TCC
Pre-Filed Testimony
Dean Apostol
EXH-5104_R

BEFORE THE STATE OF WASHINGTON
ENERGY FACILITY SITING EVALUATION COUNCIL

In the Matter of the Application of: Scout Clean Energy, LLC, for Horse Heaven Wind Farm, LLC, Applicant.	DOCKET NO. EF-210011 TCC WITNESS DEAN APOSTOL REBUTTAL TESTIMONY

Horse Heaven Hills Wind Project
Rebuttal Testimony concerning visual impact analysis
Dean Apostol. For Tri City Cares. 07/12/2023

Rebuttal to Testimony of Brynn Guthrie
Exhibit 1021R. June 30 2023.

Ms. Guthrie's rebuttal testimony takes issue with my earlier testimony. In my rebuttal, I hope to demonstrate why her rebuttal is wrong, or not relevant to the issues I raised. I will clarify and provide additional detail, some very technical, about why the Visual Impact Assessment for this project is not sufficient, is based on misleading information, and why Scout Energy should be sent back to do additional work, including alternative designs for turbine layout.

Methodology. On Page 2, Ms. Guthrie states that her visual assessment team "followed the well-established concepts of the **BLM Visual Resource Management (VRM) system**." She states that her team was responsible for the VIA, while EFSEC conducted an independent assessment using a different methodology. I will confine my remarks here to the work Ms. Guthrie's team did, but note that the second assessment, done by EFSEC, relied on data from the initial VIA, including visual simulations and the selected Key Observation Points (KOPs). Therefore, if this data was flawed or is unreliable, then the follow-up assessment is also flawed for relying on it.

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As a former Forest Service landscape architect and consultant who has done work with and for the BLM, I am very familiar with the BLM VRM system. This system relies on "Visual Contrast Rating" to help plan and design projects that **avoid and minimize** visual contrast. It is not simply an analysis tool. It is also a design and mitigation tool. The BLM method rates project contrast and describes impacts, then develops measures to minimize or mitigate these impacts. VRM relies on having clear objectives for conservation of visual resources **prior to** application of visual contrast rating. For example, BLM classifies its lands from VRM Class 1 through Class 4. Class 1 is the highest classification, in effect meaning "preservation" of scenic resources. A minimal amount of visual change is permitted, but cannot be obvious or dominant. In the case of the Horse Heaven Hills, if it were Class 1, BLM, no wind turbines could be noticeable from valued viewpoints, except in the far distance. Wind turbines are visible to 25 miles, and can be visually dominant at 10 miles, according to research by the Argonne National Lab (Sullivan 2013). (Also, according to Sullivan, field observations of industrial scale wind projects, due to their large scale, color, and moving blades, do not met the standard of "background distance" when seen at 5-10 miles).

BLM classes 2 and 3 are less restrictive, but require retaining the existing valued visual character of a landscape. Some visual change is allowed, especially in Class 3. For example, turbines may be visible and noticeable, but would not be allowed to dominate over the natural form, line, color and texture of the landscape. Avoiding dominance would mean keeping turbines at a distance, controlling the number in view, and possibly modifying their placement.

BLM Class 4 is the only one that allows project features to visually dominate. However, according to the BLM, "**every attempt should be made to minimize the impact**……through careful location, minimal disturbance, and repeating the basic (natural) elements." In other words dominance does not mean anything goes.

The land within the Horse Heaven Hills project is private, not public**. However, if the BLM method is used to analyze visual impacts, it should be used as it was designed.** It isn't an ala carte menu. The Scout Energy VIA team should have determined what VRM Class the project area would likely fall into if it were BLM land. Classifications are based on topography, vegetation, viewer sensitivity, and other factors. **We do not have to guess at how BLM would classify the Horse Heaven Hills, because they have already done so on 6557 acres of land in their Horse Heaven Hills Unit**. In a Wilderness study in 2009, the BLM said the following:

> "***The lands (Horse Heaven Hills Unit) are managed for their visual resources as Visual Resource Management (VRM) Class II and III****. These classes have management objectives to retain the natural landscape character and projects should repeat he basic forms, lines, color, and texture found in the landscape. The Class III lands include the existing power line corridor*."

Thus using the BLM system, the conclusion would have been that the Horse Heaven Hills merit class 2 and 3 protection, which would restrict industrial wind development.

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However, assume the Scout Energy Project area was instead designated Class 4, which is the lowest possible in the BLM system. Class 4 does not mean anything goes. It means what it says in the BLM VRM Manual. **Every attempt should be made to minimize the impact.** Yet there appears to have been no effort to design the project, or modify the design to reduce, let alone minimize the impacts. The visual impact results are described and documented, while EFSEC and the community have been left with a take it or leave it "choice" of two equally bad (from a visual impact standpoint) alternatives. There is zero evidence that Scout Energy did anything to minimize, reduce, or mitigate visual impacts. This is confirmed by the rebuttal testimony of Mr. Poulos that I will address later.

An additional problem with how Ms. Guthrie's team applied the BLM method, is that they did not use all 10 contrast rating factors that the BLM manual calls for, which is acknowledged in the VIA on page 4. In particular they did not use motion as a factor, even though this project is comprised 190-240 wind turbines with blades that presumably move, and this motion will be overlooked visually. Turbines are not stationary objects, like solar panels or a transmission line. The blades spin, and this spinning will attract and holds the attention of viewers. Visual dominance is described (by the Argonne Lab 2013) as follows:

> *"Strongly attracts the visual attention of views in the general direction of the study subject. Attention may be drawn by the strong contrast in the general direction of the study subject (i.e. turbines). Attention may be drawn by the strong contrast in form, line, color, or texture, luminance (lighting)* ***or motion."***

Overlooking the contrast effect of wind turbine motion misses a crucial visibility factor. Research by Robert Sullivan (Argonne Lab 2013) has shown that turbine blade motion can easily be visible to 24 miles distance, and adds to visual contrast and dominance in western landscapes. Turbines are major foci of visual attention at 12 miles, and easily noticeable at 23. **They are likely to be major sources of visual contrast at up to 10 miles.** And note, this study was done in 2013, when land-based turbines were about half their current height.

It is Best Practice in visual assessment of wind projects to include one or more animations, which are simulations that include blade movement. By seeing the project from at least a few vantage points with moving blades, EFSEC would have a much better idea of visibility, visual contrast, and likely visual impact than can be determined by only viewing still simulations. Additionally, **the best practice for contrast rating specified by the BLM** on large, controversial projects (like HH Wind Project) is for a team of independent evaluators to complete the contrast rating in the field. A BLM team is tasked with taking the simulations into the field, standing at the Key Observation Points, and filling out the "Contrast Rating Form" for each KOP. A previous technical evaluation of the BLM method recommended that at least 5 observers should do contrast ratings. Other studies on contrast rating support this recommendation. A visual assessment with 20 or more KOPs should use 9-**12 independent raters to get highly reliable results** (Palmer, personal communication).

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To summarize, Ms. Guthrie's team, at best, only somewhat used the BLM methodology. Crucial steps were left out, making the results of the analysis unreliable. It is like someone building a house and saying they followed the building code, but stopped at the walls, didn't put in any windows, and left off the roof.

Base Photography. On page 3 of her rebuttal testimony. Ms Guthrie discusses the base photography done for this project. As noted in my earlier testimony, base photography is crucial for later preparation of visual simulations that adequately capture the appearance of the project and its setting. I had suggested, based on observation of the simulations, and in the absence of any information on what camera, or camera lenses were used, that some type of wide-angle lens, possibly a cell phone may have been used.

Ms Guthrie says in her testimony that a cell phone camera was not used. Instead, two DSLR cameras were used, a Nikon D90, and a Canon EOS 60D, one with a 50mm lens, the other with a 35mm lens.

I assume this is an accurate description. Still, I have some questions. Ms. Guthrie did not join the Project team until fairly recently, and was likely not part of the team that took the photographs. To verify the equipment used, EFSEC and the public should be able to see the **metadata** contained in the original photographs. This is usually provided in the photo files. The PDFs unfortunately do not provide any camera data.

In addition to camera and lens, resolution is very important. The highest resolution for the Nikon D90 is 4,288-by-2,848 pixels; for the Canon EOS D60 it is 3,872-by-2,592 pixels. The best practice for stitching panoramic images (124 degrees) is to overlap them by 20%. The horizontal resolution of a two-frame panorama using Nikon photos would be 7,718 pixels. For the Canon camera it would be 6,969 pixels. However, it appears that the team stitched three photos (left, middle, right) and cropped the image. The stitched Nikon photos could have up to 11,149 horizontal pixels and the Canon 10,067 pixels. Much resolution can get lost in this process, and shifting to pdfs for report purposes often further compresses or reduces resolution, with corresponding loss of clarity and detail. My point is, the base photos, even if the right lenses were used, lose resolution through combining, cropping, and converting to pdfs. This can result in photos that are far less clear and crisp than what one would see if standing on the spot where the photos were taken. Loss of detail likely makes these photos and simulations inadequate for analyzing impacts. They are misleading by blurring out detail.

On page 4 of her rebuttal testimony, Ms Guthrie describes the hazy nature of some of the simulations. She discusses average relative humidity, and photo editing to reduce haze effects. She says there are some additional and replacement simulations that were "shared with requestors" in 2021. My initial review was of the sims provided in the VIA. Ms Guthrie says it is her understanding that EFSEC will make the additional simulations available soon. But we can only evaluate what we can see. To date I have not seen any additional or reworked simulations. However, I did ask a colleague, James Palmer, Professor Emeritus at State University of New York and a leading expert on simulations, to look at those in the VIA and

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available on the EFSEC web site. The following analysis is based on a review from Mr. Palmer, and raises concerns about the resolution (clarity) in the simulations that have been provided.

Simulation resolution**. Looking at 20210920_Scout_Panorama43c-44-45.pdf. The first image is 43c – Highland/Finley (facing southeast). Its resolution is 4,397 pixels wide by 1,172 pixels high. This suggests that the original photography was not taken at the camera's highest resolution, and/or that the resolution was reduced during the simulation's creation. **Either action is against best professional practice when preparing simulations.

> *The version of this simulation provided in the VIA states that its horizontal angle of view is 73º and its vertical angle of view is 19º. This provides approximately 1 pixel per arcminute. Human visual acuity is approximately 30 arcseconds or half an arcminute. **Therefore these images do not represent the full amount of detail people will be able to see.***
>
> *Another version of this simulation is included in the response to Data Request 3, 20211020_Scout_DataReq3_Visual.pdf. It is 5,100-by-1,360 pixels with a default printing resolution of 400 dpi. Once again, the simulation appears to be below the resolution expected.*

***Printed simulations**. The simulations appear to be formatted to print on tabloid (11-by-17") paper. When printed on a tabloid sheet (11"x17"), each simulation included in the VIA is 12.75 (wide)-by-3.38 in. (tall). The simulations are stacked three to a page: existing conditions (on top), option 1(in the middle), and option 2 (bottom). The right side of the page shows the legend and a site plan.*

***Printed resolution**. The VIA pdf appears to be "optimized" for viewing on a computer screen at 72 dpi, suggesting that the simulations in the VIA may only be 918 -by-243 pixels (i.e., 12.75 in * 72 dpi = 918 pixels). It is not possible to be certain since they no longer have the integrity of a whole image. If this is accurate, then there are only 12.6 pixels per arcdegree. The simulation in file 20210920_Scout_Panorama43c-44-45.pdf, first image is 43c had 60 pixels per arcdegree, which is inadequate to represent the detail that people will be able to see. Simply changing the resolution of the printer does not correct this deficiency (because) the low resolution is part of the document."*

Ms. Guthrie, at the top of page 5 of her rebuttal, says: "Simply put, the photographs tend to represent real and practical viewing condition of the Project's visual setting."

Unfortunately, they do not. As can be seen from Mr. Palmer's review, the simulations provided are simply not reliable to understand the visual impacts of this project. This is important because it is likely that EFSEC will rely on them heavily to make a determination on visual impacts. We like to assume "a picture is worth a thousand words" as the saying goes. But these pictures mislead the viewer. Perhaps not intentionally, but that does not matter. It is the effect of the flaws.

Ms. Guthrie continues, on page 5, to discuss **the viewing instructions for the simulations, which tell the viewer to view the images at 6 or 8 inches distance from the eye**. In my earlier testimony I pointed out the impracticality of doing this. While the instructions may be clear, the image will not be for most viewers at that distance.

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Best Practices for preparing and viewing visual simulations, described in NZLIA Education Foundation 2010, The Landscape Institute 2011, and in the National Park Service Guide to Evaluating Visual Impacts for Renewable Energy Projects 2014, call for limiting images to one per page, and providing both context (i.e. panorama) and scale (an image that matches the scale of the project features on a sheet that can be viewed at a comfortable distance, typically arms length, or 21"). Note that if we follow the instructions provided on the simulations, the images will be <13"x3.38", much smaller than an 11 x 17 sheet, and that some or all of the images were made by stitching two or more photos together. To get an appropriate scale from a 50mm lens photo, you would need a full 11x17 sheet of the image, viewed at 21" distance.

I believe EFSEC and Ms. Guthrie will agree that the scale of the turbines is important to depict as accurately as possible. At the vertical scale, these turbines will be among the tallest structures in Washington State outside the City of Seattle, nearly twice the height of the tallest buildings in Spokane. And, there will be 190-240 of them, stretching across the horizon east to west along a visually prominent and important ridgeline visible from many viewpoints all across the Tri City area. Depicting a Project of this scope, even using Best Practices, is very challenging. Even the best base photography and state of the art simulations will fall short of matching the full 3-dimensional experience of people on the ground viewing the turbines. We know this from the experience of having viewed numerous simulations, and later seeing actual turbines in the real world.

But what Scout Energy has provided to EFSEC and the community falls far short of Best Practices. They have provided simulations that are not sharp enough, are presented 3 to a page, and the viewer is told to view them at a 6-8" distance from their eyeballs. This simply does not work for most people. I ask EFSEC to try looking at the images, at 11x17 size, from 6-8 inches distance. You are likely to see only a blur. Thus, while the instructions Ms Guthrie's team provided may be *technically* accurate, they are not at all useful in understanding the scale of the Project elements as they will be experienced from the various viewpoints that were simulated.

Additionally, EFSEC and the public are most likely going to view the flawed simulations not on a high-resolution printed page, but on a computer screen that may be smaller than 11x17, and where the resolution may be at a low setting, in a room with suboptimal lighting conditions. Again, this all adds up to underestimating scale, contrast, and the impact that will be experienced by people out in the landscape after the project is built.

On Page 5 of her rebuttal testimony Ms. Guthrie takes issue with my characterization of the simulations as "misleading." I want to clarify that I do not mean they are deliberately misleading. But that they simply are not done well enough to avoid being misleading.

Viewpoint Selection. Ms. Guthrie takes issue with my critique that the viewpoint selection is flawed. She says "many of the selected and simulated viewpoints were requested by the stakeholders. This may be true, though it would help to know which stakeholders requested which viewpoints. The larger problem is that the viewshed, or area from which the project likely will be visible, is huge, some 24 miles east to west, and several miles north to south. The

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viewpoints that were selected and simulated in the VIA are too few and far between to adequately capture the breadth and scope of the project. On pages 6 and 7 of the VIA there is a description of the Key Observation Point selection process. It does not mention 50 viewpoints, or say which of the 16 selected for simulations were identified by stakeholders. It does not say what these 16 KOPs "represent". For example, does one simulation represent other nearby viewpoints that were not simulated? I don't see any reason to think the selected viewpoints that were simulated are sufficient to fully understand impacts. As noted, Ms. Guthrie says there are additional simulations forthcoming. I have not seen these. Nor can I say whether they would fill in the large gaps that exist between the 16 viewpoints simulated in the VIA.

Note: there is a data base that could be used to identify potential public viewpoints and corridors: the US Public Areas Database (PAD-US): A map can be generated and overlayed with the viewshed maps to see if they are likely to be impacted.

https://www.usgs.gov/programs/gap-analysis-project/science/protected-areas

Impacts. On Page 9 of her rebuttal Ms Guthrie says the project is "fully reversible." Technically yes. At some point, decades into the future, we may have better technologies for energy, and the 200+ giant turbines in the Horse Heaven Hills, built at great expense might be dismantled. McNary Dam might also be taken out some day. Maybe Bonneville too. But who actually believes this will happen? Does EFSEC believe it? Ms. Guthrie says "the viewshed will be fully restored," as if there is a time limit on the turbines. It's one thing to say the impacts are reversible. It's quite another to actually reverse them. Note that some of the earliest industrial scale wind energy projects in the United States were at Altamont and San Gorgonio Passes in California in the early 1980s. Forty years later there are still hundreds to thousands of turbines there, the earlier models having been mostly replaced by newer, larger ones. Once Horse Heaven is dedicated to wind, we have to assume it is going to continue to be used for most of our lifetimes. They will in all likelihood be recommissioned so long as wind energy remains viable.

Make no mistake. As currently designed, this project will have significant, long-term impacts to visual quality, affecting hundreds of thousands of people. I state that with a high level of confidence, as a visual resource expert who has decades of experience in this field.

Mitigation. Ms Guthrie points to the testimony of Mr. Poulos with respect to how topography and clustering were considered in the design. Gregory Poulos Rebuttal Testimony, EXH-1031_R, provided a description of how wind farms are designed to be as efficient as possible, given constraints. Beginning on page 10 he addresses my previous analysis. He specifically addresses wind turbine layout.

Mr Poulos admits to not having expertise in assessing visual impacts. Yet he says he observes that "many people prefer wind turbines over smokestacks, and consider them beautiful and elegant…"

Visual resource experts sometimes use what are called "visual preference studies" to understand what people like and do not like to see in their view. While it may be true that many people would rather see a wind turbine than a smokestack, there really isn't any evidence to support this. And what is being

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presented with this project is not a choice between a wind turbine or a smokestack. It is a choice between 190 **extremely tall** turbines and 240 **very tall** turbines. No one is proposing a smokestack in lieu of these turbines.

It may also be true that some people find turbines to be beautiful and elegant, as Mr Poulos claims. But again, other than anecdote, he provides no evidence. Those who have expertise in visual resource impacts have reached different conclusions. As discussed above, Ms. Guthrie's team used the BLM Visual Resource Management methodology to evaluate impacts. Robert Sullivan, retired landscape architect from the Argonne Lab, prepared a "Best Practices" guide for the BLM to evaluate Renewable energy projects in Wyoming, and a guidebook for the National Park Service (NPS) to evaluate renewable energy proposals outside of, but visible from National Parks. He is among the foremost experts on visual resource impacts of renewable energy.

On page 50 of his "Guide to Evaluating Visual Impact Assessments for Renewable Energy Projects for NPS, Mr. Sullivan describes the visual contrasts presented by industrial scale wind projects.

The primary sources of visual contrast associated with operating onshore wind energy facilities include:

- *Vertical line contrasts associated with the wind turbine towers;*
- *Color contrast from the white tower and blade structures, seen against a sky or ground backdrop (the Federal Aviation Administration [FAA] requires that utility-scale wind turbines be painted white as an aide to aerial navigation safety);*
- *Form and scale contrast from the height of individual wind turbines and the large expanse of the wind turbine array as a whole;*
- *Motion of the wind turbine blades;*
- *Shadow flicker;*
- *Line, color, and texture contrasts from roads and other cleared areas; and*
- *Color contrast from aviation obstruction lighting at night.*

Note that **visual contrast is the issue**, not whether some people like the look of turbines, and some people do not. This speculation is simply not relevant. The question isn't the look of an individual turbines, it is the look of hundreds of them arrayed across the Horse Heaven Hills, the nearest ones only a few miles from tens of thousands of viewers who are accustomed to a mostly undeveloped setting that frames the south edge of the Tri City region.

Mr. Poulos goes on to talk about how, since the Nine Canyon wind project is already there, adding more turbines "could also be built without undue impact on the local populace….even accounting for the fact that modern day wind turbines have somewhat larger dimensions."

Again, he provides zero evidence for this. Did his team test his theory? Did they accurately and clearly, and to scale share what the project will look like, adding hundreds of turbines twice the size of those at Nine Canyon? Did they do any preference testing with the local community? Are they simply ignoring the objections that have been raised regarding visual impacts?

If they did any testing, we are unaware of it. **Mr. Poulos acknowledges that he has no expertise in visual impact analysis.** I have no expertise in designing wind turbines. Let's all hope that I am not hired as an expert in wind turbine design.

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Mr. Poulos goes on to make the argument: "A sole focus on visual impact seems undue, given…..the careful analysis that also must be undertaken in many different technical areas….."

This is a straw man argument. **No one I know of, certainly not myself, has argued that this project should be designed from a sole focus on visual impact**. What I am saying, and I hope this is clear to EFSEC if not to Mr. Poulos, that **this project, as currently designed, including both options, will have avoidable, significant impacts to a scenic resource that is presently enjoyed by thousands, possibly hundreds of thousands of people.** And I am saying that these impacts can be reduced, and mitigated, by modifying the design, meaning the number and placement of turbines. I have worked with engineers for over 4 decades. I worked for the Army Corps of Engineers. I know that engineers are taught to optimize the function of their projects, and if this means ignoring visual impacts, so be it. What I am arguing is that EFSEC has a responsibility that is larger than optimizing the engineering of this project. And that this is possible by developing and testing additional alternatives. And those alternatives need to also consider other impacts: on Native American sites, on wildlife, on wildfire management, on recreation, and so forth.

Mr. Poulos continues with a discussion of how Scout Energy did the siting of individual turbines, considering topography. But he appears to have missed my point entirely. I understand they considered topography. But what they did not do, and this is clear from Mr. Poulos' own testimony, is consider the visual aspects of that topography. As an example, one could place a turbine at the highest point along the ridgeline, or one could "straddle" the ridgeline by placing turbines on either side of it, letting the high point remain undeveloped. Doing this might require modifying an otherwise optimal layout, but this is how visual (and other) impacts are reduced. And if that high point is also the best place for raptors or other wildlife to use, then you solve 2 problems. Yes, you may lose a bit of energy production. But that may be a price you have to pay.

Mr. Poulos says the "best resource is along the escarpment". But that is also the best and most important visual resource. It is the most visual interesting part of the project area. It is closest to most viewers. It has the most complex topography. Surely EFSEC and Scout Mountain can give consideration to these other values.

Mr. Poulos next takes issue with my suggestion that **building fewer turbines is the most obvious way to reduce visual impacts**. **I stand by that. In this case, fewer turbines = less impacts, and those closest to viewers are likely the most impactful.** Other projects in Washington State and elsewhere have had to make design changes accommodate people's legitimate visual impact concerns. Vineyard Wind, offshore of Marthas' Vineyard, last year agreed to remove the front 2 or 3 rows of turbines nearest the island to reduce visual impacts. EFSEC, a few years ago required removal of 15 of a proposed 50 turbine project at Underwood Mountain near the Columbia Gorge National Scenic Area (Windy Ridge) to reduce visual impacts. The developer of the Windy Flats Project, near The Dalles Mountain, not far from Tri Cities, agreed to remove a number of turbines to satisfy concerns over visual impacts.

The proposed Horse Heaven turbines along the escarpment are very close to many viewers in the Tri Cities area. They are only 5 miles from McNary Refuge, 3 miles from Clodfelter Road,

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2.5 miles from Chandler Butte, less than 5 miles from Badger Mountain, 3.6 miles from Kennewick, 2.7 from Benton City, and 1.5 from Badger Road. This is a recipe for a very high impact project. Removing, or at the very least delaying these near view turbines to a future phase, is likely the most effective way to reduce the impacts. I understand Mr Poulos isn't concerned about these impacts or doesn't think they are important enough to alter the plan. As a visual resource expert, I disagree with him.

On page 13 of his rebuttal testimony Mr. Poulos takes issue with my suggestion to leave the highest places along the escarpment undeveloped, and place the turbines in the gaps. I'm not a wind expert, but I certainly understand that the higher the better from a wind energy production standpoint. Unfortunately the higher the better also applies to visual resources. Our eyes move across views toward the high points. High hill and mountain views are among the most coveted. People pay money for these views. Others may not have the money to buy view property, but enjoy them from public places. Surely EFSEC can try to push Scout Energy to find a better balance in their design by preserving the high places.

Summary. I understand that EFSEC will be holding a hearing in August to take further testimony on this Project proposal. I also understand that this hearing will be done remotely, that is with the participants not in the same room. One item that needs consideration is how EFSEC and the participants will view the simulations. I have explained in detail how and why these are flawed, not reliable, misleading, and will lead to underestimating the visual impact. But having a remote hearing compounds this problem.

Over the years, as industrial scale wind energy has expanded, concerns of visual impacts have grown. Not just in Washington State, but across much of the United States, and in other nations. Initially, visual resource experts were caught off guard by wind turbines. We, like the general public, had seen the wind industry advertisements, equating wind turbines with clean energy, and always showing 3, maybe 5 turbines at a distance in otherwise open farm or range land. The early generations of wind turbines were not terribly out of scale with the land, similar in height and appearance to grain silos, or transmission towers. A few, only 100' in height, clean white monopoles, moving blades, cows peacefully grazing underneath…..who would object?

But over time, as the wind industry matured, turbines have gotten larger and larger, and projects have gotten bigger and more expansive. It's not the promotional poster of a few, modest sized turbines now. It is, for better or worse, an industrial park that substantially changes the look and feel of rural and semi-natural landscapes, like the Horse Heaven Hills. Few landscapes are protected from wind development. The viewsheds of towns, cities, even national parks are not protected. We are confronted with a dilemma. We need clean energy, but we love our rural lands and view of them.

EFSEC and the public, for reasons stated, will have a difficult time grasping the scale of this Project at a remote hearing. As a professional who works on wind and other projects, attends conferences, regularly consults with colleagues, and one who has co-authored a recent book on the subject of visual impacts of renewable energy, I ask EFSEC to take the time and effort to get this is right as you can before you decide. Your members, your staff, and the community participating in the hearing will be viewing flawed images on home computers, quite possibly

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laptops with small screens. The resolution setting on your screen may be suboptimal. The lighting in the room you are sitting in may be too bright, or may have glare on your screen. You will have difficulty seeing both the vertical scale, as it will be experienced in reality from a given viewpoint, and the horizontal scale, or breadth of the project from left to right.

You will not see spinning blades. You will not see crisp, clear turbines set against a blue sky. Scout Energy and their team will say "See, look at this picture. It's not so bad really."

Be skeptical. Ask questions. Conservation of visual and scenic resources is as much a responsibility of the State, as is development of renewable energy. This project can be modified to protect valued scenery, while still producing a significant amount of clean energy. It does not have to be one or the other, but some better effort and compromises are needed.

As I testified previously and have repeated in this rebuttal, the Horse Heaven Hills wind project as designed will have avoidable, long term, unreasonably significant impacts to the scenic resources of the Tri Cities region. Scout Energy should be told by EFSEC to develop one or more additional options that reduce these impacts to a reasonable level. No one, to my knowledge is saying no to this project in its entirety. I certainly am not. But the visual impact analysis provided by Scout Energy is faulty. The simulations are misleading and too few. The KOPs are insufficient. We can and should do much better. Renewable energy is important, but so are our landscapes and visual resources. You have an opportunity to get this project right. Please do not overlook it in the interest of expediency.

References

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