this. Instead it hides behind the outdated noise regulations never intended for wind turbines. It distorts the comparison of the EPA to Washington Noise Guidelines. It ignores guidelines specifically designed to reduce adverse wind turbine noise impacts. It collects inadequate data on current noise levels at homes closest to the proposed industrial site. It uses a computer model too simple to accurately predict noise levels in complex mountainous terrain and varied weather conditions.

CHAIR LUCE: Excuse me. Is there something on the chart you want us to see?

MR. BROWN: Yes, I'll flip it over in a minute.

CHAIR LUCE: Just wanted to make sure.

MR. BROWN: The Washington Noise Regulations were written in 1975. That's 35 years ago before industrial wind turbines were considered. This draft ignores the substantial work that has been done since 1996 in developing regulations and guidelines specific to appropriate and ecological siting of wind turbines. The EPA Region 10 Guidelines state that an increase of 10 or more decibels over existing background noise will result in significant negative community reaction and would be considered serious warranting close attention. A 10 decibel increase is

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subjectively heard as an approximate doubling in loudness.

Oregon wind turbine complexes just across the river are limited to raise total noise levels to a maximum of 36 decibels, no more than 10 decibels over existing ambient noise background which is typically 26. EPA guidelines limit nighttime levels to 45, and your Draft EIS proposes to allow 50. That's 24 decibels over your measured readings of 26. Really? How can BPA in good conscience apply a more destructive to Washington? Similar guidelines to the Oregon standards exist in countries around the world, including Australia, Denmark, France, Germany, Holland, even the World Health Organization.

We provided you in May 2009 the extremely useful recent research and relevant Kamperman James, "How to site Wind Turbines to Prevent Health Risks from Sound" which appears to have been ignored in the preparation of this Draft EIS. It's astonishing that this draft makes no mention of the guidelines designed to specifically reduce the impact of industrial wind turbines. All these guidelines that I've talked about limit maximum noise levels to between 35 and 40 decibels. Decades of extensive experience has determined the type and level of noise produced by wind turbines impacts people differently than other industrial sources.

On this chart shows more than 35 percent of people

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in rural areas experience wind turbine noise of about 40 decibels as highly annoying. So you've got highly annoyed about 40 decibels. Thirty-five percent receive that as highly annoying whereas 0 percent of people report high annoyance to aircraft, road traffic, or railways. It would take 70 decibels of aircraft noise and far in excess of 75 for road traffic and railway noise to create the same level of annoyance that wind turbines create at 40 decibels. Wind turbines are clearly in a different class of sound impact and require a different standard.

We see no additional measurements to the limited measurements taken during icy conditions originally provided by the SDS consultant. These were not even taken at the closest property lines or homes. It's critical to take measurements at the right time in the summer and the right place at the affected homes. Realistic projections in mountainous and irregular terrain require a complex, three-dimensional program rather than the simple two-dimensional program used in the Draft EIS.

Your projection analyzes wind speed measured at 10 meters height which extensive research shows will underestimate the wind speeds at the hub by a factor of as much as 2.6, and underestimates the wind turbine noise by as much as 15 decibels. During inversions mostly at night this is when there is even greater sleep disturbance.

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We've thoroughly examined this Draft EIS on noise impact and find it to be totally inadequate. In our opinion it needs to be redone. Thank you for your consideration.

CHAIR LUCE: Thank you very much.

We've heard from Mr. Brown. Teresa, David, and Donnarae we consolidated all of those so Teresa is the second half.

MS. ROBBINS: I'm the second half.

CHAIR LUCE: Oh, so you're the second half. So six minutes.

COMMENTS BY TERESA ROBBINS

Thank you. Teresa Robbins, [redacted] Skamania County. So what does all this mean to the people of this community? We offer this recent study conducted by medical doctor Michael A. Nissembaum, "Industrial wind turbines installed in close proximity to human habitation results in sleep disturbance and stress. Wind turbines will over the long term result in serious health effects, cardiovascular disease, chronic feelings of depression, anger, helplessness, and reduced quality of life."

He compared a group of exposed individuals, meaning living within 3,500 feet of a ridge line arrangement of 28, 1.5 megawatt wind turbines. By the way, Whistling Ridge would have more and larger turbines. When you compare that group to the nonexposed individuals, meaning living

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approximately three miles away from the industrial complex, this is what he found. New or worsened chronic sleep deprivation 82 percent is exposed versus 4 percent in the nonexposed group. New chronic headaches 41 percent as opposed to 4 percent in the nonexposed group. Stress, 59 percent to 0 percent in the nonexposed. Persistent anger, 77 percent in the exposed group versus 0 percent in the nonexposed. New or worsened depression 33 plus percent, 0 percent in the nonexposed group. Perceived reduced quality of life, 95 percent versus 0 percent. There were new prescriptions offered, 26 new prescriptions offered in the exposed as to 4 in the nonexposed group. These were people that were of similar age and similar occupation. This was a controlled study.

He states there's absolutely no doubt that people living within 3,500 feet of a ridge line arrangement of turbines in a rural environment will suffer negative effects.

The World health Organization says noise levels above 40 decibels have definite health consequences. Results like this are due to the failure of currently practiced preconstruction sound modeling. A recent review of all the relevant published studies done by two unbiased Ph.D. toxicologists at the request of the Minnesota's equivalent to Washington State EFSEC, one quote from the

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26-page study concluded the most common complaint is annoyance or impact of quality of life. Sleeplessness and headaches are the most common health complaints and are highly correlated but not perfectly correlated with the noise. Complaints are more likely when turbines are visible or when shadow flicker occurs. Most available evidence suggests that reported health affect are related to audible low frequency noise. Complaints appear to rise with increasing outside noise levels above 35 decibels.

One of the experts that you cited in the Draft EIS G.P. van den Berg conducted the most comprehensive study of what is causing the increased noise levels experienced by people over and above modeled predictions. "Annoyance with relative height at calculated maximum sound emission levels below 40 decibels where one would not expect strong noise. As wind turbines become taller the discrepancy between real and expected levels grow. Only recently turbines have become so tall that the discrepancy now is intolerable. In quiet night the wind farms will be heard at a distance up to several kilometers, a low pitched thumping sound with a repetition rate of once a second not unlike distant pile driving. A resident living a distance of 2.3 kilometers from the wind farm describes the sound as an endless train."

And finally this is your cited expert we're quoting here. "Proponents must accept that wind turbine

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noise is not always benign and that the noise may affect people, and that the people who are complaining are not always just a nuisance. Please read the entire 200-dissertation of Mr. Van den Berg. We have.

We continue to be upset and very concerned.

CHAIR LUCE: Thank you so much, appreciate your comments all four of you and keep those charts, and better yet if you have copies of them would you please give them to Tammy and also give her copies of your written comments.

MR. BROWN: We have much more extensive written comments than we have time for.

CHAIR LUCE: All right. Thank you very much.

Next up is Mike Eastwick followed by Wirt Maxey, followed by Loreley Brach.

COMMENTS BY MIKE EASTWICK

Hi, Mike Eastwick, [redacted] Underwood. It's E-a-s-t-w-i-c-k. I'm sorry. I didn't get the speaking points from SDS so I have my own to do here.

Let's see. Under affected environments, surface water there is no mention of the unmanned stream west and down slope of the A-1 through A-7 turbine group. This stream initiates as a spring and flows year around and eventually opens into the Columbia. In addition, it flows through World Stewardship Nature Preserve Land which will soon be purchased by Columbia Land Trust. Please add this

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consideration to your study.

On the ground water the same unmanned stream mentioned above has been overlooked since it doesn't originate as ground water and springs. Please add that to your study.

There's very little discussion on the flashing red lights. My understanding is these are fairly bright and regular flashes. So in addition to the thumping noise that they talked about you also have this very repetitious flashing going on. I think that I've read that this may trigger some health issues so I'd like to see more consideration for that in a study as well.

There is no reference to Dr. Pierpont's studies or the other studies that these folks just mentioned on the noise. It's not sufficient to say it's not a problem when scientific studies indicate that there's a need for larger setbacks to avoid these kinds of issues. All the noise documentation is generally positive, educational, and based on county defined ordinances, all of which do not comprehend continuous operation of noise producing machinery. It's also interesting to me that the sheer amount of documentation in the Draft EIS on noise causes me to believe that this can be a problem and really needs more than just an academic dissertation on the topic of sound. The most recent science should be considered in this study.

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The study did not use the noise level defined by the manufacturer of the proposed towers and the generating station which are larger and noisier than those discussed. It is unacceptable and reckless to conclude the noise would be within limits if you don't think about the actual towers that are going to be used or the worst-case towers that are going to be used and the generating facility and all the cumulative effects of those things at once. Please add that to your study.

Regarding land use in the National Scenic Area, we all understand that the regulations, boundaries do not preclude development of this type of project; however, can you honestly say that the visionaries for the National Scenic Area knew that there would be a structure that could be 400 some feet tall, noisy, intrusive could be even created and erected? Can you honestly and with good conscious ignore the basic intent of the National Scenic Area to preserve our nation's natural scenic resources?

Most recent studies on bat and raptor deaths caused by wind turbines indicate a significantly higher number than expected. Klickitat County has begun a new study because many new deaths were occurring than were promised by the boilerplate information provided in their EIS. There does not seem to be mention or analysis of the land being designated as deer and elk winter range. I

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didn't have enough time to get a map from the Fish and Wildlife folks, but I know that the property directly south is designated deer and elk winter range, and I saw no discussion of the impact of this project on that range. I personally would like to understand what's going to happen with the deer and elk.

CHAIR LUCE: Could you summarize now and then provide the staff your written comments, please.

MR. EASTWICK: Yes. Property values -- just one more point, please. Property values were old studies and were not comparable to the situation here. They all were talking about much more rural situations in land and property values that are much lower than exist here. Okay? So please look at those studies and try to do some comparisons so we can understand the impact to our type of neighborhood.

CHAIR LUCE: Thank you.

MR. EASTWICK: Thank you.

CHAIR LUCE: Mr. Maxey.

COMMENTS BY WIRT MAXEY

Good evening. My name is Wirt Maxey. I live at [redacted]. I'm a semi-retired attorney. I practiced law in the state and the federal courts of south Florida for more than 30 years.

(Audience member said we can't hear back here.)

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MR. MAXEY: Anyway I'm a semi-retired attorney and I practiced law in the state and federal courts in South Florida.

(Audience member said I didn't hear your name.)

MR. MAXEY: Wirt Maxey. Can you reset the time, please.

CHAIR LUCE: Name and address, you got that, Shaun? Okay. Start all over.

MR. MAXEY: Reset the time, please.

MR. POSNER: Got it.

MR. MAXEY: My name is Wirt Maxey. I live at [redacted] I'm a semi-retired attorney. I've practiced law for over 30 years in the state and federal courts of south Florida. My emphasis was on commercial relations and real estate law.

I set out initially to study and analyze the DEIS document in detail because I wished to provide this council with thoughtful and reasonable and informed comments. Here it is. It took five to six hours to download it on my laser printer. I burned through three or four toner cartridges which cost about 50 bucks a piece. Including the appendices it weighs over 20 pounds, and I didn't count them, but there is well over a thousand pages. I'm going to say probably closer to 2,000 pages if you count all the appendices which, of course, are very important because that's where the data

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is.

This was first made available to the public May 25. That's about three weeks ago. Assuming that an interested party downloaded this document on the day it was available that would give three weeks to read every word in here, study, review it, and analyze highly technical material. Of course, it's doubtful that anyone retrieved it the very first day it was available, and most folks have working family responsibilities which would leave nights and weekends to work their way through this in three weeks. I realize there's another month for written comments.

Esteemed Members of the Council, the 14th amendment to the constitution of the United States of America contains something we call the due process clause. The constitution of the state of Washington contains similar provisions. The due process clause requires that interested parties be given reasonable notice and a reasonable opportunity to be heard.

I respectfully submit to this Council that it is completely unreasonable to expect the layman or even a trained professional to read a document of this magnitude, to study and understand it, and to be able to make informed comments in three weeks or even three months. I don't expect an answer to this question, but most respectfully have any of the Members of this Council read every word of

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this? I doubt it.

Under the SEPA rules a party forfeits his rights to raise issues if he doesn't raise them in this comment period; yet we are not given anywhere close to adequate time to read, to study, to digest this document and probably hire our own consultants because it is so darn technical. We're not given adequate time to do any of that so that we can raise the issue.

The applicant has been working on the document for many years so the appendices go back to 2002, 2003. That's how long the applicant has been working on this, and the working man John G. Public is expected to read and digest this document in a couple of months. I respectfully submit that that is fundamentally, fundamentally unfair.

In summary, I would like to formally object to these proceedings on the grounds that I, myself, and other similarly situated parties are being denied reasonable notice and a reasonable opportunity to be heard and therefore are being denied our constitutional right to due process of law. I ask this Council for an order extending the time for written comments for a minimum of 90 to 120 days from the current deadline in order to afford the public due process of law. Thank you very much.

CHAIR LUCE: Thank you, sir. Appreciate that. Next speaker will be Loreley Brach, followed by Dale Glasgou

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and Todd Myers.

COMMENTS BY LORELEY BRACH

My name is Loreley Brach. My address is [redacted] Underwood, Washington. We just moved.

I want to ditto what he just said. I tried to download it and I gave up. My husband finally did it for me ending in Chapter 3. I kind of breezed through it, and I'm not even sure it's worth much of my time to review it. It's so deficient.

I also want to briefly comment that well accident that's a perfect example of what happens when we pursue energy and disregard the environment. I think that's happening here. A year ago we all presented comments. I know I did. I didn't see anything about any comment I presented in that DEIS, and one of the requirements of these environmental impact statements is that alternatives are presented.

And while I didn't see much in alternatives, SDS, Whistling Ridge owns about 80,000 acres in the state of Washington, and they chose these few acres. There's no potential to anywhere else they could have put them that wasn't going to impact the National Scenic Area, that wasn't going to be in people's back yards, that wasn't going to impact people from living off the tourism here?

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There's also another deficiency in that this applicant insists upon a 70-megawatt connection. What is with the 70-megawatt connection? Why is it so important? Again what's the alternatives? Is there nothing? If there's not, we need to know why. We need to understand this.

Okay. And the other thing that's missing is alternative roads. This Whistling Ridge gave one road in its revised application and then gave an alternative called Oslund Road. Well, if you want to come visit Oslund Road, I'll show it to you. It doesn't exist. This road does not go through because it simply does not exist. Now they're required to give viable alternatives. There is no alternative. Little Buck Creek Road why is that not in there? I think we deserve a rationale for that as well.

Another thing there's no supporting research commentary to any of these blanket things that they are saying in there. Bats and birds are killed by collision with these turbines. 80 percent of the birds and the bats are being killed by something called barotrauma. Where is that? It's been out for a full year. Why wasn't that included in this?

It's deficient. We should do this over. We should give the public an opportunity to comment on a balanced, supported document, and I did notice one other

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thing in there, some of the cultural information. I guess there's still some consultation with the tribes. It's not complete. This DEIS is very incomplete. Let's start over. Let's do it again. Let's do this right. Let's do it according to the law so we don't have another fiasco like we see in the Gulf of Mexico. Thank you.

CHAIR LUCE: Thank you very much.

Dale.

MR. GLASGOU: Should I disqualify myself because I talked to the honorable representative from the Department of Natural Resources before the meeting?

CHAIR LUCE: I don't think you have to disqualify yourself, but I'll ask the Department of Natural Resources not to answer any of your questions. Come up and give us your opinions.

COMMENTS BY DALE GLASGOU

Well, I've changed my speech and I'll be weighing it. My name is Dale Glasgou and I live at [redacted] And what I'm going to say is slightly different from what you've heard.

Two years I got a call from the Department of Natural Resources in California saying you should attend the meeting of the 76 Western Snow Conference being held at the Hood River Inn, and it was an eye opener. The first was the magnitude. There were about 14 federal agencies involved

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and most of the universities west of the Mississippi River. And the title of the entire talk was population growth and the impact of global warming on the waters off the Northwest and California and the Rockies, the Canadian Rockies. I was approached by the chief water hydrologist of the state of California, and the hydrologist for the Hetch Hetchy Reservoir Project which delivers all the water to San Francisco and to Silicon Valley, and they said we know that the global climate models all seem to agree that the southwest is entering a prolonged drought period, and we need the water from the Northwest. He says 120 million acre feet go over the Bonneville Dam each year. We need 20 million acre feet. That's enough for about 20 million families. And he says, "Where are we going to get it?" Well, we know that there are two 2 million volt DC lines from The Dalles, Oregon to the California border, and we can run a pipeline up over the Oregon Plateau down through Lake Albedor and Lake Shasta and we need that power. And we know that there's a lot of wind power in Eastern Oregon and Eastern Washington and we call for that. We need that power.

So they also said there were more people in the state of California, 36 million, than all the states of Oregon, Washington, Idaho, Montana, Wyoming, Utah, Nevada, Arizona, North and South Dakota, and so forth. So there's a

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lot of representatives in Congress, and we will exercise that muster because we have to protect the children of southern California because Lake Mead, Lake Powell will be nearly dry in 10 to 20 years. We have to protect those children, and so they want this power and they know exactly where its at and wind power is one of those. Thank you kindly.

CHAIR LUCE: Thank you. Mr. Myers from Wind Works Northwest followed by Jessica Lally, Yakama Nation, and Peter Cornelison.

COMMENTS BY TODD MYERS

Mr. Chairman, Members of the Council, my name is Todd Myers, and I serve as Executive Director of Wind Works! Northwest which is a wind power advocacy group of about 300 supporters state wide. Our address is [redacted] Ellensburg, Washington.

I have two comments on the DEIS. First is the project alternatives and the second I'll touch on a little bit of the visual impacts.

The Draft EIS is I think correct in its assessment that the Whistling Ridge Energy Project is an integrated whole. In other words, a single power plant, not pieces of a whole where some turbines might be limited. The project at 75 megawatts currently is the smallest project actually proposed or operating in Washington State and should be

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treated as an integrated whole.

The economic viability of the project hinges on SDS being able to complete the project as designed. So therefore when people want to sort of pick and choose or remove seven turbines it sort of reminds me of if auto manufacturers said that they're going to sell you 90 percent of the car, you know, except for the transmission. You have to treat it as a whole project. You can't take a little bit back. If you take a little bit back, you're essentially saying that the project goes away.

In interest of fair evaluation the proposed project before you must be considered as an integrated whole and given the economies of scale utility demand for renewable power. This project if it's to proceed at all can't be downsized.

The second thing I want to direct real quickly is the issue of visual impacts. One area where the document I think does fall short of is assessing the value of the visual amenities the Whistling Ridge currently provides to the Gorge area. The project opponents assert that SDS by building a Wind farm on its property would impact the value of that property, but the concern can only be taken, understood, and fully analyzed if both sides of the coin are examined. It would be helpful in this discussion if the Draft EIS estimated the financial value of the visual

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amenity that SDS currently provides.

So the question is if they're arguing that they're going to lose value in visual amenities from their property, they also admit that they're currently receiving that same amount of value to their property or business, and the question is would they be willing to pay that value right now to keep things as they are? When does a neighbor's property rights extend to everything that he or she can see from their boundaries? It sort of sets up a Yertle the Turtle standard where you're in control of all that you can see.

Mr. Chairman, Members of the Council, I commend you and BPA for commissioning an excellent environmental document. I think it provides a rock solid foundation on which to perform your ultimate action on the Whistling Ridge Energy Project.

CHAIR LUCE: Thank you.

COMMENTS BY JESSICA LALLY

My name is Jessica Lally. I'm an archeologist with the Yakama Nation Cultural Resources Program, P.O. [redacted] I'm here today on direction by the Roads Irrigation and Lands Committee of the Yakama Nation. Several people tonight have commented on the deficiencies on the Draft EIS, and I am no different.

In December of 2009, the cultural resources

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program did a survey of the project area and generated a report. We found in that report a particular area that is sensitive to the tribe. This has not been included in the draft for consideration and for public review. I'm asking EFSEC and BPA to include this in the Final Draft Environmental Impact Statement and consultation which will be required to resolve the matter. Thank you.

CHAIR LUCE: Thank you.

Next Peter Cornelison followed by Don Morby and Wally Stevenson.

COMMENTS BY PETER CORNELISON

My name is Peter Cornelison. I live at 1[redacted] I'm like to make two points tonight.

First of all, and this point has already been made, but I don't think enough emphasis can be -- it needs more emphasis. Basically we have not had adequate time, fair amount of time to read this massive document that the applicants have spent months and years preparing. In addition, it's my understanding this is our only chance to address you orally in terms of making comments. It's not fair. You need to give us another chance to talk to you about this after we've had time to read and reflect on what's been proposed.

Secondly, a couple years on the Oregon side of the

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Gorge a similar project called Cascade Wind was proposed on a place called 7 Mile hill, very visible bluff outside The Dalles. The project would have been highly visible on Highway 14, and I don't know if you're aware of the concept of key viewing areas. That's something we have here in the National Scenic Area. It's certain protected spots. The view shed is important and suppose to be kept pristine. If that project had gone in, it would have decimated the scenic views of that stretch of highway in terms of rotating ten wheels reflective light.

Under Oregon's Wind Energy Siting Guidelines, Oregon EFSEC, your counterparts in Oregon, are prohibited from approving projects which will adversely affect the National Scenic Area, even though a project might be located just outside the boundary just as this one is. The application was ultimately withdrawn at least in part due to the impacts on Washington. Protecting the internationally acclaimed views as you heard in the National Scenic Area is a shared responsibility of both states. As a resident of Oregon I sincerely hope that the State of Washington will reciprocate Oregon's effort to protect the integrity of our national treasure. Thank you.

CHAIR LUCE: Thank you.

Mr. Morby.

MR. MORBY: I just want to say I decline to speak

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at this time to save time and in addition thank you for your support, and I am in support of this project.

CHAIR LUCE: Okay. Thank you. Mr. Morby declined. Mr. Stevenson.

COMMENTS BY WALLY STEVENSON

I am Wally Stevenson. I live at [redacted] White Salmon, Washington, and I'm glad to see all you people here and the large crowd that is meeting with us. I just wanted everybody to see that I'm the one that started this whole problem over the years. Luckily we have Jason Spadaro here to do all the work, but we have been buying land here. The first thing we bought was ten acres of land in 1946, and since that time I've had the bug to buy land. We do have approximately 70,000 acres, and it's well handled. We operate on a sustained yield. We do good forestry. We take care of our lands. We are honest, law abiding citizens, and we think that is a good project and it's been well checked over, and we would like to see it go through. Thank you.

CHAIR LUCE: Thank you, Mr. Stevenson.

Bob Wittenberg followed by John Hardham, followed by Gary Clouse.

COMMENTS BY BOB WITTENBERG

Good evening, welcome to Underwood. This is my community. My name is Bob Wittenberg, W-i-t-t-e-n-b-e-r-g. I live at [redacted] just a little ways up the hill.

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My particular area of focus is going to be a summary of what folks said where I spend the majority of my time.

But the fourth one down is biological resources. I use the phrase project will result in permanent loss of approximately 56 acres of habitat. I would argue that it's a change in habitat. We operate substations for the PUD. Oh, I didn't mention I'm the manager of the PUD, and the PUD commission is in strong support of this and for the most part has authorized my statements. We have substations. Animals live in those substations so I would argue it's not a loss of habitat. It's a change in habitat. Some species will not live in the substation. We try to discourage elk and deer and what have you, but we certainly have mice, birds, bugs, and small squirrels, all sorts of things causing problems.

Under the noise issue. This is called the Columbia River Gorge and it's the windsurfing capital of the world for a reason. The wind howls. Two weeks ago we couldn't sleep one night because of the wind howling, not through wind turbines but through trees, through fences, through the eaves of the roof. It's noisy when the wind blows. When the wind doesn't blow, I can hear the tugboats pushing the barges up the river and I can hear the trains. I can hear all the stuff of human activity. All human

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activity has impacts. Somewhere tonight there's a machine converting one form of energy to electric energy to run this microphone and to run those lights. This meeting has an impact. So the question really becomes how big are these impacts?

I also want to comment on the visual resources. I can see things a long way from my house. I can see on good favorable weather conditions when matched with that blue sky I can see the red lights of the wind turbines clear out in Wasco County, a long ways away. Should that affect somehow the right to build that place because I can see it? Heavens no. The other thing I'd say about visual impact, and they use that phrase a lot in here, is it a good impact or a bad impact that? I think they're pretty. I like them.

Lastly, at the bottom down there socioeconomics. This proposed project certainly has some beneficial impacts and it has some negative impacts. I would argue that the positive impacts of this project greatly outweigh the negatives, and that this thing is a good EIS, a Draft EIS, and we ought to go for it. Thank you.

CHAIR LUCE: Thank you.

John Hardham.

COMMENTS BY JOHN HARDHAM

My name is John Hardham. I am a small business owner here in Underwood, Washington. Spell my last name

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H-a-r-d-h-a-m. I live at [redacted] I've actually lived in Skamania County since 1986. I also represent the Skamania County Economic Development Commission for our district. As a resident of Underwood I would like to state my support for the Whistling Ridge Energy Project. I believe this project will help reach the goal mandated by our voters in our state to make renewable energy the greater part of our state's energy consumption.

It will help Skamania County to provide the services that we the residents demand and expect. It will also provide some much needed high paying stable employment for residents of the Columbia River Gorge. I believe that we must as citizens of this planet accept our responsibility to find ways to utilize clean renewable resources to meet our energy demands. As a nation we may have to make some sacrifices that will enable us to exploit the renewable energy resources that are available to us. We can no longer expect the rest of the planet to provide us with cheap energy. We can no longer accept the damages to our planet caused by the continued use of fossil fuels. We must move forward to develop new technologies that reduce our impacts on the environment. So in my view the potential benefits for this project outweigh any detrimental impacts on our region. Thank you.

CHAIR LUCE: Thank you sir.

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Gary Clouse followed by Roger Holen.

COMMENTS BY GARY CLOUSE

Thank you all for being here, and thank you who have prepared and written, reviewed, edited this EIS for us. I'm here to speak on behalf of the project and in favor of it.

My name is Gary Clouse. I live in White Salmon just across the river, from across the White Salmon River from here and about the same elevation as this. I look at the Whistling Ridge out my kitchen window. To save time this evening I would like to endorse the prior two testimonies as being thoughtful and accurate, and I would like to endorse Rex Johnston's opening comments this evening.

One more point that I would like to emphasize is that the growth of power demands and electricity demands throughout the Northwest is insatiable. You cannot stop it. You cannot limit it. It won't slow down because the population growth will push it out, and we have no way of producing additional hydroelectric power in any significant quantities in the Northwest. We're going to have to move to alternative powers, alternative power sources, and I endorse this greatly. If you look at the growth rate of the demand at being about two percent per year which it currently is in five years one out of every five electric consumers will

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have to stop using power either one-fifth of the time or all the time. In 13 years it will be one out of four, in 20 years it will be one out of three. So I endorse this project. I think it's an appropriate use of the resource and thank you very much for your time.

CHAIR LUCE: Thank you, sir.

COMMENTS BY ROGER HOLEN

My name is Roger Holen spelled H-o-l-e-n. I live at [redacted]

My wife and I have owned the Inn of the White Salmon for 17 1/2 years, and it as our judgment that the proposed project will have absolutely no adverse effect on tourism.

In fact, in our travels we enjoy watching them. They're majestic, they're fascinating, and my wife refers to them as wind angels. Thank you.

CHAIR LUCE: Thank you. I'll start on the next list.

Tammy, how many people do we have signed up back there?

MS. TALBURT: One more.

CHAIR LUCE: One more sheet or one more person?

MS. TALBURT: One more person.

CHAIR LUCE: Can you bring that forward now at this time. That would be helpful.

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The next person is Rebecca Stonestreet followed by Scot Bergeron and Bob Hanson.

MS. STONESTREET: Scot Bergeron is going to give me his minutes so I have six minutes to talk.

CHAIR LUCE: Awesome.

COMMENTS BY REBECCA STONESTEET

My name is Rebecca Stonestreet, S-t-o-n-e-s-t-r-e-e-t. I live at [redacted] Mill A, Washington. Thank you all for being here.

I am against the proposal of the Whistling Ridge Project, and I feel that the DEIS does not adequately address all the ramifications and impacts this wind farm will have here in our community. I have two concerns. This draft statement gives an inadequate analysis of the visual impacts this wind farm will have on this incredibly beautiful area. Keeping this place aesthetically beautiful is important to me and to others like Skamania County which states in their website on their welcome page -- this is from Skamania County -- "Our county consists of 1,672 square miles of the most scenic and diverse landscape in the world." That's what Skamania County says.

The home page of the Skamania County Economic Development Council states, "Skamania County offers the best of both worlds. It is located in one of the most scenic areas in the Country." That's the Skamania County Economic

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Development Council. They believe that we live in an absolutely beautiful place. Their website also states, "Skamania County's southern border is located in the Columbia River Gorge National Scenic Area and offers spectacular views."

I agree with them. I have common ground with Skamania County. I have common ground with the Skamania County Economic Development Council. I wholeheartedly agree with them. Indeed this is one of the most scenic landscapes in the Country with spectacular views. We have common ground in that we see this area of the world as uniquely beautiful. The industrialization of placing wind towers in the proposed area will ruin this unique area of the world. This project is not in the right place.

The environmental impact statement does not adequately analyze the impacts on animals. This impact statement has failed to identify the number of bat species in the area nor has it gone into any in-depth analysis on how bats are killed simply by being in the proximity of the low pressure zone of moving blades. Bats are important animals which help my family's permaculture farm which is located in Mill A.

Growing local food is very important. If you don't know that by now you know it now. Growing local food is important which we are doing in Mill A with a

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permaculture farm. It is important for our community to stay strong and healthy. Our permaculture garden in Mill A is an agricultural system that mimics the relationship found in natural ecology. The bats help us to keep a healthy garden. No real effort has been put forth as to what impact the wind towers would have on the bat population. I am gravely concerned about this impact.

However, just because I have stated I am opposed to the Whistling Ridge Wind Project does not necessarily mean I do not support SDS Lumber Company's desire to implement a project that is economically benefitting everyone. There are other things that can be done. We can come up together as a community and create win-win situations economically and environmentally.

Some suggestions. Suggest other ways SDS can make money with less environmental impact. I have an idea which I would like to present to SDS officials, and I didn't call Mr. Backus last year because I haven't gotten my presentation together. Anyway I would like to present to the SDS officials a real money making venture with high yield and low environmental impacts which would create much more than just eight to nine jobs in the end. SDS would economically benefit as well as the County with this idea that I have.

This is another idea I have. Everyone in the

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audience please contact your state representative regarding passing the Washington State Bank bill. North Dakota has a state bank and they are out of debt. On March 2, the Washington State House Financial Institution and Insurance Committee held a public hearing in Olympia on House Bill 3162 which enables the creation of a Washington State bank. These are out-of-the-box ways of bringing money to the county without impacting environment.

The last thing I have to say is for the audience too is to use local currency with the local currency and it would be very beneficial to you. My hope is that this community can come together and create win-win situations for everyone instead of creating enemies of neighbors. It can be done.

Scot, do you have anything to add?

MR. BERGERON: No, great.

CHAIR LUCE: Thank you, appreciate it very much. Bob Hansen followed by No. 27's handwriting reminds me of my own, Elden. I'm going to call on staff to help me, but let's go, Bob.

COMMENTS BY BOB HANSEN

My name is Bob Hansen, and I live in Lyle, Washington. First, I want to thank the Council for your time and consideration. I am an ardent proponent of renewable energy when it is sensitively located and designed

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to avoid negative impacts on wildlife and the view shed.

My emphasis tonight focuses on our special view shed. Most of us in this room would be opposed to these proposed facilities at the Grand Canyon, at Mount Rainier or at Yellowstone National Park; yet we have an inconvenient event truth. The DEIS ignores the comments and conclusions of agencies with expertise in managing scenic resources including the Forest Service and the National Park Service. According to the National Park Service we believe that it is clear that visual impacts to the Columbia Gorge National Scenic Area and the National Historic Trails will degrade the core scenic and historic landscape values of these resources. We strongly recommend at a minimum removing Turbine Corridors A-1 through A-7 from further project consideration.

As a 25-year public employee I am deeply disturbed that these comments from a public agency, the National Parks Service, would somehow be ignored in the DEIS. There is special landscaping in this world, and the Columbia Gorge is one of those. I am an ardent opponent of industrial wind power facilities located so as to adversely impact the Columbia Gorge Scenic Area or view shed just as I am opposed to similar facilities in front of Mount Rainier, in front of Yellowstone National Park, and in front of the Grand Canyon.

CHAIR LUCE: Thank you. I'm going to have a go at

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it. It looks like Elden. I apologize but your handwriting does look like mine.

COMMENTS BY ELDEN SCHULTZ

My name is Elden Schultz and I live at [redacted]. My house and 99 percent of all others' houses look at Mount Hood or the Gorge. I'm going to say for the project. Skamania County has been going down hill for the last 30 years, and we actually need something positive in this county.

CHAIR LUCE: Do we have a Kelly Kreps and followed by David Bacon.

COMMENTS BY KELLY KREPS

Good evening, Mr. Luce, Council, thank you for your time. My name is Kelly Kreps, K-r-e-p-s. I live at [redacted], White Salmon. I am here as spokesman for the families of the Kreps Ranch. My family has been ranching in Western Klickitat County since the early 1880s. We and the generations before us have seen many changes come to this area, from horses to cars and tractors, from lanterns to electricity, from the main industries of fruit and timber, to diversifying also with tourism and recreation. From the 1980s with a few windsurfers to becoming the windsurfing capital of the world. And now with the technology to efficiently harness the wind for electricity that too can be a great thing for these

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communities.

SDS is a landmark company in this area. They have provided livelihoods to hundreds, if not thousands, of families over the years. They have had the courage to grow and expand for the good of those of us who live here. They even keep most of their land open to recreate on. Many of you in this room have probably enjoyed the privilege of either hiking, mountain biking, or hunting on SDS property. Just as there were locals who didn't like to see the colorful sails going back and forth across the Columbia there will be locals who don't like seeing windmills going around in circles. Just as the communities changed, adapted, and grew with the recreation boom, they will change, adapt, and grow with the energy growth.

We support and encourage the Whistling Ridge Project. SDS is a good company and a great asset to our communities. It is time for wind energy to move further west. Thank you.

CHAIR LUCE: Thank you.

Mr. Nathan Baker followed by Robert Matteri followed by Nathan Backer.

MR. BAKER: Thank you. I have a question. Would you allow somebody who signed up later in the day to speak in my place who is not able to make it tomorrow?

CHAIR LUCE: Somebody other than yourself wishes

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to speak?

MR. BAKER: Kevin Gorman.

CHAIR LUCE: So be it. Mr. Gorman.

COMMENTS BY KEVIN GORMAN

Thank you, Chair Luce. My name is Kevin Gorman. I'm the Executive Director of Friends of the Columbia Gorge. Nathan is our staff attorney. We represent about 5,000 members who live in Oregon, Washington, and throughout the Columbia Gorge.

Now Friends of the Columbia Gorge is a supporter of renewable energy, but the thing you need to remember is that like any form of development for renewable energy there is a time and there's a place. Right now we all know this is the time, but the question before you is if this is the place. We would argue that this is not the place.

Your committee has considered several wind development projects throughout the state of Washington, but the proposal before you today affects far more than local and state levels. This is situated on top of the Columbia River Gorge National Scenic Area so your decision will have national and international ramifications.

Now earlier you heard a woman talk about the National Geographic ranking. If you haven't heard about this, I want to just explain. In 2009, National Geographic Traveler ranked 133 destinations around the world to figure

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out the world's greatest places. The Columbia Gorge tied for No. 6 in the world. It went ahead of every national park in the country. It was ahead of the Serengeti, it was ahead of Tuscany. One judge who did this said the two states have done an incredible job of managing and protecting resources and views. Another said the Gorge benefits from some of the best land preservation programs in the nation in the magnificent natural scenery that's well protected. These judges did not know about this proposal.

That's why these high stakes. Someone earlier mentioned that the National Park Service weighed in. They gave very strong comments. Those comments were ignored. The U.S. Forest Service weighed in. They said there is risk of significant impacts to protected scenic resources if the proposed energy project is built as currently planned. The Forest Service also recommends the applicant eliminate turbine locations found to be visible from the scenic key viewing areas to avoid impacts. These comments were ignored, and what we were told in the Draft EIS is there were no impacts.

So we ask you to look at this one more time. Consider reasonable alternatives and look at the language from these federal agencies who are mandated to protect this area. Look at what they're saying about the potential impact and make your decision based on those. Thank you.

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CHAIR LUCE: Thank you, sir.

Mr. Robert Matteri.

COMMENTS BY ROBERT MATTERI

Thank you. I'm Robert Matteri. I'm from Portland, Oregon, [redacted] I was raised in Mecca Republic. I'm a physician. I own an in vitro fertilization clinic that employs 50 Oregonians and Washingtonians. I'm a small wood lot owner. I've planted thousands of trees and I'm an environmentalist. I was surprised to find out about this meeting just last week by chance.

The Columbia Gorge Scenic Areas are nationally for millions of people in Washington and Oregon. When I Googled the Oregon National Scenic Area I got 600,000 responses. The majority of Oregonians and Washingtonians support green energy, but they do not support destroying the view, the scenic view of our National Scenic Area. It's a matter of numbers. There are millions of people in the Portland-Vancouver area that depend upon this area as a place for beauty and tourism. My little neighborhood of Irvington in Portland has more people than White Salmon has.

I disagree with the draft environmental impact position on the economic effect of the Whistling Ridge Project. I believe that Klickitat and Skamania County and White Salmon Economic Development Councils are wrong in the

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emphasis on future development at the expense of our environment. The future is ecotourism.

The future clearly is implying wind turbines built in California or Europe or elsewhere and building wind farms here the best economic development in the Gorge is ecotourism so we must protect that aspect. The right thing for the environment is green energy but in the right place. The wind turbines past The Dalles every thousand meters in the last few years affect the beautiful entrance to the Pacific window that was coming in from the east. The 50 turbines at Whistling Ridge will ruin the vista but provide at most two percent of the power of a coal plant. The wind turbines will be 42 stories tall when the blade is at its highest. The biggest building in Portland is only 42 stories tall, and to say that this has no visual impact I disagree.

Finally, in redoing the draft environmental impact statement I would urge you to not act like the Minerals Management Service of the Interior Department in serving oil companies not us the people. Do not just serve the owners of Whistling Ridge and the economic interest of Klickitat County and Skamania County, but serve the millions of us Washingtonians and Oregonians who live in the metro area. I urge you to listen to the federal scientific body against this proposal, the state of Washington Fish and Wildlife,

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the U.S. Forest Service, the National Park Service, amongst others, but also listen to the cultural voice of millions of Oregonians and Washingtonians in Portland and Vancouver and other Americans from elsewhere and protect the scenic part in our Gorge. I ask you to do that right thing. Thank you.

CHAIR LUCE: Thank you, sir. David Baker followed by Helen Powell.

COMMENTS BY DAVID BAKER

My name is David C. Baker. I live at [redacted] in White Salmon, Washington. I come to you with a commercial tonight to levy up things here and tell you that our family produces the Columbia Gorge map. 70,000 will be out on the streets all through the Gorge, and it helps promote both the Gorge and the livability here. And the reason I mention that is if we don't make a stand it will cost us everything just to get it out as we believe in the Columbia Gorge.

What I have to say here tonight is somewhat facetious and it's also very serious. First of all, in business I was acquainted with a book that different parties use. It was called How to Lie With Statistics, and I thought it would be valuable for both sides of this equation to get it and then they would be on a level playing field.

To kind of sum up things in a very short form is it appears to me that there are four significant areas both

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for and against this. Those that oppose speak of the birds and the wildlife, the noise, the view, and the construction problems, the four areas that I've read about and seen the most of.

The four on the alternate side of the construction is that the power would bring to us enough power for all practical purposes, supply power for both counties in total kilowatts, and that the revenue derived from it would enhance the tax base significantly, and the jobs and income as number three. And fourth it is important as anything for this whole country is the right to use the property that the Whistling Ridge personnel have responsibility for to produce a product that is of value and profit for them to our community.

CHAIR LUCE: Thank you, sir. Appreciate that. Helen Paulus.

COMMENTS BY HELEN PAULUS

Helen Paulus, [redacted] I did not come tonight with comments specifically directed toward the EIS so I will speak just in general.

I support this project. I think eight years is long enough. I don't think any EIS is going to be quite adequate for everyone. I live one and a half miles from this proposed project, and I support it, and I thank you for coming to tonight.

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CHAIR LUCE: Thank you. Herb Hardin followed by Izak Riley followed by Don Stover.

COMMENTS BY HERB HARDIN

Good evening, Ladies and Gentlemen. My name is Herb Hardin. I live in White Salmon, Washington at [redacted]

When this project was first announced, my wife and I took a look at the pictures of the windmills on our Northwest view horizon and we said, "Not in our backward." When we thought about it for a while, decided, well, dirty energy has a price and clean energy also has a price in the environment in many other ways, and we decided that it was time that we got with the world and started paying the price for clean energy. So we are in favor of the project, but tonight is the first time that I have had a chance to read the EIS or at least the part of it that interests me.

Page 3-175, paragraph 3.9.3.1, it addresses the avian warning lights on top of these windmills. I was a pilot for 33 years. Anti-collision lights are typically strobe lights that you can see for 20 miles. They're bright. They're intended to get your attention so you don't run into other airplanes or fixed objects in the ground. The EIS is virtually silent on this at that paragraph and page, and I have some real reservations. If you put strobe lights on 50 of those things the nighttime is going to be

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totally ruined with a line of flashing strobes. Not acceptable, not just to me but to the people who live in Pucker Huddle and up on Strawberry Mountain. Anybody who's within 20 miles you can see it. So I would urge that the EIS take another look at this problem and figure out with the FAA what can be done, including restricted air space above that area so that safe passage with a minimum safe crossing altitude be established so that aircraft will have it marked on their charts not to fly at that area. If those lights can be seen below horizontal, everybody in the Gorge is going to be able to see them. So it's not just a maybe problem. It could be a real problem that needs to be addressed more thoroughly than it is. Other than that, my wife and I support the project.

CHAIR LUCE: Thank you.

Mr. Izak Riley.

COMMENTS BY IZAK RILEY

My name is Izak Riley, R-i-l-e-y. I live at [redacted] I'm 26 years old. I was born and raised here in White Salmon. I actually reside in my grandmother's house which I purchased from the family. It has a clear view of Underwood Mountain where the proposed wind energy project is suppose to take place up there.

I walk out every morning about sunrise and the sun shines on that mountain, and, you know, it makes me want to

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get up and go to work in the morning. My first thought is I think I might not want to see something up there like that sticking up in the air, but, you know, being raised around here and seeing the changes and the change in the economy, I think we need to sacrifice a little bit, you know, from view per se to help us out a little bit. We need some help. I could sit there in the morning and watch T.V. and watch oil pumping into the Gulf or I can get up and take a glance up there and see a couple white towers sticking up. That to me is a sense of security. It's not a pocket of landscape per se, but I'd like to see that a lot more than I would like to turn on the news and see oil pumping into the Gulf.

So Stevenson's, SDS, they have all but built this community upon stewardship and proper decision making and utilizing our lands around. As far as their track record is concerned, I have yet to see them make a mistake. You know, they're very thorough on any studies. They communicate with the folks in the community here, and if I was a tourist coming up the Gorge, and I looked up and them seen wind turbines, I would commend the community for doing their part in the green energy project and helping out our world.

So I support the project, and thank you for your time coming out here to listen to us.

CHAIR LUCE: Thank you for coming.

Don Stover followed by Arlene Bradford followed by

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Brian Short.

COMMENTS BY DAWN STOVER

Hi, my name is Dawn Stover, spelled S-t-o-v-as in Victor-e-r. I live at [redacted] I've been following the wind issue quite closely for more than 15 years, particularly concerning wildlife interaction. I've visited some projects all over the west, and then I serve on three technical advisory committees for the wind power projects in Klickitat County.

I want to focus my comments tonight on cumulative impacts because I believe that's something that got very short tripped in the DEIS. In particular, the DEIS looks at two cumulative impact studies; one of which was done in the in Mid-Atlantic U.S. and really has very little relevance to the project being proposed here. The other of which was to look at projects across the Columbia Plateau Ecoregion and the closest project in there to Whistling Ridge was the Big Horn Project in Klickitat County. All of the others that were reviewed are even farther to the east and have very different habitat than the Whistling Ridge Project, but all basically is arid mostly treeless landscape completely different precipitation regime and habitat, plant, and animal community than we see here for Whistling Ridge.

The study also looked at future and nearby projects. In fact, just a total of about 10 wind projects.

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I want to show you what the real cumulative impacts are. This is a map of Klickitat County, Eastern Klickitat County. All of the colored areas on this map which you can see cover the entire map are wind projects that are either already permitted or proposed, and I'll give that to you later. I also have a map here of all the wind projects in this region along the Columbia River both on the Oregon and Washington side that has applied for connection to the BPA grid, and that consists of at least 46 wind projects, some of which by the way are smaller than Whistling Ridge, most are larger. So we have at least 15 projects in Klickitat County and 46 altogether.

Now the DEIS says there are no population level impact on wildlife, these projects. There is no evidence whatsoever to substantiate that. There have been no studies of population level impacts, and there's been no safe threshold that's been determined. In fact, of all the studies from our area the preconstruction mortality estimates have not matched the post-construction fatality studies. In Klickitat County where the first study was done at a hundred percent of the turbines at Big Horn it was actually an order magnitude higher, somewhere between 8 and 16 times as many raptors were killed unpredicted, and this same company made those predictions, West, Inc., that has done the methodology prediction for this DEIS. We're

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talking about the incremental impacts here. You can lose one finger, maybe you can lose two fingers and still get by, but once you lose ten fingers, you have a hard time surviving. It's like ripping apart a plane. You need to have them all there. When the last one goes, that's when there's a population level impact.

Just want to state one more thing about spotted owls. I got a flyer from SDS in the mail a couple days ago saying there are no owls at this sight. After years of timber harvest there's no suitable habitat for the bird. I think that, you know, what that suggests to me is we need to resource habitat for this particular species. When we look at the damage in the Gulf today, we're not saying let's not go and restore that habitat because the shrimp and the pelicans were already in big trouble down there. What we need to be doing is restoring habitat and saving habitat that matters, and so I'm going to urge you to take another look at those scientific studies. I'll be submitting some more detailed comments about what's wrong with them.

There's no independent plan that's been included in this report. All we have are a couple of studies from the consultant hired by the industry, and I think this needs to take a much broader look at the impact that could be sustained by this project.

CHAIR LUCE: Thank you very much.

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Arlene.

AUDIENCE MEMBER: She left. I saw her leave.

CHAIR LUCE: She saw her leave.

Brian Shortt followed by Jamie Tolfree.

COMMENTS BY BRIAN SHORTT

I think I'd like to start a petition tonight. I'll think about it. My name is Brian Shortt, and my address is [redacted], Oregon.

Back to that petition, I think we should all in this room have a petition for California that they maximize their solar requirements, they maximum their wind turbine capabilities, dam up every river that they have, or put offshore oil turbine systems together and continue to suck all the oil out. Because if we don't hurry up that process in California so that they can become a sink hole all of us in the Northwest are going to use our natural resources up. We're going to use our dams. We're going to use our wind turbines, solar power. Any alternative energy that we generate here is all going to go down there, and as a result of that we're all going to be sitting here wondering what happen to the landscape.

I've been involved in alternative energy since the early '80s, and I've spent the last couple of years trying to understand the benefits of the wind turbines, and I only have a couple of personal comments to make.

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One is my home would be in the view shed of the red lights that are going to blink at night, and the other side of this when this comes back to part of my rearing during the Magnuson and Jackson period when Magnuson said we need to protect our mountains and we need to protect Puget Sound, one of the things that I see from you as a panel is that you are evaluating the merits of putting wind turbines into the foothills of our Cascade Mountains. Now maybe Klickitat County should be getting credits from all the other counties in the area for being the sort of sacrificial land putting together this wonderful wind turbine program in Klickitat County. I don't think they're being paid enough for it, but I think that you as a group need to seriously consider the siting values.

And I've listened to biologists say with almost unanimous consent this doesn't have the merits that it should have, and that we're looking at something that's not on unlike Bonneville in the '30s when we're sitting in essentially a depression and banks were withdrawing themselves and people were walking away from their homes and jobs were down. We are at another period like. That this is probably one of our lowest periods in my life.

My life is long enough now that when I drive in my car and I look at the radio, it says I'm listening to oldies. So I have reached an age now where I have a little

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bit of wisdom and a little bit of experience, not necessarily wise wisdom or wise experience, but I've seen enough things in my life and enough sequence has taken place that we're not doing enough with conservation technologies and we're taking these very crude formats that have been with us for the last hundred years, and if you were in Holland it would be the last 200 years and trying bring these forward as viable producers of alternative energy.

My last comment to you I made it once before. It's the only opposition I have to this type of project. Wind turbines do not belong in the foothills of the Cascade Mountain Range. Thank you.

CHAIR LUCE: Thank you very much. Next speaker will be Jamie.

COMMENTS BY JAMIE TOLFREE

Thank you. Thank you, Mr. Luce and Council Members for coming to Underwood in Skamania County. I'm Jamie Tolfree, the County Commissioner of District 3.

Hi, Judy, nice to meet you.

And I am here as a proponent. This proposed project is in District 3. I am confident that the proposed Whistling Ridge Energy Project as described in the Draft EIS has received thorough analysis of all environmental aspects of the project. Where potential impacts were identified a variety of mitigation measures are offered as remedy. I

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support the proposed action. It is consistent with Skamania County codes and has been thoroughly evaluated. I urge you to adopt the Draft EIS proposed project so this project can move on expedientially. Thank you very much for your efforts.

CHAIR LUCE: Thank you.

Doug Charters, Christine Bluestone, and Judy Teitzel.

COMMENTS BY DOUG CHARTERS

I'm Doug Charters. I live at [redacted] White Salmon. My people have been here for over a century on both sides of the family and have seen lots happened in the Gorge for many years, 50 years for myself. I've actually gone and spoken with a lot of folks in this audience on my own and kind of did my own little environmental impact statement. And I can see the Gorge folk's viewpoint on the view and then the wildlife people on the wildlife concerns, and I'm in forestry myself so I can see the forest aspects of this too.

The overall analysis of what this project would do is it would be a benefit in changing to a better environmental future on the energy situation for the nation in this small little microcosm of what it is, but as for the view thing looking at it from a distance they kind of remind me of overstory trees the way the hills bounce around. I've

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gone up to Goldendale and listened to them, and they're really not very noisy. It's like the wind blowing through the trees is kind of what I would describe it as for the noise, you know.

Like anybody else I've got concerns. I'm trying to find the middle logical ground of everybody's situation, and overall one thing that I question is color. Do we have to make them white all the time? Can we paint them up to look like trees? Because we do the cell towers like trees. You've got little flash of lights stick out that kind of camouflages them. So if you have them with brown trunks and forest green propellers, you probably wouldn't really see the things.

It would be, you know, I kind of when we first put them in Goldendale I thought I had my culture shock, you know, when they first come up and they had a few dozen of them up, but you get used to them after a while. But I always wondered why don't they paint them, you know, more of an amber color or something so they wouldn't be such a thing that would stick out where you would see so much in the visual aspect of it.

But in my analysis personally I think, you know, it ought to be approved and go ahead, and you know, the Stevenson's are good people. They work hard. They've managed their land well, and I really think the project

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would be managed well overall in the long run and we really need the revenue. It's for our schools and it's education. We need our educational dollars.

In the forest industry it takes a hundred years to grow a crop of trees to maturity. That's once a century you really have a financial impact out of that land that these turbines will sit on, and in this way you're having an annual financial impact on your schools. You know, so maybe in the perfect world you would never have to levy again to make up for this. I as a child know the suffrage of bad economic times in the school system. We packed our lunch for like five years before we had a hot lunch program.

Anyway I appreciate your time and I appreciate all the people that came out for this turnout today.

CHAIR LUCE: Thank you.

Christine.

COMMENTS BY CHRISTINE BLUESTONE

Thank you for having me here and listening to my concerns. My name is Christine Bluestone. I live at [redacted], and I'm a gardener, botanist, master gardener, and I believe that this project is just in the wrong place.

There's some concerns about what I have heard about studies that have stated that the location of this wind farm is only considered fair for ability to produce

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maximum wind power for electric production, and another concern I have is the location of access roads for construction and maintenance. How is the traffic from the construction going to affect local residents and local residential traffic? What percent of the tax dollars that we have been told that this project is going to generate is actually going to our community and going to give us a little bit of tax relief that we've been paying in our property taxes? How is the noise from the wind turbines going to affect local residents? That's already been addressed. How is this project going to affect our present tourist industry, scenic valleys? And that's been addressed also. And finally will the power that is generated go to our local community or will it be sold to the highest bidder?

CHAIR LUCE: Thank you, Christine.

Judy.

COMMENTS BY JUDY TEITZEL

My name is Judy Teitzel, T-e-i-t-z-e-l. I live at [redacted]

I represent the Port of Skamania County. I would like to express my support for the Whistling Ridge Energy Project and the Draft Environmental Impact Statement. The DEIS statement documents the wind farms provide substantial economic benefits. The Port of Skamania County supports

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economic development, family wage jobs, and tax revenue.

The project predicts a 1.5 million dollar wind farm payroll and annual new property tax revenues of $731,000 that would help support Skamania County. Not to mention that the President just yesterday, June 15, stated in a speech from his Oval Office that the United States needs to invest in clean energy and the draft environmental impact statement supports this.

I would like to see this project by SDS go forward, and I personally am also in support of this project, and I am in a hundred percent agreement with Peggy Bryan's comments. Thank you very much for coming.

CHAIR LUCE: Thank you. Chief Johnny Jackson.

COMMENTS BY CHIEF JOHNNY JACKSON

Good evening, my people. My name is Johnny Jackson. I am one of the real chiefs in this area. I've lived here all my life, born and raised in this part of the country. And I have been up on this place called Whistling Ridge many times here lately, and I have looked at the whole area, and from that I support the wind power going into that area. I travel up and down that highway all the time, and I can't see anything up there. So a lot of times I think about what the people are saying that it's going to ruin the scene of the Gorge and saying that there are things up there that I don't see that's there.

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People said that before there were things like that in places and I asked them to prove it to me and they couldn't do it because it wasn't there. And I think that Whistling Ridge is a good place for a wind farm because you look today of this growing nation and the world and the people that are coming in from other countries and some in this country. And you look at how far does this electrician power go?

Sometimes we're told over the news to kind of cut down on our electricity in the summer or in the winter. This summer when it gets real hot the electricity from this river here is going to be going south because of the heat. A lot of people are going to depend on it and I know I do. And I'm looking at this wind power on this mountain where it's not really visible and you cannot hear it. I think it's a good thing and I think it will really help this nation with our power.

I want to say another thing; that if it comes down to it, they're talking about nuclear energy again, and I'd rather have this clean wind power than to have nuclear energy going back up again on this river. Our rivers are in bad shape because of things like that. Like the two companies that went on in this river here. Some of our men paid a great price for something that those companies done, and they have to live with it. Their families have to live

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with it.

This here wind power here is not going to hurt anyone, and it's silent and it's clean, and the water is going to be clean, and it's going to be good for our river besides that. So I'm giving the full support of this wind power facility.

CHAIR LUCE: Thank you, Mr. Jackson.

Sherry, Meir followed by Paul Smith, followed by Breff McLaughlin.

COMMENTS BY SHERRY MEIR

Sherry Meir, M-e-i-r, [redacted], Hood River, Oregon.

I support properly sited alternative energy facility development; however a wind energy facility adjacent to the Columbia River Gorge National Scenic Area is not properly sited. The visual impact of placing 426-foot windmills up towering over this pristine forested national scenic treasure is absolutely unacceptable. In addition to negatively impacting scenic views, destroying forest land to great large scale, industrial development will greatly compromise the sensitive wildlife habitat.

Driven by corporate efforts clear choice recently unleashed an unprecedented environmental catastrophe in the Gulf of Mexico. We must prevent any other environmental disasters by choosing to deny construction of the Whistling

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Ridge Project. Thank you.

CHAIR LUCE: Thank you very much.

Paul Smith.

COMMENTS BY PAUL SMITH

Hello, my name is Paul Smith. I live in the west end of Skamania County. I've been there 16 years.

It's been stated a couple of times tonight this document is humongous and I haven't had the kind of time to digest it like maybe I don't know a barrage of groups on the proponent's side has been able to have this out in the past year plus or something. We've had three plus weeks to try to look through this so I will be speaking tomorrow night on some different topics. So pardon me if I'm bouncing around because I simply haven't been able to sound the way I'd like to.

First off, I would like to thank you for giving us this opportunity. One concern I do have is your group with BPA are the ones that are actually behind this DEIS, and my concern is a little bit are you too close to the tree on being able to actually objectively evaluate this? I notice that it said that on page 1-7 no other fed agencies are defined as cooperating agencies at this. Why not?

It sounds like the Forest Service and the National Park Service have some serious concerns; yet those are being conveniently ignored. Key viewing areas, I know that that's

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been downplayed right away by the proponent's side. Some of these wind turbines could be as high as 426 feet. I have a feeling that most of those 50 are going to be on the high side, not on those potentially smaller ones. Biggest bang for your thought maybe it's the most efficient way. Well, the Space Needle is about 605 feet, and so I can't believe that to have 50 nearly Space Needle sized wind turbines in the Columbia Gorge are not going to be able to be viewed from not just key viewing areas and also at night. When you go out toward The Dalles I-84 or 14 going to Goldendale you see complete red lights.

Full-time jobs only seven to eight. That is not exactly economic development. There is no alternatives to this. This is being defined as one of the alternatives. Well, it isn't an alternative. This is a proposal. The only alternative is no action. So technically there are no alternatives; yet it talks as if it is one of the alternatives.

Seventy megawatts why is that the key number? Why can't it be less? In this document it basically states that it has to be that in order for this to be viable; yet there's no wiggle room. So I'm a little concerned about that.

I would like to reiterate that there definitely needs to be more time for this. I don't know if that's too

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late for you to be able to expand this, but simply the public has not had enough time to look through this, and it's just not fair. I'm a little concerned about that.

On the Oregon side there's a proposal for 300 wind turbines over 30,000 acres and that is an Irish company. So at least this is on the Washington side, but most of the power is going to go to the general system. That's probably going to go down to California like they've talked about earlier. So the power isn't going to be necessarily staying here. So thank you.

CHAIR LUCE: Do you have written comments and, if so, would you please --

MR. SMITH: Not at this time. I'll hand them in before July 19.

CHAIR LUCE: The last speaker that I have is Breff McLaughlin. Is McLaughlin here? He appears to have left.

All right. Who else do we have? Two other people? A hand back there. Come on up.

COMMENTS BY SALLY NEWELL

My name is Sally Newell. I live at [redacted], Underwood, Washington. I did look at the DEIS over at the library. I was disappointed. I felt it was very incomplete. I felt it was poorly done. I felt like we're getting the bum's rush here on this project.

The transportation portion of it said that there

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was not going to be any impact to emergency services up here. Excuse me? When you've got 200 and some trucks coming through at morning rush hour and all throughout the day and then I forget how many in the afternoon, if it's your child choking or your house that's on fire that is going to be an impact. And grant it, it's only for the construction portion of the project, but that, you know, that could be a very serious impact for some folks.

Also speaking just to the National Scenic Area part of it, I didn't see anything in that EIS that addressed the amount of grief, heartburn, and frustration that has been experienced by the people living in the National Scenic Area. You're asking them to put their homes behind a tree, paint it brown, and then you're going to string red lights over the ridge tops. I don't think so. I don't think it's fair. I think it's asinine. And for the amount of power that's going to be generated by this thing. No, I don't think so. I just think it's wrong. There has been a lot of money spent by all the governments -- state, federal, county -- to support the National Scenic Area and this will defile it.

And I would also point out that the Windy Flats Project in Dallesport the same thing. It's just no one drawing the boundaries for the National Scenic Area could have envisioned Space Needles being perched on the back side

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of the boundary. It just wasn't something folks were thinking about and I hope that you will. Thank you.

CHAIR LUCE: Thank you, Ms. Newell.

Is there anybody else who wants to speak tonight? We have one more. All right.

COMMENTS BY JOHN LOVELL

My name is John Lovell, resident of Bingen, Washington.

CHAIR LUCE: Could you spell your last name.

MR. LOVELL: L-o-v-e-l-l.

CHAIR LUCE: Thank you.

MR. LOVELL: I haven't really studied the flow chart in the process, and I know you have a meeting tomorrow night. I would hope there's time where you could actually use your own eyes and ears and drive the Gorge and see what a focal point Underwood Mountain is. I really suggest you drive from Cascade Locks to The Dalles, cross over The Dalles and come back 14. See how that ridge conforms and how these are going to stick up on the back side of that and then go back to your report and see what they say about visual impact. You'll know for yourself.

CHAIR LUCE: Thank you. If there is no one else to speak? Is there anyone else to speak this evening? We've got another speaker. I thought you traded your spot?

MR. BAKER: We didn't think we'd be able to finish

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the list. I can speak tomorrow if you like.

CHAIR LUCE: Give me your three minutes tonight.

COMMENTS BY NATHAN BAKER

Okay. Thank you, Mr. Chair, Members of the Council. My name is Nathan Baker. I'm the staff attorney for Friends of the Columbia Gorge. I wanted to stress a few of the things that are different about this project, different from any of the projects that the Council has reviewed to date.

This is the only project located within forested habitat, and the potential for impacts are higher in forested habitat than the other projects in Eastern Washington. This is the only project within a designated spotted owl special emphasis area. This is the only project with federal agencies including the U.S. Forest Service and the National Park Service recommending significant modifications to the project. This is the only project that would cause adverse significant impacts in two states, not just Washington but Oregon as well. This is the only project within three miles of the Lewis and Clark National Historic Trail, the Oregon Pioneer National Historic Trail, and the Historic Columbia River Highway. This is the only project surrounded by recreational resources. It's the only project with the high likelihood of affecting cultural resources as we heard from the Yakama Nation earlier

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tonight. And last but not least it's the only project that would cause significant adverse impacts to a National Scenic Area.

Now because this project is different it requires taking a special close look at the impacts. Unfortunately this DEIS doesn't do that. It is fundamentally broad because it ignores and trivializes the impacts of the project.

I'd like to echo the statements made earlier tonight that it's difficult for the public to make oral comments tonight and tomorrow night having had less than three weeks to review 1,500 pages of material, and we understand that written comments are allowed another month, but it doesn't make sense to have the comments for oral hearings a month prior to the deadline for written comments. Maybe there was a good reason for that. It hasn't been stated yet, but we would suggest there should be another hearing for oral comments after the public has had time to review the full DEIS and comment intelligently on it. That's all for tonight. Thank you.

CHAIR LUCE: Thank you. For those of you who are not aware this Draft Environmental Impact Statement is available on our internet site completely. You don't have to necessarily print it out. You can if you want to, but you can print selected portions of it or read it on the

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screen.

Anyone else wanting to speak tonight?

Well, that being the case, this concludes this public meeting. I want to thank Bonneville Power Administration Andrew Montano and the Bonneville Staff, as well as the EFSEC Council Members, but I particularly want to thank you all for coming. Thank you. We are adjourned for the evening.

* * * * *

(Whereupon, the public meeting was adjourned at 8:56 p.m.)

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In re: Whistling Ridge Energy Project
Application No. 2009-01

A F F I D A V I T

I, Shaun Linse, CCR, do hereby certify that the foregoing transcript prepared under my direction is a full and complete transcript of proceedings held on June 16, 2010, in Underwood, Washington.

_____
Shaun Linse, CCR 2029

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BEFORE THE STATE OF WASHINGTON

ENERGY FACILITY SITE EVALUATION COUNCIL

In the Matter of	)	
Application No. 2009-01	)	Public Comment Meeting
WHISTLING RIDGE ENERGY, LLC.	)	On Draft EIS
WHISTLING RIDGE ENERGY PROJECT	)	Pages 1 - 74
_____	)	

A Public Meeting in the above matter was held on Thursday, June 17, 2010, at the Skamania County Fairgrounds, 710 S.W. Rock Creek Drive, Stevenson, Washington at 6:30 p.m., before the Energy Facility Site Evaluation Council Members.

* * * * *

CHAIR LUCE: Good evening. Today is June 17, 2010. This is the Rock Creek Center in Stevenson, Washington, and we are here to take public comments on the Draft Environmental Impact Statement prepared in connection with the Whistling Ridge Energy Project. Everyone can hear me? Everyone can hear me.

My name is Jim Luce and I'm Chair of the Energy Facility Site Evaluation Council, and on behalf of the Council I want to thank you for taking the time to come tonight and participate in the meeting. I apologize, but I do have a script here that I have been instructed to read by my lawyers, and I'm sure you all appreciate that. I'll try and ad lib to get a little humor along the way, but we'll

see.

We have EFSEC Energy Siting Council Members here tonight, and we'll start down at the left with Dennis Moss. If each one of you can stand and say what agency you represent, that would be helpful.

MR. MOSS: My name is Dennis Moss, and I represent Utilities and Transportation Commission.

MS. McDONALD: My name is Mary McDonald and I represent the Department of Natural Resources.

MR. FRYHLING: My name is Dick Fryhling and I represent the Department of Commerce.

CHAIR LUCE: I am Jim Luce, and to my immediate right is --

MR. TAYER: Jeff Tayer. I'm with Washington Fish and Wildlife.

MS. WILSON: Judy Wilson. I represent Skamania County.

CHAIR LUCE: We also have EFSEC Energy Siting Council staff here this evening. We'll begin with Mr. Posner.

MR. POSNER: Stephen Posner.

MR. WRIGHT: I'm Al.

MR. WALLIS: Bob Wallis, Administrative Law Judge.

MR. CREWS: Kyle Crews from the Attorney General's Office.

CHAIR LUCE: Most importantly over there behind the table Kayce and our good and trusted assistants.

You control the lists. Right?

MS. TALBURT: I do.

CHAIR LUCE: Tammy Talburt controls the lists. She's very important. If you want a copy of the Environmental Impact Statement other than that which is on the website, which it is, you may request a copy, and we will provide a hard copy. So please don't think that you have to burn up your computer and go through all sorts of ribbons to get a copy. So please do that.

I also want to introduce on my immediate left Andrew Montano from the Bonneville Power Administration. This is a joint EIS prepared by Bonneville and the Energy Siting Council.

Andrew, do you have some people with you tonight?

MR. MONTANO: I do. Good evening. Thanks for joining us. I'm Andrew Montano, the Environmental Project Manager for this project. With me tonight I have Susan Offerdahl, the Environmental Protection Specialist, and John Tyler in the back of the room our Public Affairs Specialist. It was brought to my attention tonight that certain people from the meeting last night didn't know that they could ask us questions, ask the Bonneville folks questions. Please if you want to, you can pull myself, Susan, or John aside later

after this meeting and ask us any questions you may have. You may also pull Stephen or Al Wright aside, and they can also answer your questions. Thank you.

CHAIR LUCE: Just to clarify, the Energy Council Members such as myself and my colleagues are participating in an adjudicatory proceeding that's parallel to this. For that reason we do not talk to members of the public as much as we might like to. So it's something that we've adopted as a policy and as I think as a legal practice is probably pretty sound.

By way of preface, the comments tonight are on the Draft Environmental Impact Statement and it issues, not general views. Everybody has particular views about energy policy or alternative energy resources or other issues, and we respect those views, but that's not the purpose of tonight's meeting.

The following is a short summary of the project: On March 10, 2009, Whistling Ridge Energy, LLC, a Washington limited liability company, submitted an application for site certification to the Energy Siting Council to construct and operate the Whistling Ridge Energy Project, a 75-megawatt electrical wind generation facility. The proposed project would be located about seven miles north of the City of White Salmon in Skamania County, Washington. The proposed project site is privately owned land currently used for

commercial timber parts. Up to 50 wind turbines ranging in size from 1.2 to 2.5 megawatts and up to 426 feet tall would be installed for the project. The project would include an operation and maintenance facility, electrical substation -- that's Bonneville -- underground collector lines and systems, access roads and other ancillary facilities.

The revised application was submitted on October 12, 2009, which changed site access by removing the use of a forest service road located within the Columbia Gorge National Scenic Area. Last month the Draft Environmental Impact Statement was issued jointly by Bonneville and EFSEC. It has been prepared consistent with the requirements of SEPA and NEPA. Because the State of Washington has a primary role in the siting of this proposed project, the impact statement generally follows the format contained in WAC 197-11 as adopted by EFSEC through WAC 463-47.

We will be accepting written comments tonight. Also very important, written comments may be sent to us and must be postmarked by July 19. So if you have written comments, please Tammy over here on the right and Kayce will take those comments, and we'll make sure that they get in the official record of proceedings. If you have any questions about EFSEC's application process, Al Wright and Stephen Posner can answer those questions, and you can also

contact Bruce Marvin. Bruce, are you here? Bruce, is the Counsel for the Environment.

Bruce is a State Assistant Attorney General appointed to represent the public in its interest in protecting the quality of the environment. Bruce, can you stand up? And you stood up. People have recognized you. And would you like to comment in any way this evening?

MR. MARVIN: Just that I will be observing and taking notes on the statements that are made today. I will review the written comments that are submitted to EFSEC, and if you have additional information or you'd like to direct comments to me directly, that's fine. I can't promise you one way or the other I'll react to those promises or whether I'll react to them. I'll certainly acknowledge receiving them, but please note that EFSEC is ultimately the people that are going to be making the decision on this. So if you choose to communicate with me, you might also want to copy them and make sure that they get information from you as well. Thank you.

CHAIR LUCE: Thanks, Bruce.

Members of the Public, while you're making comments tonight please be as specific as possible regarding the section of the Environmental Impact Statement that you're addressing. If you inadvertently start drifting away from the subject of tonight's meeting, which I recognize can

happen occasionally, I am going to ask you to refocus your comments specifically on the Draft Environmental Impact Statement.

Now, some basic ground rules that I think we all would agree to. Cell phones in the air. Turn it off, please. Check them. We all love ring tones, but I'll show you mine later if you really want to hear it.

Be respectful. No applause, no negative comments. Everybody here deserves respect. Please limit your comments to three minutes or less. We have a timekeeper over here, Mr. Stephen Posner. He will be giving a one minute time frame for you. He'll have a little sign he will hold up.

If you spoke at last night's meeting, you're at the end of the bus. So that's okay if there's time left over and you want to speak again, you can feel free to do so. I would really, really think if you have new comments as opposed to what you said last night. We got it down with the court reporter so you don't have to repeat yourself.

If you have written comments, please don't read them into the record. We do read everything that's sent to us. That's our job, but standing at the microphone and reading long statements really is not helpful to the Council nor you. We will read those statements.

If you agree with somebody who has just testified before you, either I like the project or I don't like the

project because fill in the blank, just say I agree with the previous speaker or I agree with the speaker that previously spoke on this subject. If there are a number of you supporting a common position and you can agree among yourselves as to one spokesman instead of several, you should feel free to consolidate your time and designate one spokesperson. So hypothetically if there were some advocates for the project and they wanted to get together and say, "There's six of us, we'd like 18 minutes", that would be fine. As converse if there were opponents that felt that way.

So we're going to call three speakers at a time. I'm going to have one person at the mic with two on the ready. When you come forward please give us your comments, state your full name, spell it, give us your address, and if you have brought written materials please again provide them to Tammy and Kayce.

We will now hear oral comments from those present in the order which people signed up, and our first speaker is Paul Pearce followed by Ann Leuders, and Dave L'Hommedieu I believe, and I apologize for pronunciation. My handwriting is in some cases as the handwriting on these sheets and my ability to read what is on them is likewise handicapped.

So yes, sir, Mr. Pearce.

COMMENTS BY PAUL PEARCE

Paul Pearce and I'm a Skamania County Commissioner. My address is [redacted] in Washougal along the west end of our county. As I said, I'm the District 1 County Commissioner, and I will keep my comments brief.

I greatly appreciate you all coming down and holding these hearings for the comments that you're receiving, and I appreciate the hard work that this committee has to do as you work through this entire process.

As to the DEIS, our planning department has done a thorough review and has put together some comments that they will be forwarding to you, two or three technical issues that they felt needed to be looked at.

I'm going to speak to the portion of the DEIS that talks about visual impacts, and really my comments are about the scenic area again. When I met with you before, I talked about the scenic area and the federal law that the scenic area is managed under. And I know that a number of people have talked to you about letters that have come from both the Park Service as well as the National Forest Service, and we would simply say that although those agencies have a role in management of those things that they are federally mandated to manage, that they have overreached that authority and basically when you look at the scenic area law

there's a very clear delineation between the scenic area boundaries. So when you talk about SEPA review on the scenic level, and then you get a letter from the Forest Service or the Parks Service saying you should look at key viewing areas which are in fact managed under the Scenic Act at things outside of the scenic area, I would just repeat what's been repeated a number of times, and that the fact that activities or uses inconsistent with management directives for the scenic area or special management areas which can be seen or heard these areas shall not of itself preclude such activities or uses up to the boundaries of the Gorge. Our argument would clearly be that that was an intent that was clear on Congress's part, and we would appreciate that you would take that into consideration.

I also have a letter from Congressman Brian Baird to the Forest Service, May 20, 2009, and I will give it to your capable staff. But in that letter he calls forth the fact that the Forest Service in his opinion is reaching outside of their area of responsibility, and I also have a letter from both Congressman Hastings and Congressman Baird to the National Parks Service where they say nothing in this section of this title allows you to or allows effects outside the scenic area to be taken into account by these agencies. And as I explained to the Forest Service in meeting just two days ago when you comment as the Forest

Service as a federal agency you carry a big pail of water, and I think that it's important for the board to recognize that when they're commenting they're commenting outside of their jurisdiction and I appreciate that.

CHAIR LUCE: Thank you. Thank you very much, appreciate your comments, Mr. Pearce.

Ann.

COMMENTS BY ANN LEUDERS

Leuders. I'm at [redacted] Washington.

CHAIR LUCE: Spelling?

MS. LEUDERS: The last name?

CHAIR LUCE: Yes, please.

MS. LEUDERS: L-e-u-d as in David -e-r-s as in Sam.

CHAIR LUCE: Thank you.

MS. LEUDERS: I would like to comment on the visual impacts section of the Draft Environmental Impact Statement, and I came prepared with some written notes because I oftentimes forget my train of thought.

Basically at this point opponents to this project are asking your Council to sacrifice the economic stability of Skamania for their view. They are opposing it as it's going to be detrimental to tourism which I do not believe to be true, and further they cannot ask Skamania County, I

don't feel they can ask Skamania County to survive on tourism alone.

Further, they would note that it's a detriment to wildlife. I do not find that the Environmental Impact Statement is clear on that. I think it says maybe. So at this point I would just like to inform the support of this project. SDS has been a great steward of the land. They will continue to be a great steward of the land and furthermore continue to be good for this community.

CHAIR LUCE: Thank you. Appreciate your comments.

Dave L'Hommedieu and after Dave we'll have Matt Mega and Mr. Truitt.

COMMENTS BY DAVE L'HOMMEDIEU

My name is Dave L'Hommedieu. I live at [redacted] here in Skamania County. Previous to retiring I worked for 34 years --

CHAIR LUCE: Spelling on the last name if you could.

MR. L'HOMMEDIEU: Oh, L-'-H-o-m-m-e-d-i-e-u.

CHAIR LUCE: Thank you, sir.

MR. L'HOMMEDIEU: That's why you couldn't pronounce it.

CHAIR LUCE: You Should see what they do with Luce.

MR. L'HOMMEDIEU: Previous to Retiring I worked

for 34 years for both the U.S. Forest Service and the Bureau of Indian Affairs as a ranger in Glenwood, Washington. My main duties were timber sale administration, and I can tell you I have reviewed more EIS's than I ever would like to do again, but I'm here and I've done it again. And what I have seen in this project that this EIS it's a fine job. The only thing that I could find that was really wrong or way out of the picture was the complaint about the visuals. Now the visuals that I see and I drove up there, and I can see from I-84 is what I would consider those windmills are way in the background and not much of an impact of anybody coming down I-84.

We need this project because it will generate money for the county to run. It will put money into our schools which we need very badly, and we hope that this project goes ahead as proposed. I totally support the project and hopefully we'll use this project to generate electricity for the local area or wherever they send it under the wire until something better comes along. Thank you.

CHAIR LUCE: Thank you, sir. Appreciate your comments. Mr. Truitt.

MR. TRUITT: You're next.

COMMENTS BY MATT MEGA

Good evening. My name is Matt Mega. I'm the

director of conservation out of Seattle Audubon. Last name is M-e-g-a.

Our organization is in the process of reviewing the DEIS. Our board of directors has not made a final decision so these are preliminary comments. We'll have written comments by the 18th. We're also official intervenors in the EFSEC process and we've met with SDS on one occasion to do a site visit.

Our primary goal is to ensure a balance between our growing concerns over green energy and not impacting our local bird and wildlife populations. This is not an easy task. As we know birds do get killed by wind turbines. A recent Seattle Times article said about 6,500 birds get killed annually by wind turbines in Washington and Oregon together.

So this is hard for a bird organization, but we're looking at the bigger picture. We're looking at green power. We're trying to weigh it and look at those balance issues. So our preliminary comments on the EIS as we know this is the first wind power project in forested landscape. That causes some uncertainties for you. We need to make sure the bird surveys, the collision risk models, all those things address forested landscapes. Currently the guidelines for Washington State that you guys often used for siting and mitigation are really focused on Eastern

Washington Habitats so we may need to look at those guidelines and see what needs to be updated and what kind of new things you need to put in.

So our concern is really looking at mitigation. The 30-year life of this project and the mitigation impacts we'll be commenting specifically on some of those. We know there's a tech advisory committee that's suppose to be put together. It does not mention Audubon. We would like to see an Audubon representative and other NGOs on there. We also feel that post-mortality studies for two years is not adequate for this new kind of project in a forested landscape so we're looking for longer post-mortality studies and maybe some changes to those.

So essentially I'm here to raise, you know, there's some uncertainties. This is a new project in a forested landscape, and your job is tough and we're going to hopefully help out with some comments and make them as constructive as possible.

CHAIR LUCE: Thank you, Matt.

Mr. Truitt.

COMMENTS BY W.D TRUITT

Thank you. My name is W.D. Truitt. Last name is T-r-u-i-t-t. I am District 2 Port Commissioner representing the Port of Skamania County, and I've lived in the county more than 50 years.

The Port and myself support this project. We're looking at 143 average jobs generated during construction, $13 million in local purchase during construction, $1.5 million in annual wind farm payroll, annual new property tax revenue which is very important to the county at $731,000, $150,000 annually to the White Salmon School District, and 8 or 9 permanent jobs which is very important to the county.

As the gentleman that spoke previous to me mentioned, I've been studying your EIS and some new technology from wind turbines, and there was a lady who spoke last night in Underwood that talked about bats, and they supposedly have developed new technology that takes the vacuum off the back side of the blade or whatever it does. So anyway it doesn't harm bats anymore. Just I learned this in the last couple days. Anyway we're in support of this thing.

CHAIR LUCE: Thank you very much, Mr. Truitt.

Mr. Canon, Mike Canon Cannon followed by Aaron Leonard followed Tom D-r-a-c-h.

Good evening, Mr. Canon.

COMMENTS BY MIKE CANON

Good evening. My name is Mike Canon and I'm a foreigner. I'm from Klickitat County, and I'm the Director of the Economic Development Department for Klickitat County.

The address is [redacted] Goldendale and we very much support this Whistling Ridge Energy Project.

I felt the thing I could do that would be the most helpful is to explain some of the Klickitat experience. Because of the income that our wind farms are producing for our schools, our hospitals, our library districts, our red funds, and our fire districts, and numbers in cases as much as hundreds of thousands of dollars, in the smaller subdistricts tens of thousands, this is making a difference.

Right now we have just a few wind farms that are actually on the tax rolls. The Ebidrolla Wind Farm which is the PTM and the Big Horn 1 and 2 farms. That particular wind farm paid over a million dollars in property tax this year. The Summit Power which is the White Creek Wind Farm paid $1,011,000. There are others that are going to be on the tax rolls in 2011. Those are the Tuolumne Wind Project known as Windy Point and then there's Windy Flats. And Windy Point these two together represent the largest wind farm in the United States. Then there's another wind farm from PacifiCorp.

We have a thousand megawatts in production. That provides household electricity for 500,000 households per year. That's a tremendous amount of energy. We have another 700 megawatts that are permitted and scheduled for construction.

What we see as positive about this type of effort for Skamania is that generally benefits these junior taxing districts. It will benefit your county and through all of that revenue it directly benefits your citizens. We found that there was some concern over view shed. Our view shed where these wind farms are not well near as intense as where yours is, but the benefits to people has energized Klickitat County residents in many, many different ways very positively. And they have better schools, they will have better hospitals, and much better fire protection. These are things that we see as positive in the effort to have this green energy, this wind energy in your county. We very much support this project. Thank you.

CHAIR LUCE: Thank you, sir.

Mr. Leonard.

COMMENTS BY AARON LEONARD

Aaron Leonard. I'm actually going to choose not to speak in regards to the DEIS at this time because I have not had the opportunity to thoroughly review the document. I would like to say that I'm a long-time Skamania County resident and I'm in full support of this project.

CHAIR LUCE: Thank you, sir, appreciate that. Written comments will be accepted until July 19.

Dr. Drach.

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COMMENTS BY TOM DRACH

Yes, Drach. Before I begin a point of order. Last night you were accepting people to waive their time and allocate it to others. Is that the policy tonight as well?

CHAIR LUCE: Yes.

MR. DRACH: If so, Vicky Price has indicated that she's willing to advocate her time.

CHAIR LUCE: Okay. I'm checking off Vicky and you're up and you've got six minutes.

MR. DRACH: Thank You. Good evening, Councilors. My name is Tom Drach, spelled D-r-a-c-h. I'm here representing a nonprofit organization called Save our Scenic Area. Our mailing address is [redacted] Underwood, Washington 98651.

SOSA as we have been known to be called is a nonprofit that's been formed to have a voice for concerned local citizens regarding this project.

There's a few clarifications I would like to start out with in terms of hearing other people's testimony, and I recall Paul Pearce the first speaker tonight had indicated some letters that were going back and forth between some of our U.S. congressmen and senators and state representatives to the U.S. Forest Service in requesting some out of jurisdiction redaction of sort. And you should be aware that there was a response from the U.S. Forest Service that

I'm aware of going back to at least one of those individuals reasserting their belief that it was their duty and responsibility to comment on this project and notify your group of what they felt was a concern to them. And, of course, we'll be filing extensive written comments at the end before the deadline occurs in July for the DEIS.

Rex Johnston the Klickitat Commissioner, the first speaker from last night, I think erroneously indicated that EFSEC has no conditioning authority over issues of scenic area concerns, and I think he may have been intending to say that the Gorge Commission has no authority to place restrictions on the project outside of the scenic area. But I'd like to encourage you to consider the fact that your group could have authority to impose conditions which not necessarily impact the scenic area, but the view shed analysis that in fact impacts people and economy, etc. etc.

Okay. Getting onto specific comments regarding the DEIS, the transportation plan is unclear about the road transportation component on Cook Underwood Road proper when the large loads are going up and down the hill. It's my understanding that these things are extremely large and would probably require a closure of the opposing direction traffic, and, if so, there should be some indication to the local people what that will mean in terms of emergency services and bypasses and precautions to allow emergency

situations to pass, etc.

In terms of the soil stability analysis, there is a convenient assertion that the landslide hazards and other slope instabilities as identified by the local governing body is the only requirement to list in terms of the DEIS, and I would like to note that Skamania County has failed to comply with the critical areas ordinance that has been mandated by the state upon this county, and it delayed that process. I can't speak to the exact time frame, but it's at least in excess of two to three years. They're just getting to it now so it's very possible that particular areas of concern are not noted because they haven't been legislatively acted on on a local basis.

There is a DNR FPA, Department of Natural Resources Forest Practices Application number which I have which we will be submitting in our comments. That does indicate in the A-1 through 7 portion on the eastern slope unstable slopes, high erosion potential, and a high mass wasting potential, and there's a portion of that area that was not logged intentionally because of concerns about stability. So we just want the Council to be aware that you may not be capturing all the important data just by looking at the actions of the local legislative body.

Okay. The issue of alternatives I think is dramatically insufficient in the case of this DEIS. The

applicant has for the most part said we need 70 megawatts or we can't do the project, and there is no place else to do it and we have to have absolutely every array that we've proposed. And I think that's disingenuous to the process and contrary to SEPA to allow that to stand. I think there needs to be a really hard look at saying this applicant has 70,000 plus acres of land in ownership. I find it hard to believe that they can't come up with at least some viable alternatives to compare this application to.

My suggestion including a viable alternative is to say, "Hey, look. The maximum capacity of turbines today is 2.5 megawatts. If you did that 70 megawatts, that's 30 turbines. You could eliminate the first 11, A-1 through 11 on this whole procedure and get this project back far enough from the scenic area that a lot of the public's concerns will be mitigated because of that." It's certainly not going to eliminate all the concerns that people have of this project, but that's a very good start that the applicant has not seemed to be interested in, and there should be a justification why that can't occur since that seemingly on the surface seems viable. What is the time like?

MR. POSNER: Time is up.

MR. DRACH: Okay. Perfect. I'll finish here. Thank you.

CHAIR LUCE: Thank you so much for your comments.

Appreciate the specificity of your comments to the Draft Environmental Impact Statement.

Bob Anderson followed by Wilbur Slockish and David Teitzel.

COMMENTS BY BOB ANDERSON

Hi, my name is Bob Anderson, [redacted] in Skamania County, A-n-d-e-r-s-o-n.

I would like to go on record as agreeing with speakers one, two, and three -- Mr. Pearce, Ms. Leuders, and Mr. L'Hommedieu -- with the addition of the support of the project as an important puzzle or piece of the puzzle economically to help our families thrive in the county. Thank you very much.

CHAIR LUCE: Thank you, sir.

Mr. Slockish.

COMMENTS BY WILBUR SLOCKISH

First of all, I'd like to say that I support the project because this is the only one that I've ever seen and heard of that doesn't use water. Nuclear power, gas plants, coal fire plants use a lot of water.

CHAIR LUCE: Could you give the court reporter the full spelling of your name and your address.

MR. SLOCKISH: Okay. Wilbur Slockish, S-l-o-c-k-i-s-h, [redacted] Wishram.

CHAIR LUCE: Okay. We'll start over. All right.

Go ahead. You don't want to talk about nuclear.

MR. SLOCKISH: It's no good.

CHAIR LUCE: Okay. Got that down.

MR. SLOCKISH: Because the waste that it generates comes from our lands, and they don't clean it up very good. It's a health hazard. So I support this wind because of no water usage.

And I have a letter here that I would like to read to Andrew Montano from Harry Smiskin, Chairman of Yakama Nation Tribal Council, June 15, 2010. Subject: Whistling Ridge Energy Project: I, the Chairman of the Yakama Nation Tribal Council, am requesting a continuance of 30 days to review and comment on the Whistling Ridge Energy Project. My staff and I have not had the chance to meet on this important matter, and we would like to provide you with our input.

So they want 30 days of consultation with you and I was directed by them, the Tribal Council, to say that any documents that have been submitted by the cultural resource project are unofficial because they have not been reviewed by the entire Tribal Council. And Harry Smiskin and Lavina Washine want a written response from you on this 30-day consultation process.

CHAIR LUCE: Thank you, Mr. Slockish. I appreciate your comments.

David Teitzel followed by Chief Johnny Jackson.

COMMENTS BY DAVID TEITZEL

Hi, I'm David Teitzel, T-e-i-t-z-e-l, Carson, Washington. I'd like to speak in favor of this wind turbine project on Whistling Ridge. I would like to thank this Council for all the time and effort that they're going to take in getting this put together listening to all these comments and all the reading that they're going to have to do going through this environmental study.

I'd also like to thank BPA for the comments that they already came up with and looking over the environmental study.

The main importance for Skamania, one of the main importance is, of course, the economic advantages of this in this county. Another one, of course, is the company that's doing this. It's not some outside company. It's not some outfit from some foreign county or some other part of the United States. It's a company home grown right here in Skamania.

Broughton Lumber Company has been in existence over 90 years in Skamania County being a good steward to the land that we have, and that's one of the reasons you have a scenic area here is because of the stewardship that Broughton and SDS has provided. SDS has been here nearly 65 years, long before this ever became a scenic area. If

they hadn't been good stewards of this land there wouldn't be the scenic portion that we have like they and other timber companies, private ownership on the Washington side of this river. For some reason they felt the government has stepped in and have done just about everything they can to squash Skamania. Here is a project that can help remedy this situation. It's very important. Thank you.

CHAIR LUCE: Thank you, sir, appreciate your comments.

Mr. Jackson.

COMMENTS BY JOHNNY JACKSON

Good afternoon. My name is Chief Johnny Jackson, J-a-c-k-s-o-n. First of all, I want to say that I fully support this wind power project because I think it's highly needed at what I've been looking at and watched, that I watch on the news.

One thing that I'd like to say I don't agree with the people going and interfering and telling people what they can do on their property. It's never been done before, but it's starting to. I'm hearing it done now, especially people that don't live along this river here in this area. And I've heard a lot of things said about what happens when these wind towers are up in the air, and I have made a study of my own by traveling up toward Dufur around that area where those wind towers are, and I went up to Goldendale.

I've gone down through the area where these wind towers are, and I've parked there and watched and seen these happen that they were talking about.

And they said that it is a great harm to the bird life, the bird areas. Well, when I went up in there, I made two trips up there and studied by parking there and watching and see what that is going to happen. When I parked there and watched, I've seen the buzzards circling above the wind towers and they're even turning, and those buzzards never came near them wind towers. They flew over them, they flew around them, and they drifted off. Also, the crows, I've watched the crows fly around there, and they go around the wind towers. They don't go through them, and this here I don't understand why people can make these kind of accusations on something that they're not really sure of.

So I'm bringing this out to let you know that I don't think there's anything wrong with these wind towers being up there, and where these wind towers are going to be they're not going to be bothering anybody.

No sound. I'm never heard no sound when I was up under these towers, and I never heard nothing or seen anything.

So this is my comment to let you guys know what I feel about this wind farm. I'd rather have that than have anything else like coal burning generators or any of these

others or the nuclear waste. When they produce this nuclear waste to operate these generators, then the waste they go and they dump it on some poor communities or some people that don't want it, but they put it there anyway. So that's my comments.

CHAIR LUCE: Thank you, sir. I appreciate your comments.

Marfa Scheratski followed by Wally Stevenson.

MR. STEVENSON: I'm Wally Stevenson. I'm going to pass.

CHAIR LUCE: Thank you, sir.

COMMENTS BY MARFA SCHERATSKI

Hi, I'm Marfa Scheratski from Bonneville Hot Springs. I'm the general manager.

CHAIR LUCE: Could you speak up just a little.

MS. SCHERATSKI: S-c-h-e-r-a-t-s-k-i. I just want to --

CHAIR LUCE: You're representing?

MS. SCHERATSKI: Bonneville Hot Springs, tourism. Address is [redacted] I just wanted to say that we're in support of this. As it turns out there aren't that many other alternatives, and within this county especially there just doesn't seems to be very many other stimulus packages. So I think this would be a great stimulus for the economy. It will give a lot more

jobs that people are definitely in need right now, and we're familiar with the different alternatives to energy because our resort is run by geothermal.

We've had nothing but good news come from a lot of our guests. So as far as being aesthetically pleasing or not, I think it's in the eye of the beholder. Some people will look at it and say it's the most beautiful thing they've seen, and then there will be others who no matter whatever they look at they will see something wrong with it.

On the most part there are pros and cons to everything and we just wanted to put our two cents and say on the most part I think there's a little more good that will come of this than bad, and I agree with a lot of the stuff that the previous speakers have said in terms of need and support. Thank you.

CHAIR LUCE: Thank you very much. Dan Spatz followed by Adrian Bradford followed by Rick Taylor.

COMMENTS BY DAN SPATZ

Good evening. My name is Dan Spatz, S-p-a-t-z, and I reside at [redacted] The Dalles. I've lived in the Columbia Gorge since 1967. Although I've held certain official capacities, I'm speaking tonight solely as a private individual. I'm a landowner and taxpayer in The Dalles and also in the Snowden area of Klickitat County where my property looks toward the Whistling Ridge Project

location.

I'm here to speak in favor of this project for two reasons. First, global climate change is a reality and renewable energy is part of the solution. As a society we seek to reduce our carbon footprint; yet we often oppose new sources of energy necessary to achieve that goal. If we are to maintain our current standard of living, we will need radically different alternatives to fossil fuels on a grand scale, whether this means wind, solar, geothermal, tidal wave or most likely a combination of all the above in concert with energy efficient design.

We build out wind energy in more remote locations and we inevitably in fact need to develop wind power closer to places where people already live such as the proposed project location. I submit that these wind turbines, the proposed turbines are far more attractive than strip coal or tar sands or drilling in the Gulf of Mexico. Wind energy is clean energy, renewable energy, and thus we should support it for that reason alone.

Second, I object to the contention that proximity to the National Scenic Area should prove a barrier to this project. The project is located outside of the scenic area boundaries as other speakers noted. The intent of Congress was to enhance economic development and protect the environment within the Columbia Gorge.

While we still face the need to precisely define certain scenic area boundaries and achieve the necessary mechanism for modifying those boundaries over time, the intent of Congress was not to restrict development within the current boundary. This principle has been demonstrated in Klickitat and Sherman counties where wind farms have been constructed which are visible from within the National Scenic Area. And I think that's a key point for your consideration here. That's a precedent, and I would encourage you to follow that precedent. So I think that probably concludes my key points. Thank you.

CHAIR LUCE: Thank you, appreciate your comments. Adrian Bradford.

MR. BRADFORD: I'm going to pass and submit our support in writing.

CHAIR LUCE: Thank you, appreciate that.

The next speaker is Rick Till.

COMMENTS BY RICK TILL

Rick Till on behalf of Friends of the Columbia Gorge. Our address is [redacted], Portland, Oregon 97204.

I wanted to focus on some aspects of the DEIS relating to the no-action alternative and our regional energy system. Throughout the DEIS the applicant presents a false choice between building Whistling Ridge on the one

hand and continued reliance on fossil fuel generation on the other hand. For example, on page 3-21 while analyzing impacts to air quality, the DEIS includes this statement: If the no-action alternative is selected the growing electricity needs of the region would continue to be met through a combination of other renewable energy development and a combination of additional fossil fuels. The last part of that sentence is not supported by any evidence, and in fact, it's patently wrong. If the project isn't built our growing electricity needs will be met through conservation, efficiency, and new clean energy development.

The DEIS needs to be revised to reflect this reality. The evidence for that is substantial. Recently the Northwest Power Planning Council adopted its sixth power plan. In that plan it calls for meeting new demand with 85 percent of new demand with conservation and efficiency measures. The rest of new demand will be met through new renewables. Whistling Ridge is not critical to meeting that demand. We have evidence of that as well.

There's the Bright Future report which I will be submitting for the record. Here's a cover just for you guys to see what the front looks like. But the report is prepared by the Northwest Energy Coalition and it forecasts energy supply and how we're going to meet that energy demand and how we're going to meet that up to 2050. It includes

factors in loss of Boardman Power Plant so dropping coal, no new nukes, and taking the measures necessary to protect and resource wild salmon runs. That study projects forecast needs of 25,000 average megawatts by 2050. They also analyze the potential energy supply that we have for clean new renewables, and they forecast that at 80,000 average megawatts. So our projected need is about one foot. Our supply is about four feet. We have plenty of surplus potential to develop. Whistling Ridge doesn't need to be built to meet the forecasted need for renewable energy resources.

Since I have a couple seconds left I think I want to point out that the Park Service also responded to the letters from the elected representatives. They also concluded that under NEPA that they're required to consult. It's their obligation as far as the environmental review process to provide some input, and similarly SEPA requires that EFSEC consult with agencies with expertise and the resources that are being affected. You did so. You solicited the Forest Services comment. You need to take that into consideration. Thank you very much.

CHAIR LUCE: Thank you, sir. Ben Bliss followed by Paul Smith followed by Steve Jones.

COMMENTS BY BEN BLISS

Good evening, Ladies and Gentlemen. My name is

Ben Bliss. I am a third generation resident here. My grandfather worked at the dam for the BPA. My father worked in the timber industry on SDS land. I myself am currently enrolled in the Northwest Renewable Energy Institute in Vancouver, Washington pursuing a career in the wind industry. I'm represented here this evening by several of my schoolmates, if you'd like to stand respectively. They're all here in support of this project.

Though I could speak endlessly on this topic because I'm very passionate, I will be very brief. I chose to speak tonight on the issue regarding the fatalities of bats and birds. The migratory birds have been historically effective at circumnavigating these wind farms, and we've known that for many generations. What we have now is the issue of bats, and I can tell you extensive research is being carried out now and it's as simple as reducing the times in which we're running these farms.

Bats being very small creatures cannot fly in high wind speeds which are favorable to these wind turbines; thus they're going to be operating at different times. Many farms throughout the nation and globally have compromised with the wildlife and the bats especially. In many places these fatalities have been reduced up to 60 percent simply by compromising when these turbines will be operating and when they will not be.

Another very effective science that is being researched right now is the use of radar which has reduced fatality from 40 to 60 percent in many locations which will be applied soon in the new future. Thank you, Ladies and Gentlemen.

CHAIR LUCE: Thank you so much.

Mr. Smith, Paul Smith.

COMMENTS BY PAUL SMITH

Hello, my name is Paul Smith, and I live at [redacted], Washougal, Washington at the west end of the county. Thanks for the opportunity to speak tonight.

I am opposed to this project as it is written. It's hard for me to believe that the parties who are responsible for drafting this DEIS can be objective and impartial to this proposal. Nothing personal.

EFSEC is an agency known for siting energy facilities, and the BPA is an agency which deals with power generation and the distribution of that power. It is your duty to be objective in this matter.

This EIS is insufficient in that an appropriate EIS has a list of alternatives. This one only states one action item and mentions throughout the document that it is one of the alternatives. How can the proposed action also be an alternative? The only alternative stated is the no-action alternative. The applicant states that he cannot

go below 70 megawatts and is trying to disguise this unwillingness to minimize this project by saying that public utilities seeking to fulfill their RPS requirements need a minimum of this kind of output "to be attractive".

In one area it states that the project has to be defined as an integrated whole to be worthwhile; yet in the design mitigation measure under biological resources it states, "Micro siting of turbines and associated facilities would allow any sensitive resources discovered during construction to be avoided." You can't have it both ways.

Page 1-7 states, "No other federal agencies have been identified as cooperating agencies for this EIS at this time." Cooperating, hmmm? Is that because National Parks Service and the Forest Service have made concern negative comments about this proposal as it is now written? Also why have the Yakama Nation not been involved in this DEIS when they as a sovereign nation have legitimate cultural resource concerns? Any EIS is required to ensure that there is no impact to cultural resources.

On page 1-8 it states that other federal, state, or local agencies also may have permitting or approval authority for the proposed program. Those agencies may use this EIS in order to fulfill NEPA and SEPA and responsibilities. Those agencies have an obligation to the public to do their own due diligence and evaluations, not

the kind of proponents potential bias data.

This EIS states that the BPA substation would cover 4.25 acres and be sufficient for future installation of equipment if required for future development. What kind of future development? 50 more wind turbines? I am concerned with scope treaty. With the national and state mandates on going green, I can see how once they are in it would be much easier to expand the number of turbines. I don't want to see this project look like the Klickitat projects. People come from all over the world to enjoy the majestic natural vistas the Columbia River Gorge has to offer, not manmade ones. I don't think very many people would like to see wind turbines at Yosemite, Yellowstone, or the Grand Canyon. Neither should they at the National Scenic Area, one of only two in the whole United States of America?

This EIS is globally insufficient in the evaluations of wildlife. It does a poor job of covering bat evaluations, lacks significant bird-bat dispersal data, and has no mention of large animal. It is so bold as to state, "For potential impacts of big game species, deer and elk, coordination with WDFW will occur if appropriate. It is a no warning ground for elk."

Also what about cougar, bobcat, and coyotes and other game? It states that it will convene a technical

advisory committee to evaluate mitigation and monitoring programs for the impact to wildlife and habitat. Why is that not already in place? So this project is proposed at the right time in our local and national energy needs, but it's placed in the wrong place. The Space Needle is around 605 feet tall. These turbines could be 426 feet tall. There is no way this project could be defined visually subordinate. If I want to see the Space Needle which also has a blinking red light on top I will go to Seattle. I don't want to see 50 Space Needles from key viewing areas in the Columbia River Gorge. Thank you.

CHAIR LUCE: Thank you. Can you provide those written comments you just gave us to our staff, to Tammy.

MR. SMITH: Sure. It's a little bit marked up.

CHAIR LUCE: All right. That's fine. Thank you, Mr. Smith.

Sallie.

COMMENTS BY SALLIE T. JONES

Sallie T. Jones, [redacted] Washougal, Washington, west end of Skamania County. Regardless of the opinions regarding this proposed project, there must be unbiased objective documents that permit public access to information and divide decision makers to their tasks as well. I don't really think this document is satisfactory in that respect. I think -- that's all I'll say for now.

Item 1, I wanted to mention during a brief review of the document, I was startled the appearance throughout a distinct bias that had to do with the business needs of the applicant. Right off the bat in Section 1.2.33 a discourse of almost a few pages of text dealt with the business needs. I don't think that's an appropriate discussion to have in any EIS document, and the only information in that section that I thought was relevant was the portion that mentioned the amount of construction jobs. It didn't say temporary construction jobs that would be provided by the project, and the small amount of permanent jobs generated. I guess that's about all on that subject.

I had Item 2. In view of the fact that no studies have been conducted in the United States that determine what effect wind turbines have on forest dwelling species of wildlife, it seems somewhat inappropriate and misleading to simply state over and over again as it does in some of the concluding statements that no impacts are anticipated. Some of the comments to that were stacked are nebulous, inaccurate, or contradictory information included in the appendices or in the text proceeding it, and that's part of why I was disappointed in this document. It seems though the attention to detail is not very good, nor very thorough.

Page 377 confidently states that operation of the project would result in no further impacts to habitat on the

project site despite a statement on page 381 that quote, "Because impact to big game as a result of the wind project operation is limited it is difficult to predict the impacts of the proposed project on wildlife using priority habitat on the proposed project site."

More research data on human health in connection with wind turbines is more available than it has ever been before, and another person has made a good study in compilation of that which I think you heard yesterday evening in Underwood so I won't make anymore comment on that.

Geologic and soils information is troubling for anyone who has seen the proposed project site which is pretty steep, and this project proposes to disturb a great deal of that. Construction would require blasting, removal of soil. And blasting can disturb fragile habitats not necessarily at the time, but in future times and in long periods of time as well. The soil types present are unstable and probably even the plan mitigation -- am I done? Oh, okay. Thank you. I will submit the rest of my comments.

CHAIR LUCE: Please. Thank you very much.

Mr. Kahn.

COMMENTS BY GARY KAHN

Thank you, Mr. Chair, and Members of the Council.

My name is Gary Kahn. My address is [redacted] Portland, 97286. Kahn is spelled K-a-h-n, and I represent Friends of the Columbia Gorge.

Initially I'd like to say that we support Mr. Slockish's request for additional time to review the EIS. The document is very thick. We've had three weeks between its issuance and today. It's simply not enough time for people to review it and offer public comments. We also request there be an additional public hearing later on in the process after people have had a full opportunity to review the EIS.

Although we've had only three weeks, we've already noted a number of major flaws in the EIS, and I would like to talk about two of them today. At page 3-194 the DEIS says, "During scoping some commenters expressed concern that project operation would impact the scenic area adversely since turbines would be visible from some key viewing areas inside the scenic area. Analysis of the key viewing areas and viewpoints within the scenic area were sought and analyzed. The presence of the project would cause low to moderate visual impact to viewpoints within the scenic area."

There's several problems with this. First, the reference to some commenters is simply unfair and wrong. Hundreds of commenters raised the concerns about the scenic

impacts. During scoping 92 percent of the written comments were opposed or had concerns about scenic impacts. Most of them raised this issue. We searched the entire DEIS electronically and this is the only instance where the phrase some commenters is used. The EIS should be very accurate and make it clear that it is most commenters that have raised this concern.

Secondly, there have been no analysis of the impacts from a number of the key viewing areas and viewpoints within the scenic area. These include Mitchell Point along the Historic Columbia River Highway which is an important recreational trailhead. There's a process ongoing to restore the scenic highway in that area and create windows in the walls like there is outside of the Hood River. The views from the restored tunnel along this trail would look directly at this project.

There is no analysis of the impacts from the Columbia River, another key viewing area. No analysis of the impacts of State Routes 141 and 14 in Washington or Oregon Highway 35 or Tom McCaw Point or Panorama Point in Oregon which was noted in a letter of May 6, 2009 by Daniel Harkenrider, the scenic area manager of the Forest Service.

In addition, there should be analysis of the impacts visible from the Buck Creek Trail to Nestor Peak which is due north of the project area. Although this is

outside the scenic area it's an important viewpoint and the impacts to this view should be considered. The view of Mount Hood from this area would be blocked by wind turbines.

The second issue I'd like to address is the reasonable range of alternatives. NEPA and SEPA require two major points with respect to alternatives. One, there be a reasonable range of alternatives considered; two, that each reasonable alternative be rigorously explored and objectively evaluated. In this DEIS we have two alternatives: one the project, one no action. This flies in the face of NEPA and SEPA requirements, and we believe additional alternatives must be analyzed in either a supplemental DEIS or a new DEIS. It's the only way you can comply with these two laws. Thank you for the opportunity to comment.

CHAIR LUCE: Thank you, Mr. Kahn, appreciate your comments.

MR. SLOCKISH: Mr. Luce, I want to clarify. I did not say that. I said consultation. I did not say extend the comment period for everybody, just the Tribal Government with respective to him.

CHAIR LUCE: You're talking about government to government.

MR. SLOCKISH: Yes.

CHAIR LUCE: All right. Thank you.

MR. KAHN: If I mischaracterized his comments, I apologize.

CHAIR LUCE: I'm sure that no harm no foul.

Loreley Brach followed by David Bennett followed Harold Gailey.

COMMENTS BY LORELEY BRACH

Thank you very much. My name is Loreley Brach, and I live in Underwood, Washington. My address is [redacted] I am here today to speak about something a little different. Thank you again for letting me speak up.

I'm here today to speak about the data collection in here. You allowed the applicant to hire their own consultants and collect this data, and I'm going to relay a little story to you about some experience I had when I worked for the government, and I worked for a number of different agencies, state, federal doing research. And I was involved in a project.

It was a two-year project, and before I left to start a family I completed the whole results, the analysis, everything, turned it in, and never got -- I was the primary author and never got another chance to look at it afterwards. And after some time I went on line and found this document and it was very interesting. A two-year study a large portion of it was missing out of the first year. So I called up the people and I said, "What was wrong? Was

there something wrong with my analysis that would cause this?" And the answer was, "We did not agree with the results." That's with the government.

Now what do you think a private consultant whose bread and butter is to produce some product for these companies, what do you think they would do to keep their business, their jobs? I really have to question this. These people shouldn't be doing this study for the people to come up with the answers the right ones, ones we can trust. So please I don't agree with this. I'm not even sure if this is allowed by NEPA. If it is, please put it in the document what laws allow this. I would really like to see this. I would like the justification for this. If I'm confused, I'm sure there's a lot of other people.

As far as new bat technology, we've been trying to send man to outer space and find other planets to live on. Wind turbines are basically like an airplane blade. You've got to lift, you've got a low pressure zone. I don't see how the technology mentioned really exists or would function in that capacity, and I would like to see the research on that.

As far as the economics of this county, you probably noticed that there has been a lot of construction going on. I personally and along with a lot of other people do not believe that this once very wealthy county is really

struggling that hard. I think it's a spending problem. It is not a financial problem. We're going to have to come back to what all the other counties have been dealing with more for many years, and that's trying to juggle and find priorities. Skamania County was very wealthy. We have to enter this new reality. Thank you.

CHAIR LUCE: Thank you.

Mr. Bennett.

COMMENTS BY DAVID BENNETT

Good evening. My name is David Bennett, B-e-n-n-e-t-t, [redacted], Carson, Washington. I think I'm coming from an advocate's position on this matter, but I think everybody is right in the fact that everybody is going to be impacted. If we do nothing, we're impacted economically, socially, jobs, whatever. If the project goes in, there's going to be some impact on the environment to some degree. Your job is find to that balance and hopefully make sure that the data and the science is such that the risks are minimal.

But we do need to make some changes. We have to have power or we have to change our ways entirely. We do need jobs. We do need tax bases or we have to start floating bond levies. The job is to find some kind of balance, and I'm not exactly sure how you're going to do that because everybody comes from a very emotional position

on this matter. Pro or con, that's it.

So I am an advocate for the project. I would like to see it go in for a lot of reasons. It would help balance out a lot of economic things, social things, jobs, and somewhere along the line we're going to have to figure out how to get along because the Gorge belongs to all of us. It's where we live. It's where we make our living, and I'm glad that people on the outside are wanting to defend the beauty of what we have. Again, we've got to find that balance. Thanks.

CHAIR LUCE: Thank you, appreciate your comments.

Harold Gailey followed by Peter Cornelison.

COMMENTS BY HAROLD GAILEY

Yes, my name is Harold Gailey. I came prepared to support the project, but in view of time I think I'll just submit written comments.

CHAIR LUCE: Thank you, appreciate that.

Mr. Cornelison.

COMMENTS BY PETER CORNELISON

I'm going to start by giving you something to look at.

Hello again. My name is Peter Cornelison. I live at [redacted], Hood River, Oregon 97031. I am going to repeat myself on one point tonight. That is please give us another chance at this time. Three weeks to review

1,500 pages of technical material is totally inadequate. Please give us another hearing.

Point 2, this is something that locals, it sort of takes local knowledge to know this, but in Hood River and in Washington there's typically when there's storming from the coast they stop kind of on the ridge line here as you can see and forms a pretty substantial cloud layer. Now oftentimes that cloud layer is right behind Underwood Mountain where these turbines are proposed. My question is what would the impact be on birds and aviation if you don't see these things taller than the tallest building in Portland? That to my knowledge is not covered in the EIS.

Point 3, it was stated earlier that a precedent has been set. Turbines can be seen from inside the National Scenic Area area. True on the extreme eastern end from a great distance away. The fact that I talked to you about last night was that turbines, a turbine project that was going to be right on the boundary of the scenic area has been stopped, defeated. This was the one at 7 Mile Hill between The Dalles and Mosier.

This will be the first turbine project just outside the boundary of the scenic area and essentially it flouts the intention of the drafters of the Scenic Act. It also would have a major impact on Hood River which derives at least one-third of its business from tourist economy.

If you've driven to Goldendale and seen the impact of those turbines up close, the blades spinning, they draw your eye. That's not what people come to Hood River and Washington to experience. If they want that, they can drive another hour to Goldendale. I know you probably don't have to consider Hood River in your impact, it's Oregon, but I ask out of fairness that you do. Thank you.

CHAIR LUCE: Thank you, appreciate your comments.

Jill Barker followed by Charles Pace and Rob Gilchrist.

COMMENTS BY JILL BARKER

Good evening. I'm Jill Barker and I live in Mosier, Oregon, and I'm speaking for the Columbia Gorge Audubon Society tonight.

Whistling Ridge is not so much about renewable energy development. We all support renewable energy future for our nation, but this simply is the wrong project at the wrong place at the wrong time. The Condit Dam on the White Salmon is going to be removed. Day after day the Condit Dam churns out 8 to 10 megawatts of power, almost of the firm power Whistling Ridge would produce. Should we rethink a facility's removal? No, because it's been determined that salmon recovery is a higher priority than renewable energy from the White Salmon River.

So it is with the Columbia Gorge. The Gorge was

set aside by Congress as a special place to be preserved and protected for all future generations. No one anticipated the abomination of 500-foot gleaming white towers with rotating blades being located on ridges just outside the National Scenic Area boundaries; otherwise, the lines would have been drawn up differently.

If this proposal is permitted along with other proposals in the east Gorge, the iconic landscapes the Scenic Act purports to protect will become subordinate by day to giant towers with rolling blades and by night to flashing red lights. If the Whistling Ridge project is permitted, then it will be time to ask Congress to redraw the boundaries of the scenic area. The incongruity of industrial wind energy projects up and down the Gorge on ridge tops just beyond the scenic area boundary scene flies in the face of the very intent of the Scenic Act itself.

A cheerleading flyer sent out by the project proponent asserts that in a single year Whistling Ridge will displace X barrels of oil, X tons of CO2, and X numbers of cars on the road. This is a cruel hoax. Where is the evidence for such an assertion? In fact, for every megawatt of wind energy developed an offset of fossil fuel fired megawatts has to be developed as wind energy's unpredictability fee stabilizes the electrical grid, and this comes from the Northwest Power Planning Council's own

words.

With a verging population, negative consumerism, and Wall Street driven cowboy economy, we'll need every barrel of oil, every ton of coal, every cubic foot of gas to keep the economy humming. The best evidence we have for this is the Gulf Oil volcano. Even though the Gulf Coast is a wash of oil threatening their very way of life elected officials have lined up to demand that the moratorium on deep water oil drilling be lifted so that business can go on as usual. Moreover Whistling Ridge developer SDS and its partners were paid 20 million dollars in public money by BPA to not develop a gas fired plant project in Bingen. Where is the concern by SDS for CO2 emissions then? The flyer further asserts there will be no harm to wildlife populations. Can I continue?

CHAIR LUCE: Wrap it up, but go ahead.

MS. BARKER: There will be no harm to wildlife population. This is also a hoax. The raptor mortality from wind energy projects developed in Klickitat County is ten times what the EIS predicted, and there's an article by Kathy Durbin in the Columbia minutes states that. What went so terribly wrong? Columbia Gorge Audubon releases the cozy relationship between the project proponents and the EIS preparers is what went wrong. Getting a permit opens the spickets to fat state and federal subsidies without which

projects like Whistling Ridge would be unprofitable to develop.

CHAIR LUCE: Thank you so much. You will leave comments hopefully with staff?

MS. BARKER: My husband was going to speak and he'd defer his time to me to finish this.

CHAIR LUCE: Your husband is listed as a speaker?

MS. BARKER: You signed in?

I think he signed in.

CHAIR LUCE: All right. Go ahead.

MS. BARKER: By comparison wind energy industry makes much of birds killed by plate glass windows, cats, and vehicle grills. But how many eagles or falcons or hawks are killed by these objects? Wind energy is very selective in its bird mortality, and raptors are some of the most threatened bird populations. I would not want to be a raptor trying to negotiate the mid Columbia landscape these days, would you? The U.S. Fish and Wildlife service wants to reintroduce the California Condor to its former range in the Gorge. What a joke.

At an initial hearing before EFSEC on Whistling Ridge Wally Stevenson the owner of SDS states that his company has always tried to do the right thing. Columbia Gorge Audubon assumes that this was said to help persuade EFSEC to render a decision favorable to Whistling Ridge. We

would like to balance the record with this.

Concurrent with establishing a National Scenic Area, Congress designated the lower White Salmon River under the National Wild Scenic River Act. The management area boundary included some SDS property, including lands along Spring Creek and critical areas of salmon spawning once they are reintroduced. The Forest Service offered SDS a land exchange so these lands would not be logged and the values for which the river was designated could be preserved. Apparently SDS was unable to get above the appraised values for their land so the company cut the forest down to include Spring Creek and other areas where hiking trails and picnic areas were planned. Now we ask you was that the right thing to do?

Lastly, the Northwest is not short, not short on renewable energy. It's conveniently overlooked by the industrial wind energy proponents, but 10,000 megawatts of high quality renewable energy is churned out daily by the Columbia River Hydro System, and it's come at a high price. Saliva Falls once the Northwest cultural and natural history icon is gone, and the world's greatest natural salmon fishery has been driven to near extinction. The sprawling industrial swathe of wind turbines now stretches along both sides of the Columbia from Maryhill to Walla Walla. These Columbia River landscapes of Lewis and Clark and the Oregon

Trail have been disfigured and no longer available to those who aspire to capture the spirit of those storied places.

It would seem that the Northwest are selling our souls, our incomparable landscapes to satisfy California's insatiable need for so-called green energy. So SDS and your sidekick Wind Works! Northwest don't tell us that now we need to deface the Columbia Gorge to chase a few more green megawatts. The region has paid its dues. The wind energy industry just like the dam builders will hound out every wind resource to erect their turbines because a pot of money in state and federal subsidies awaits a secured permit. It is up to thoughtful citizens to ensure that some areas are off limits. Prides of NIMBYism can be heard, but let us not be made to feel guilty by renewable energy wants and the wind energy industry and county commissioners who do their bidding for standing up to protect the last best places. We'll comment further on the DEIS.

CHAIR LUCE: Thank you very much, appreciate your comments.

Mr. Pace.

COMMENTS BY CHARLES PACE

Thank you. My name is Charles Pace. I live in North Bonneville. I'm a landowner.

CHAIR LUCE: You want to give us your address?

MR. PACE: [redacted]

I was going to focus on the weaknesses in the DEIS that I found, but the point is not to support or oppose but rather to strengthen the document, and it's not my -- Al, it's good to see you. I bet you didn't miss me as much as I missed you.

The 30-day extension that was requested is appropriate for government-to-government consultation I don't believe it's necessary or even going to contribute to the process to provide that for everyone. In terms of the socioeconomic impacts, I'm a professional economist by training. I find that the Draft EIS falls far short. You need to look at the two-county area. The benefits are significant, but they can't be assumed. You have to do a serious analysis. It has to have detail. In my opinion this is one of the draft's most significant weaknesses. I think it's been raised by either the City of White Salmon or it might have been Klickitat County they pointed that out, and it might have been in the Gorge proceedings. But anyway I remember reading that.

3.1.1 the affected environment needs to describe the social and economic baseline, and then from there look at the impacts in section 3.14. Right now that's on page 3-35. That's virtually uninformative. So you need to go in there and look at the benefits, the tax revenues, and also recognize that there are going to be impacts on the

community infrastructure, governmental services, and so on, but I think just my gut reaction there is that the benefits are going to be significant.

Other issues, public safety, global warming, the environmental compliance process also because you are doing a joint one you don't want to ignore BPA's process for interconnection, and I have a concern there because there are water impacts. There are project impacts below projects, and it has to do with the way that we integrate wind into the system. Those are issues that are larger, much larger than this project. For that reason I suggest that you bifurcate the interconnection aspect from the siting facility aspect so that the project can go forward there and not get hung up in questions about how we're going to integrate wind. I'll submit written comments, and it's good to see you again.

CHAIR LUCE: Thank you, Mr. Pace.

Rob Gilchrist.

COMMENTS BY ROB GILCHRIST

My name is Rob Gilchrist, G-i-l-c-h-r-i-s-t, and I live at [redacted] in Cook, and I have got a couple comments for tonight. My first big concern is the precedence that this project will set. You know, the visual impacts have looked at what this set of windmills will provide, but if this project is allowed to go forward, I

share the concerns with others tonight that more projects will be allowed and the National Scenic Area will be more heavily impacted than is what currently proposed.

I also find that I did not know that there's only two National Scenic Areas in the entire United States, and it seems like some of the comments in this proposal do not take into account that this is such a short resource for a nation. For example, looking at the housing prices the housing impact of windmills on housing prices was taken across the nation as a whole, and my guess is that in most of those locations housing prices are not largely based on the scenery that surrounds them. My other comment is that one of the main drives to do this is the economic impact, and there's no question that there will be a positive economic impact; however, I don't want the current economic state of our entire country to bias the decision today because certainly the impacts, the negative visual impacts will last much, much longer than our current poor economic state. That is it.

CHAIR LUCE: Thank you, sir.

Last person we have listed is Crumpacker, John Crumpacker.

COMMENTS BY JOHN CRUMPACKER

Good evening. My name is John Crumpacker. My address is [redacted], Underwood, Washington, and I'm here

tonight on behalf of the Skamania Agri-Tourism Association. We're a group of basically businesses that are directly impacted by the project in Underwood, and our position on the project is that we actually support the project. We support it on the condition that it be reconfigured, and that was rejected in the Draft Environmental Impact Statement as not possible so that's what I wanted to address.

We support the project on the condition that the seven southerly most A towers which I think are 1 through 7 be moved back into the project, and it seems based on most of what's been done both by the applicant and what we've heard from other folks is that those towers probably represent the most significant visual impact of the entire project. So it's a pretty important issue to consider.

We basically feel that the conclusion in the Draft Environmental Impact Statement that it can't be reconfigured because it's not economically viable other than as proposed isn't actually the case, and one of the significant issues that you could address in the Draft and the Final Environmental Impact Statement is whether the number of towers less than 50 could produce whatever this threshold is that's truly economically viable. So that's one thing that could be done, and it's really important that be considered and it's not. It's just rejected.

The other relates to whether all 50 towers are really necessary, and if you look at the Draft Environmental Impact Statement on 220 and 221, all the conclusions, all the facts that you have before you right now that it's viable only with the full 50 towers as configured with no micro siting or deletion of towers is from the applicant. So I wanted to read quickly a statement from the applicant, and this was made according to Jesse Burkhardt whose the reporter for the Enterprise Newspaper in White Salmon which is one of our local papers. And this statement was made by the president of SDS who's also the president of the Whistling Ridge project, and it was made actually in the room you were in yesterday in front of several hundred people and to quote, "Spadaro said that there would be a maximum of 44 turbines in the development proposal. Our project is 50 megawatts. That's very small in terms of energy development," Spadaro said. It goes on to say that another citizen learned that the energy project would not stop with only 44 turbines, but Spadaro countered that that was not true. Spadaro explained these 44 turbines were the limits to the project.

Well, at that point apparently it was economically viable was 44. Our position is that 7 turbines are at issue here. 50 minus must 44 is 6 turbines. Based on the words of the proponent of this project, you should definitely be

asking the Draft Environmental Impact Statement authors to include in the Environmental Impact Statement consideration for the reconfiguration of the project which was rejected. Thank you.

CHAIR LUCE: Thank you, sir. I appreciative your comments. That concludes the list of people -- well, it does conclude the list of people who signed in. Now if you would like to speak or if we have -- Tammy, do you have other people?

MS. TALBURT: I don't, but the lady in the scarf did sign in on the list.

CHAIR LUCE: Please come forward and give us your comments. I apologize for having overlooked you.

MS. REPAR: Thank you very much. Yes, I do remember signing the purple sheet.

CHAIR LUCE: All right.

COMMENTS BY MARY REPAR

Thank you very much for giving this opportunity to speak. My name is Mary Repar, R-e-p-a-r. I live [redacted], Stevenson, Washington 98648.

These are my preliminary comments and let me be blunt, Section 314, page 3264, these are about the cumulative impacts. There seems to be a lot of talk about cumulative impacts but no analyses. The basic refrain throughout the DEIS, especially on the cumulative impact

analysis section seems to be bad things happened in the past, bad things will happen in the present, and bad things will happen in the future, but there is no analysis of these bad things happening.

The NEPA process says you must use critical analysis in federal projects and this qualifies. I'm going to give you the CEQ's Handbook on considering cumulative effects under the National Environmental Policy Act, and in Table 5.3, page 56, for example, there are analyses for analyzing cumulative effects. For example, trend which would give you to assess the status of a resource, ecosystem and human community over time. It usually results in a graphical projection of past and future conditions. I didn't see that anywhere in the DEIS. Also there's no modeling which would address the cause and effect relationships. Where is it? Why aren't we seeing some of these true analyses with quantifying data? There is no environmental baseline data established. Where is the baseline data?

If you render cumulative analyses you need baseline. I want to see that baseline data. I did not see it in the cumulative impacts analysis section. This whole document actually I found it quite inadequate in the sections that I read, and cumulative impacts are my heart's thumping, causing my heart to thump when I read cumulative

analysis, and my heart wasn't thumping when I read this.

On page 3272, for example, the proponent states past and present line development, timber harvest, and agricultural uses have resulted in a cumulative significant change. Then at the end of this paragraph, well, our development of this proposed action would contribute incrementally. Okay. You had significant change. Now you're going to do incremental. Where is the quantifying data that would give you something to look forward to?

Also, I have carrying capacity has not been addressed at all. Where is the special economic impact analysis and social impact analysis for these documents? The CEQ's handbook covers all of that.

BPA question. Is this thing going to need a gas plant to supplement it? I've got a series of questions here. But how is BPA going to back the real and potential wind energy production from all of these wind farms?

And I'm also submitting three articles, newspaper articles, and one of them states that, let's see, 6,500 birds and more than 3,000 birds are annually killed by the wind power turbines currently operating in Oregon and Washington. And lastly, Increased Costs Are Blowing in the Wind by Todd Wynn and Eric Lowe, Cascade Commentaries or Cascade Policy Organization. Wind energy on the Pacific Northwest's electricity grid has increased substantially.

Often overlooked are the impact of increasing wind generation on the reliability and affordability of electricity that very well might outweigh any of the promised environmental benefits.

I will be submitting many, many, many, many, many more comments on this DEIS. Just I didn't have anymore time to do it. Again I would like to submit the handbook too for your consideration.

CHAIR LUCE: Thank you very much. I do apologize. I did overlook you and it was my error and submit the handbook. We do have a copy of it which we utilize, but we always can use an extra one.

Are there anymore comments this evening?

Yes.

COMMENTS BY AARON BABCOCK

I grew up here my whole life every summer. I live in Vancouver, Washington now. [redacted], [redacted] my number.

I support the wind farms. I believe the trees is what the major problem is because I believe in the future there will be wild fires if we don't fix the Ecology of the trees which will create a problem for the windmills. They're not thinned well. They're rotting away. I have hunted all through there, and there's plenty of birds because of all the worms that are laying around. So we

don't have to worry about the birds. It's about the jobs we have to worry or no one is going to be able to look at anything. We're all going to be up on the sidewalks. But I do security, I'm employed, but people that haven't been working for two years they need a job.

A basic remedy for false accusations about the wind turbines would be a security guard or forest ranger to oversee it. You have daily paperwork, court documents on observations, testing the metal, making sure it's durable, it's not aluminum. And if there's any birds going in, it could document it. It's all there right on site, and they could test it everyday, and it's just another job added to the wind turbines. And we could get some real good facts right from the security guard, court documented, and remedy all the paperwork of computers and all of that. Just hire security just to watch the turbines and check the paperwork over here, and it's all remedied.

And if the trees are growing good, you won't see the turbines very much because the trees will be growing again. But right now what I see is they're turning brown and they're falling apart. They don't thin them. They're just -- and animals are going away towards those wind farms because there's nothing to eat up there. It's drying out. They're coming down here by the Columbia River on private land. That's why there's hoards of elk and deer right on

the Columbia, you know.

They just destroyed the lumber industry because environmentalists came in with all their rules and killed jobs. All we need is some good Ecology, you know. Plant ten trees for one tree. Thin the forest so wind can get through there so they grow tall and that's pretty much all I want to say.

CHAIR LUCE: Thank you very much.

Anybody else? We've got another commenter. We've got two commenter.

COMMENTS BY BONNIE WHITE

Hi, I didn't plan on speaking here tonight, but if I don't I'm not going to be able to face my granddaughter.

CHAIR LUCE: Could you state your name, please.

MS. WHITE: My name is Bonnie White and I live in White Salmon. I grew up in Goldendale. I went to Goldendale High School. My mother was the county auditor, my father was the chief of police, and my grandmother was married to the grandson of the founder of Goldendale.

I have lived on the west end of Klickitat County for the past 34 years. I'm an artist. People pay me to paint images of the Gorge. I think I live in one of the most beautiful places in the world. Being raised in a political family I know how power and money speaks, and I think that's pretty evident here tonight. You know, it's

hard to get up when you have someone who is part of your own community and a major employer in the community and has long arms. It's hard to speak against them. You pay a price for it.

The issue here to me goes beyond whether wind power kills bats or birds or global warming. It's about defacing one of our national treasures. This isn't a national park. It's a national scenic area.

A couple weeks ago my family had a gathering in Goldendale, and I saw a cousin that I hadn't seen in a long time, and I am involved in a land trust and we own 160 acres out near Hawker Road where one of the wind power projects is. I asked her if she'd ride out with me to look at the project and see. Up until now I haven't had the guts to go out and see if you can really hear what it sounds like, what it really looks like, what it's really like to be there. And we drove out Hawker Road to an area called, a little road called Oaks Flat, and it was devastating. It was absolutely devastating.

We couldn't go any further because there was so much -- there were big rocks and mud in the road from the trucks coming in and out. The turbines totally own the landscape. It's like being in the twilight zone, and I'm not exaggerating. It's worse that I imagined. It's worse than I could have imagined. The sound is overwhelming.

They're huge.

I saw one kestrel in an area that I birded in, and I've counted dozens of raptors in that area. I saw one kestrel. I heard one meadowlark and I could barely hear it. At this time of year because of all the rain the landscape itself there were all kinds of wildflowers blooming all over, and around them were these huge metal objects that the sound it sounds like a continual airplane over you. It just sounds like an airplane, and each time the blades went around it sounded like a freeway, like freeway traffic. It didn't sound like a car. It sounds like freeway traffic. Just vroom, vroom. It was unbelievably devastating.

It owns the entire landscape, and, you know, all of these people talk about jobs. What about all the people who no longer have a job because of these turbines?

I got lost here. My cousin who just retired from a mill was sporting her new watch. She was really proud of it. She is very different than I am and she was just overwhelmed. She said they've destroyed the Gorge. They've destroyed the Gorge. This is, you know, this is the Columbia Gorge. They have destroyed it, and I was really surprised and I thought about that. And I thought about how we have this Columbia Gorge Scenic Area, and we think of the boundary of the Gorge, but the people come here and see it is the Columbia Gorge. We have destroyed most of the

Columbia Gorge.

And this is -- I'm asking you to have some sense. You know, sure, people are here for jobs. Some people are here because they get benefits by speaking out for this project, and those who speak against it have nothing to gain except possibly the hope of continuing to have a Columbia River Gorge in an area that is so precious to all of us, an area where my granddaughter will be able to paint, where Wally's daughter will be able to paint, you know. I just ask you to consider the Columbia Gorge. Thank you

CHAIR LUCE: Thank you very much for your comments. We have another commenter.

COMMENTS BY KELLEY BEAMER

Thanks. Good evening. My name is Kelley Beamer. I work with Friends of the Columbia Gorge, [redacted]. Thank you for the opportunity to comment this evening.

I'll be brief. I work as a conservation organizer for Friends and interact a lot with our membership that exceeds 5,000 in Oregon, Washington, and throughout the entire United States. As soon as we let our members know about the release of the Draft Environmental Impact Statement I started receiving calls, e-mails, and visits to the office with people who were frustrated with the amount of time. Again I'm reiterating something you've heard

already. But just based on my interactions with supporters and people who care deeply about getting involved with this process there was a lot of frustration. So I would reiterate the request to (a) extend the comment period and (b) to hold an additional public hearing.

I also want to address one part of this visual impact analysis involving the key viewing areas. The Draft Environmental Impact Statement looked at specific static points. There are specific key viewing areas such as the Historic Columbia River Highway I-84 that are entire stretches of the key viewing area, and I would ask that the analysis be shifted from just specific points on those to an analysis of what the experience is along that entire key viewing area I-84 or Historic Columbia Highway of Columbia River, for instance.

Lastly, I just want you to realize that the project that you are all spending this time reviewing and hearing comments about as you know is unlike any other project that has been proposed because of its proximity to a National Scenic Area. Congress has voted time and time again to recognize this area as an outstanding natural treasure that is valuable to our country. It did it when it voted to pass the National Scenic Area Act, when it passed the Ice Age Pledge National Geologic Trail just in 2008, the Lewis and Clark National Historic Trail, The Pacific Crest

National Scenic Trail. Those are just a few.

So the decision that you pass on to Governor Gregoire will impact future generations as it's been said. We hear time and time again about people's experience visiting the Gorge. This is a very, very special area that should be protected for future generations and a decision will impact future generations. Thank you for the opportunity to comment.

CHAIR LUCE: Thank you. Do we have any other comments? Going once, going twice?

All right. I think we've had all the commenters this evening. We do appreciate all of your coming here and the respect that you have shown each other. This is a very controversial issue in this community and in the state of Washington with respect to the siting of this project as many other projects are. We will carefully consider all of the comments we have heard orally. We will read and carefully consider all of the comments in writing. We are cognizant of the fact that some of you have asked for additional time.

I want to take this opportunity to thank staff, the Energy Facility Site Evaluation staff for setting up not only this meeting but the meeting last evening. I think it went very well. So kudos to the staff for really a first rate job, and I look forward to reading the comments that

you're providing and hearing you at additional meetings that the Council may hold on this matter.

Thank you to Bonneville so much, Mr. Montana and Bonneville staff, and the meeting is concluded for this evening. Thank you.

* * * * *

(Whereupon, the public meeting was adjourned at 8:40 p.m.)

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In re: Whistling Ridge Energy Project
Application No. 2009-01

A F F I D A V I T

I, Shaun Linse, CCR, do hereby certify that the foregoing transcript prepared under my direction is a full and complete transcript of proceedings held on June 17, 2010, in Stevenson, Washington.

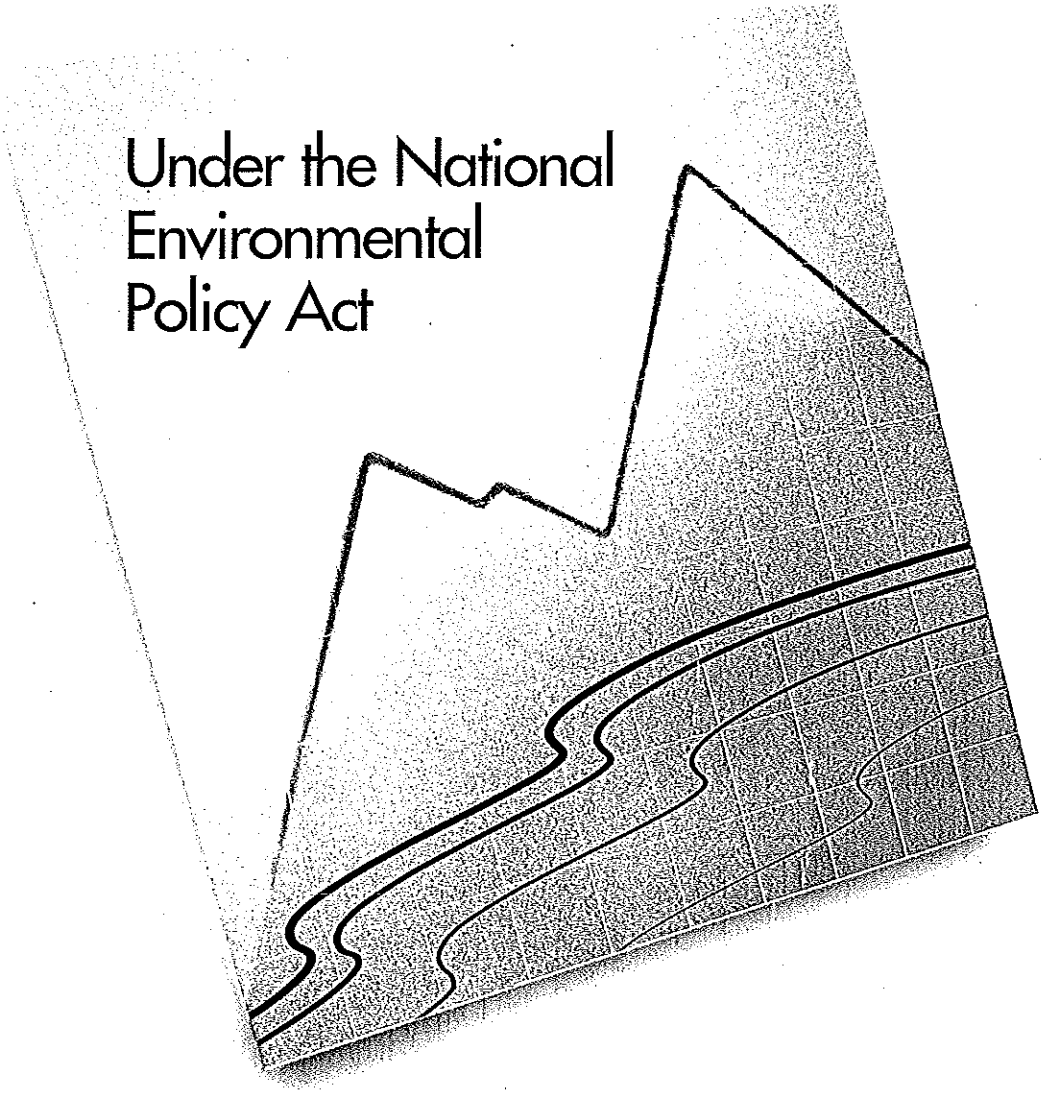
_____
Shaun Linse, CCR 2029

COMMENT LETTER 319

WR - DEIS
Public Comment #218

Considering Cumulative Effects

Under the National Environmental Policy Act



Council On Environmental Quality
Executive Office of the President

COMMENT LETTER 320

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
620 SW Main Street, Suite 201
Portland, Oregon 97205-3026

TAKE PRIDE IN AMERICA

9043.1
IN REPLY REFER TO:
ER09/423, 10/492

March 17, 2011

Andrew M. Montaño
Environment Project Manager
Bonneville Power Administration—KEC-4
P.O. Box 3621
Portland, Oregon 97208

Dear Mr. Montaño:

On July 19, 2010, the Department of the Interior (Department) provided comments on the Whistling Ridge Wind Energy Project (Project). Prior to that submission, the National Park Service (NPS) - one of the Department's component bureaus – had provided comments on the Project on May 18, 2009. The purpose of this letter is to clarify these earlier comment letters.

The comments contained in the May 19, 2009, and July 19, 2010, letters were made pursuant to the National Environmental Policy Act , 42 U.S.C. §§ 4321-4370f. Under 40 C.F.R. Part 1503, Federal agencies with special expertise are required to comment on the proposed actions of other Federal agencies. Because the NPS-administered Lewis and Clark National Historic Trail (Trail) passes through a corridor near the Project, we provided comments concerning potential environmental and scenic impacts to the Trail. The specific comments regarding turbine string A1-A7 were offered as a recommended way to mitigate visual impacts to the Trail. In making these comments, it was not the intent of the NPS or the Department to impose a permitting condition on the Project. The Department notes that the permittee has planned an overall reduction to the number of turbines that will be installed, as well as a reduction along the ridgeline within the southern end of the Project.

Thank you for the opportunity to provide this clarification. The Department continues to support the environmentally-responsible development of renewable energy sources on public and private land and does not oppose the Project. Moving forward, we look forward to working with the applicant and the Bonneville Power Administration on this Project. If you have questions regarding this letter, please contact me at (503) 326-2489.

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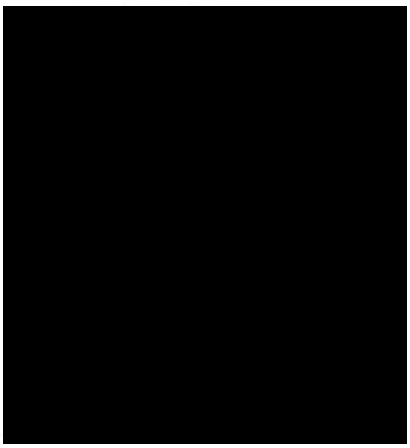
Sincerely,

Allison O'Brien

Allison O'Brien
Acting Regional Environmental Officer

cc: [redacted]

Portland, OR 97293-4428



ENERGY FACILITY SITE EVALUATION COUNCIL
August 2011