

Whistling Ridge Energy Project

Application for Site Certification Agreement

Submitted to

Washington Energy Facility Site Evaluation Council

Application 2009-01



Submitted March 10, 2009
Amended October 12, 2009

PLEASE NOTE: Both original and revised application sections are included on this CD. Original application sections have a footer dated March 10, 2009. Revised sections have a footer dated October 12, 2009.

Revised application sections include:

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October 12, 2009

Mr. Jim Luce, Chair
Washington Energy Facility Site Evaluation Council
905 Plum Street SE, Third Floor
P. O. Box 43172
Olympia, Washington 98504-3172

Subject: **SUBMITTAL OF AMENDED APPLICATION 2009-01
WHISTLING RIDGE ENERGY PROJECT
SKAMANIA COUNTY, WASHINGTON**

Dear Mr. Luce:

Whistling Ridge Energy LLC hereby submits an Amendment to our Application 2009-01 for Site Certification for construction and operation of the Whistling Ridge Energy Project.

The primary revision is the change in site access. We are no longer proposing to use forest service road CG 2930 through the Columbia River Gorge National Scenic Area (CRGNSA). Instead site access is proposed from SR 14 to Cook-Underwood Road, to Willard Road, and then to West Pit Road. West Pit Road is an existing forest road that connects to the western boundary of the project site. West Pit Road is located entirely outside of the CRGNSA and would require some widening. Construction impacts are similar to those already described in the application for project access. No roadway improvements would be required to roads within the CRGNSA.

In addition to the change in road access description and associated roadway lengths, we have made 6 other minor changes to the Application:

- The size of the maintenance and operations yard has been increased from 2 acres to approximately 5 acres.
- A second alternative location has been included for the maintenance and operation yard along the new access road.
- The construction schedule in Section 2.12 has been updated to reflect a later decision date by the Governor, and therefore a later start to construction and operation.
- The zoning for the southern portion of turbine string A has been corrected from R-10 to For/Ag-20 based on testimony from Skamania County during the land use hearing.
- The recreation section has been corrected to add the location of two national trails, the Lewis and Clark National Historical Trail and the Oregon Pioneer National Historic Trail. As pointed out by the National Park Service in their EIS comment letter, both are located within five miles of the proposed facility. These trails roughly follow Highway 14 and Interstate 84, respectively.

The amendment package includes only those sections of the Application that have been revised and is intended to be an errata package to the existing application. Only those sections that have been changed would be replaced.

To assist the reviewers in inserting the amendment package, we have included a listing of the sections as an attachment to this letter. We have also marked the revised text using a strike-out and underline format along with a vertical line in the left hand margin. Text that is not marked as a change is identical to that shown in the March 2009 Application. The vast majority of the revisions result from the new access roadway.

The Amendment to the Application being submitted has been prepared in compliance with the regulations found in Section 463-60 of the Washington Administrative Code. The submittal includes:

- (1) Sixty-five (65) copies of the Amendment
- (2) Twenty (20) copies of the Amendment in electronic format (Adobe .pdf format)

The Amendment was prepared jointly by Whistling Ridge Energy LLC and URS Corporation. Whistling Ridge Energy LLC hereby certifies that, to the best of our knowledge, all Energy Facility Site Evaluation Council requirements have been reviewed, that the data has been prepared by qualified professional personnel, and the Amended Application is substantially complete.

As stated in Section 1.2, Designation of Agent, in the Application, Mr. Jason Spadaro and Mr. Allen Barkley will continue to serve as the primary points of contact during the review process, along with our legal counsel. Our project team remains ready to meet with you to discuss the application and its review process at your convenience.

Sincerely,



Jason Spadaro, President
Whistling Ridge Energy LLC

Instructions for inserting Amendments into Application 2009-01

PLEASE NOTE: Only revised application sections are included in this package. Please retain unchanged sections, and replace only those sections that are included herein.

| Application Section # | Section Title | Revised or Not |
|-----------------------|--|--|
| | Table of Contents | Revised – please replace |
| | Introduction | Revised – please replace |
| 1.1 | Description of Application | <i>Not revised – retain existing</i> |
| 1.2 | Designation of Agent | <i>Not revised – retain existing</i> |
| 1.3 | Assurances | <i>Not revised – retain existing</i> |
| 1.4 | Mitigation Measures | <i>Not revised – retain existing</i> |
| 1.5 | Sources of Information | <i>Not revised – retain existing</i> |
| 2.1 | Site Description | Revised – please replace |
| 2.2 | Legal Description and Ownership Interests | Revised – please replace |
| 2.3 | Construction on Site | Revised – please replace |
| 2.4 | Energy Transmission Systems | <i>Not revised – retain existing</i> |
| 2.5 | Water Supply | <i>Not revised – retain existing</i> |
| 2.6 | System of Heat Dissipation | <i>Not revised – retain existing</i> |
| 2.7 | Characteristics of Aquatic Discharge System | <i>Not revised – retain existing</i> |
| 2.8 | Wastewater Treatment | <i>Not revised – retain existing</i> |
| 2.9 | Spillage Prevention and Control | <i>Not revised – retain existing</i> |
| 2.10 | Surface Water Runoff | <i>Not revised – retain existing</i> |
| 2.11 | Emission Control | <i>Not revised – retain existing</i> |
| 2.12 | Construction and Operation Activities | Revised – please replace |
| 2.13 | Construction Management | <i>Not revised – retain existing</i> |
| 2.14 | Construction Methodology | Revised – please replace |
| 2.15 | Protection for Natural Hazards | <i>Not revised – retain existing</i> |
| 2.16 | Security Concerns | <i>Not revised – retain existing</i> |
| 2.17 | Study Schedules | Revised – please replace |
| 2.18 | Potential for Future Activities at the Site | <i>Not revised – retain existing</i> |
| 2.19 | Analysis of Alternatives | Revised – please replace |
| 2.20 | Pertinent, Federal, State and Local Regulations | Revised – please replace |
| 3.1 | Earth | Revised – please replace |
| 3.2 | Air | <i>Not revised – retain existing</i> |
| 3.3 | Water | Revised – please replace |
| 3.4 | Habitat, Vegetation, Fish and Wildlife | Revised – please replace |
| 3.5 | Wetlands | Revised – please replace |
| 3.6 | Energy and Natural Resources | Revised – please replace |
| 4.1 | Environmental Health | <i>Not revised – retain existing</i> |
| 4.2 | Land and Shoreline Use | Revised – please replace pages 4.2-1 through 4.2-24 |
| | NOTE: Revisions are only made to pages 4.2-1 through 4.2-24, and to 4.2-73 to the end of the section – please REPLACE those portions with the new sections and RETAIN pages 4.2-25 through 4.2-72 | Retain pages 4.2-25 through 4.2-72 |
| | | Revised – please replace pages 4.2-73 through to the end of section 4.2 |
| 4.3 | Transportation | Revised – please replace |
| 4.4 | Socioeconomics | <i>Not revised – retain existing</i> |
| 5.1 | Air Emissions | <i>Not revised – retain existing</i> |
| 5.2 | Wastewater/Storm Water Discharge Permit Applications | <i>Not revised – retain existing</i> |

INTRODUCTION

Whistling Ridge Energy LLC, a limited liability corporation operating in the State of Washington, seeks a Site Certification Agreement to construct and operate the approximately 75-megawatt (MW) Whistling Ridge Energy Project to generate electricity using wind turbine technology. The project would be constructed in south-central Washington on an approximately 1,152-site approximately 7 miles northwest of the City of White Salmon in Skamania County, Washington. The project would be located on commercial forest land owned by S.D.S. Co., LLC and Broughton Lumber Company in an unincorporated area of Skamania County, outside of the Columbia Gorge National Scenic Area.

I.1 PROJECT SUMMARY

The Whistling Ridge Energy Project is intended to provide both a new source of non-polluting renewable energy in the State of Washington, and to provide much-needed economic development in Skamania County fully compatible with existing land use.

The Whistling Ridge Energy Project is designed to provide low-cost renewable electric energy to meet the growing needs of the Pacific Northwest. Located north of the Columbia Gorge, the project site has been selected primarily for its wind resource and its proximity to Bonneville Power Administration (BPA) power transmission lines, which traverse the site. The transmission lines have adequate capacity for the wind-generated power to be integrated into the power grid system, and the Applicant has made transmission and interconnection requests to BPA. The project site has the further advantage of being in proximity to the Vancouver/Portland metropolitan areas, with the capability of delivering cost-effective renewable energy to these growing communities.

Skamania County is entering its second decade of severe economic downturn, largely a result of the area's long dependence on timber harvests on public lands. Unlike urban counties with a diversity of businesses, Skamania County has been hard hit by the precipitous decline of timber harvest and associated revenues, and the pending sunset of federal timber payments created as mitigation for the impacts of enforcement of the Endangered Species Act. As described in Section 4.4 Socioeconomics, in 2006, employment in Skamania County averaged 3,116 jobs, of which 2,284 (73 percent) were held by wage and salary workers and 832 (27 percent) by merchants and sole proprietors. Place of work earnings (wages, salaries, and proprietors' earnings) accounted for approximately 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 principal sources of employment were local government, accommodation and food services (tourism), federal government, and small scale manufacturing. The data available for this application does not reflect the current economic crisis that has greatly exacerbated Skamania County's already depressed economy rife with growing poverty, underemployment, and lost jobs.

The annual unemployment rate in Skamania County was 6.6 percent in 2007, and rose to 8.4 percent in 2008, before the full impact of the current recession took effect. Relative to the state as a whole, Washington unemployment rates in 2007 and 2008 were 4.5 percent and 5.5 percent, respectively, having risen from 5.0 percent in 2000 (WESD 2008). Per capita personal income in 2006 in Skamania County was \$28,265, which was 74 percent of per capita personal income for the State of

Washington as a whole (BEA 2008). Median household income the same year (2006) was \$39,476, or 70 percent of the same measure for Washington State as a whole (\$56,184) (WOFM 2008). These statistics indicate relatively lower income in the area near the project when compared to other areas in Washington.

These current unemployment rates and trends and income levels not only reflect that the economy in Skamania County is more depressed than some other areas in Washington, but also that the current national economic slowdown that began in 2008 is affecting areas near the project. The 2008 annual unemployment rate in Skamania County was almost three percentage points higher than the state average, indicating a slow economy.

Fortunately, Skamania County has another natural resource, its winds, that can be developed to benefit local residents and the wider community.

The site on Whistling Ridge, located north of the Columbia River Gorge National Scenic Area and high above the Columbia Gorge, enjoys the same winds that have made the Gorge area a national center of wind power development. These are the same winds that draw wind surfers from around the world to wind swept reaches of the Columbia River near Hood River.

The proposed project site has been used for the last century for commercial forest operations. Most of the areas of the site identified for turbines 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. 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. In short, the project site is heavily developed, includes no native habitat, and is permanently committed to its use as a utility corridor. The project, once developed, will be a highly compatible companion to sustainable forestry operations on the site, strengthening the landowners' capability to weather through economic cycles and to keep its 325 forestry and wood products personnel employed.

Approximately fifty 1.2 to 2.5 MW wind turbine generators would be placed on the site and connected to BPA's existing North Bonneville to Midway 230-kilovolt (kV) transmission line. The winds that traverse the site are robust, with high energy generation due to the well-understood, unique geographic features of the Columbia Gorge area. The site's potential ability to produce clean electricity so close to urban load, with ready access to transmission and minimal impacts to the natural environment, make it one of the premier as-yet undeveloped wind power sites in the Pacific Northwest.

I.2 DEMAND FOR ELECTRIC POWER IN THE PACIFIC NORTHWEST

Whistling Ridge Energy LLC is proposing to develop a reliable source of clean and cost-effective renewable electrical power in the Pacific Northwest. The Fifth Northwest Electric Power and Conservation Plan was issued by the Northwest Power and Conservation Council in May 2005. The Plan found that Northwest electricity demand was projected to grow at an average annual rate of nearly 1 percent per year, resulting in an over 5,000-MW deficit by 2025 using the medium forecast.

The Fifth Power Plan states that “*Renewable resources are also a priority resource in the Northwest Power Act. Like conservation, their potential and cost-effectiveness are sensitive to developing technology and the cost of more traditional generating alternatives... Renewables have potential risk reduction benefits related to their ability to hedge risks of fuel price volatility and the risks of possible measures to mitigate greenhouse gas emissions.*”

The Washington Department of Community, Trade and Economic Development in recent reports to the Washington State Legislature has found that: “*...the region should begin an aggressive program to capture the large amount of cost-effective conservation that is available and to lay the groundwork for building a large amount of wind generation...*” (Washington CTED 2005).

More recently, state policy has been driven by the electorate’s enactment of a Renewable Portfolio Standard that requires all but the state’s smallest utilities to acquire new sources of renewable energy with which to supply consumers with clean electricity. This policy, mandated by the voters, resembles similar (though more aggressive) standards in Oregon and California, and has spurred active development of potential wind energy resources within the state to serve in-state utilities.

The Renewable Portfolio Standard, 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.

According to the American Wind Energy Association, the power of the wind can be imposing. Winds capable of flagging trees, prohibiting crop cultivation or even, on occasion, blowing a semi-trailer truck off the road, can be harnessed to be a non-polluting, never-ending source of energy.

Wind power is a form of renewable energy—energy that is replenished daily by the sun. As the earth is heated by the sun, air rushes to fill the low pressure areas, creating wind power. The wind is slowed dramatically by friction as it brushes the ground and vegetation, so it may not feel very windy at ground level. The kinetic power in the wind, the energy of moving air molecules, may be five times greater at the height of a 40-story building (the height of the blade tip on a utility-scale wind turbine) than the breeze on your face. Meanwhile, the wind may be accelerated by certain types of land forms, so that certain areas of the country may be very windy while other areas are relatively calm. Since our country’s founders tended to build our cities and towns where the wind doesn’t blow strongly, the vast majority of people don’t live in high-wind areas. Yet, when wind power is converted to electricity, it can be sent long distances to serve the needs of the cities and towns where we live.

Wind power is converted to electricity by a wind turbine. In a typical, utility-scale wind turbine, the kinetic energy in the wind is converted to rotational motion by the rotor – typically a three-bladed assembly at the front of the wind turbine. The rotor turns a shaft that transfers the motion into the nacelle (the large housing at the top of a wind turbine tower). Inside the nacelle, the slowly rotating shaft enters a gearbox that greatly increases the rotational shaft speed. The output (high-speed) shaft is connected to a generator that converts the rotational movement into electricity at medium voltage (a few hundred volts). The electricity flows down heavy electric cables inside the tower to a transformer, which increases the voltage of the electric power to the distribution voltage (a few thousand volts). The distribution-higher voltage power flows through underground lines to a collection point where the power may be combined with other turbines. In many cases, the

electricity is sent to nearby farms, residences and towns where it is used. Otherwise, the distribution-voltage power is sent to a substation where the voltage is increased dramatically to transmission-voltage power (a few hundred thousand volts) and sent through very tall transmission lines many miles to distant cities and factories (AWEA 2007).

I.3 REDUCTION OF ENVIRONMENTAL IMPACTS

The project's location is intended to reduce or eliminate the environmental impacts that would occur if a similar project were to be construction on an undisturbed site:

- The site has been in commercial forest operation for over a century and the majority of the locations proposed for the wind turbines have recently been harvested and reforested, eliminating the need for large amounts of clearing for the purpose of locating a wind project. With this project, the site will remain in sustainable forestry operation.
- The site has existing forest roads that can be used with minimal widening for equipment delivery and for Operations and Maintenance, eliminating the need for new clearing. The site can be accessed from County roads via existing roads, requiring only minor improvements.
- The site is crossed by BPA's existing North Bonneville to Midway 230-kV transmission line, allowing direct connection through a substation, and eliminating the environmental impacts associated with the need to create a new high voltage transmission line.
- The site is situated in proximity to the Vancouver/Portland metropolitan area, and can provide a robust source of new clean energy to these markets.
- Unlike a fossil fueled power generation plant, wind energy produces no air emissions, and contributes no green house gas emissions

I.3.1 Water Use

The project would have minimal water needs. Small amounts of water would be used during construction for dust control. During operation, the only water needs are for the Operations and Maintenance staff. The staff of eight to nine employees would use less than 5,000 gallons per day for domestic purposes.

I.3.2 Transmission System

Whistling Ridge Energy LLC proposes to connect the project to the BPA electrical transmission grid. These transmission lines are outside the scope of this Application.

I.4 ELEMENTS OF THE PROJECT SUBMITTED FOR APPROVAL

The project submitted for review and approval under Chapter 80.50 Revised Code of Washington includes the following elements:

- An installed capacity of approximately 75 MW of electricity
- Up to fifty 1.2- to 2.5-MW wind turbines
- Electrical transformers
- 34.5 kV collector lines and systems (primarily underground)
- Permanent meteorological towers
- ~~An~~ Two alternative locations for an Operations and Maintenance facility
- A substation located adjacent to BPA's existing North Bonneville to Midway 230-kV transmission line
- Approximately 2.4 miles of newly-constructed and ~~7.27.9~~ miles of improved roads to provide access to the wind turbine locations during construction and for Operations and Maintenance

In addition to Operations and Maintenance facilities, the project proposes temporary facilities, including construction phase laydown and storage/staging areas, rock crusher and portable concrete batch plant(s). If built, these facilities will be on site or along the access road to the site, minimizing the impacts on the surrounding roads. The project substation would be built on the project site adjacent to BPA's North Bonneville to Midway 230-kV transmission line, facilitating interconnection with the BPA grid. The proposed electrical interconnection to BPA will provide the access to the regional transmission grid for sales to the wholesale electric market. The development of the proposed interconnection requires a federal action, limited exclusively to the interconnection with the BPA grid.

I.5 SUMMARY OF ENVIRONMENTAL FINDINGS

The project has been planned and designed to eliminate or fully mitigate all environmental impacts. The following is a summary of the elements of the environmental in terms of project design and operation.

I.5.1 Geology, Soils, and Floodplains

The project would have minor and insignificant impacts on earth resources, as described in Section 3.1 of this Application. This includes excavation, grading, trenching, backfill, and compaction associated with site development, the wind turbine foundations, and roadway improvements.

Because surface soils on the project site are considered moderately susceptible to erosion, there is potential for adverse impacts on the site soil in areas of steep topography during grading and foundation construction activities. 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 will be minimized through the use of erosion control measures outlined in Section 3.1.7.3 Mitigation Measures.

I.5.2 Air

Because the project uses wind technology to generate electricity, no impacts to air quality would be created during project operation.

During construction, there would be temporary and localized minor impacts from construction vehicle exhaust, similar in nature to those produced by any construction project that involves heavy equipment and transportation of materials to the project site. Construction of the project would produce limited odors associated with exhaust from diesel equipment and vehicles, fugitive dust emissions from construction-related traffic, and additional wind-blown dust as a result of ground disturbance. Whistling Ridge Energy LLC would implement an effective dust control program to minimize any potential disturbance from construction-related dust.

I.5.3 Water

Sections 2.10 Surface Water Runoff and 3.3 Water describe water discharges, water resources, and stormwater management. A Stormwater Pollution Prevention Plan would be prepared and implemented during construction to control the flow of stormwater.

No perennial streams are located in or adjacent to the Whistling Ridge Energy Project. Five drainage ways have been identified on site, ultimately draining to the east of the project site. Runoff is conveyed via these drainage way, and by additional ditches in the southwest portion of the site downslope to perennial streams outside the project site that eventually drain to the Columbia River.

The proposed access road, West Pit Road, crosses one unnamed drainage in the Lapham Creek watershed. 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. The planned improvements to West Pit Road would cross the unnamed drainage~~existing roads that would occur inside the Scenic Area would cross one intermittent stream.~~ This stream drainage has no defined channel and carries water only during runoff events downstream of the existing culvert. It is classified as a Class V stream under Skamania County Code 21.04.020(B). Buffers are established for Class V streams. However, expansion of existing uses is allowed within these water resource buffers. 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. Additional details regarding water sources and pathways are identified in Section 3.3 Water and Section 3.5 Wetlands.

Project operations would not require the use of any water for cooling or any other use aside from the limited needs of the Operations and Maintenance facilities. There would be no industrial wastewater stream from the project beyond wastewater from the Operations and Maintenance building discharging to an on-site septic system. The anticipated use is expected to be less than 5,000 gallons per day for kitchen and bathroom use. Potable water intake would be in the form of a well accommodating the Operations and Maintenance facilities' needs.

I.5.4 Wetlands

No wetlands or wetland indicators were identified within the study area (the project site and ~~previously proposed~~ access roadways). One undelineated wetland is identified as occurring outside the study area perimeter west of turbines C1-C4 (see Figure 3.5-1, Project Site Wetlands in Section 3.5 Wetlands).¹

A preliminary review of the National Wetland Inventory maps indicates wetlands occur along State Route (SR) 14 near White Salmon, Washington (Figure 3.5-2, Access Route NWI Wetlands in Section 3.5 Wetlands). As described in Section 4.3 Transportation, ~~only minor~~ no roadway improvements to SR 14 would ~~possibly~~ be required at the intersection of SR 14 and Cook-Underwood Road. No wetland impacts are anticipated to occur. The National Wetland Inventory does not show the presence of wetlands along the local secondary and forest roads proposed to be used by the project. As the National Wetland Inventory is based on historic aerial photography interpretations, a field investigation ~~will occur in spring conducted in 2009 to confirm~~ whether or not ~~that~~ wetlands and other regulated waters of the US or the State ~~may~~ would not be impacted by the project.

I.5.5 Plants and Animals

Construction and operation of the Whistling Ridge Energy Project would require the removal of vegetation in some areas to accommodate roadway construction and improvement, turbine siting, staging, and construction. Because no rare plants were identified in the portion of project site surveyed to date, no project-related impacts on any federal- or Washington State-listed plant species are anticipated during construction or operation of the proposed project.

With the exception of the planned improvement to ~~existing roads~~ West Pit Road that would cross one ~~intermittent stream~~ unnamed drainage, no water bodies on the project site would be impacted. No impacts to aquatic species, their habitat, or designated critical habitat are expected as a result of construction and operation of the proposed facility. Water quality would be maintained during construction and operation of the project by incorporating best management practices.

Construction and operation of the Whistling Ridge Energy Project is expected to have limited impacts on wildlife resources. Project actions would include the construction of permanent roadways, improvement (i.e. widening and resurfacing) of existing roadway, and installation and operation of wind turbines. Impacts to wildlife habitat may result from vegetation removal in forested areas where the proposed roadway and turbine alignment is planned. Vegetation management in areas surrounding each turbine would range from complete removal of vegetation to limitations on tree height.

Three federally-listed or candidate species have the potential to occur within the project site, including northern spotted owl, western gray squirrel, and northern goshawk. Ongoing forest management on lands located within the proposed project site has reduced suitable habitat for these

¹ The wetland on the project site results from a constructed impoundment according to National Wetland Inventory maps and so is not regulated locally as a critical area according to Skamania County Code Title 21A.04.020(A)(1)(b).

species through fragmentation of mature forest stands.

Northern Spotted Owl. The spotted owl prefers forest habitats characterized by multi-layered canopy, and a high incidence of large trees that provide suitable structure for nesting and roosting. No late-seral forests are present within the project site. Further, no spotted owls have been detected in the proposed project site or spotted owl activity centers located in proximity to the proposed project. No impacts to northern spotted owls are expected.

Western Gray Squirrel. 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). Contiguous forest habitat located on the project site would not persist indefinitely in the absence of the proposed project. 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 are expected to be negligible.

Northern Goshawk. Goshawks inhabit a wide variety of forest habitats, including true fir, mixed conifer, montane riparian deciduous forest and Douglas fir forests. Goshawk nest sites tend to be associated with patches of relatively large, dense forest located in proximity to water; however, home ranges often consist of a wide range of forest age classes and conditions. Although no goshawks were detected during protocol surveys, individuals were spotted during general avian migration and breeding surveys. Potential impacts to this species may include turbine collision-related mortality or displacement; however, the risk for this species is considered low.

Potential operation-related impacts to avian species include turbine collision and displacement. The data collected from the project site indicate that the area is not within a major migratory pathway, at least during fall migration.

Based on the two seasons of surveys plus two season studies by Klickitat County (Kennedy Jenks 2003), overall use of the project site by golden eagle, northern goshawk, pileated woodpecker, prairie falcon, and willow flycatcher was very low. Adverse impacts to these species are not anticipated. Of the species that were commonly observed, turkey vultures have very low susceptibility to turbine collisions (Orloff and Flannery 1992). To date, this species has not been documented as a turbine fatality in the Pacific Northwest. Vaux's swifts, western bluebirds, 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. These collisions would likely be rare, and it is unlikely that the Whistling Ridge Energy 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 surveys conducted during high activity periods over two years, 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). Data collected to date on species composition, activity patterns, and habitat use indicates that adverse impacts to bats are not anticipated as a result of the proposed project. Data collected during 2009 surveys will improve our understanding of bat use and activity patterns, and help to refine our assessment of the degree of impacts.

Mule deer, black-tailed deer, and elk may be displaced temporarily from winter range if the timing of construction activities coincides with use of these habitats. Construction-related displacement is expected to be of short duration. Because data on operational impacts to big game as a result of wind farm 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 Washington Department of Fish and Wildlife (WDFW) is ongoing, and will continue to address this resource.

I.5.6 Noise

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 insignificant.

The two nearest residences to the turbines are located 0.48 mile (2,560 feet) and 0.8 mile (4,265 feet) away. In addition, an application has been submitted for a new homesite that would be located approximately 0.38 mile (2,000 feet) from the nearest turbine. Existing noise levels range are 34 to 35 A-weighted decibels (dBA) at night, and 38 dBA during the daytime. With the project, night time noise levels could increase to 39 to 43 dBA, and 40 to 43 dBA during the day. These levels are considered to be low under applicable State standards.

I.5.7 Land Use

The project is consistent with existing and proposed zoning and comprehensive plan designations, and no impacts to land use are anticipated.

I.5.8 Visual Resources

The project has the potential to create low to moderate levels of visual impact at most key viewpoints. Selected viewpoints have been included in Section 4.2.3 Aesthetics of the Application that represent a variety and range of views in the project area. The photos used for the simulations show the worst-case seasonal conditions for visual contrast between the wind turbines and the primarily green and brown landscape backdrop. The period with the least visual contrast is anticipated to occur when there is snow cover and gray skies.

I.5.9 Recreation

It is expected that the project would not “unreasonably diminish the scenic, recreational, and fish

and wildlife values present in the area” (Wild and Scenic Rivers Act, 16 United States Code 1271-1287), so no impacts to wild and scenic rivers would occur. The project would not have a direct impact on any recreation area as measured by impairing access, diminishing use, or restricting planned installations and improvements. The project would affect the visual experience of visitors in some locations (see Figure 4.2-27 Key Recreation Viewing Areas and Recreational Facilities within Approximately 25 Miles). See 4.2.3 Aesthetics for more information about visual and aesthetic qualities and impacts.

I.5.10 Historic and Cultural Resources

No archaeological sites or historic properties were identified in the project area during the field inventory. All previously documented archaeological sites in the project vicinity are located well outside of the project area. Construction or operation of the proposed facilities would not result in impacts to known/recorded cultural resources. Traditional cultural properties are not known to exist in the project area and no impacts are anticipated.

I.5.11 Transportation

Access to the proposed project site would be provided through the existing County and private roadway network. Access to all proposed wind tower locations would require road improvements and limited new road construction within the project area. In addition to approximately ~~7.27~~^{7.27.9} miles of existing private logging roads that would require improvement, approximately 2.4 miles of new private gravel access roads would need to be constructed. The new gravel roadways would extend toward and run along the turbine strings, and would be designed and constructed according to the County private roadway standards. The new private roadways that extend toward the turbine strings would be designed for a minimum drivable section width of 25 feet with allowance for side slope and drainage.

The new private roadways that would run 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 will be on site to assemble the tower sections, the nacelles, and blades. None of the newly constructed roads would need to be paved, but they would require an all-weather driving surface.

During construction, there would be an average of 143 workers on site, and a maximum of 265 workers at the site daily. Estimated traffic volumes include existing local traffic, construction workers and vehicles, and over-size and over-weight trucks. Approximately 65 to 75 percent of the construction labor force would most likely be hired from the cities of Portland and Vancouver. Approximately 25 to 30 percent of the workers would likely be residents of Skamania, Klickitat, and Hood River counties. The respective percentages are based on the relative populations in the cities of Portland and Vancouver when compared to Skamania, Klickitat, and Hood River Counties. All construction workers are expected to commute up to approximately 60 miles each way daily to and from the proposed project site.

During the one-year construction period, there would be over-size and over-weight trucks transporting large wind energy components to the proposed project site throughout the day. Over-

size and over-weight trucks are only expected during an approximate two to three month period when the wind energy components are transported to the proposed project site. It is expected that during the AM peak hour, approximately 30 construction vehicles would travel through the junction of SR 14 and Cook-Underwood Road. During the afternoon peak hour, as many as 10 construction vehicles could travel through this junction.

Peak-hour LOS analyses were completed for the junction of SR 14 and Cook-Underwood Road using estimated ~~2010-2011~~ traffic volumes. The results indicate that estimated ~~2010-2011~~ traffic volumes, including construction vehicles, would have a minimal impact on the operations of the intersection of SR 14 and Cook-Underwood Road. Delays would increase slightly (approximately 4 to 5 seconds per vehicle) for vehicles turning left or right from Cook-Underwood Road over estimated ~~2008-2009~~ operations. The southbound approach on Cook-Underwood Road at SR 14 ~~also has would experience degradation-degraded~~ in level of service from A to B over estimated 2008 operations, and would remain at LOS B in 2011 with construction traffic..

I.5.12 Socioeconomics

The project would generate new local employment, additional business for local service and materials providers, and additional tax revenues to Skamania County and the state. The overall permanent socioeconomic impact of the project would be positive.

Construction

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. Eight to nine permanent full- or part-time Operations and Maintenance staff would be required once the project is operational.

Whistling Ridge Energy Project local procurements² for construction materials, services and equipment leasing associated with construction are projected to total approximately \$13.2 million. These procurements would augment the revenues of many construction-related businesses in Skamania County and the three-county area in general. In addition, the consumption spending of local project workers and their households out of their wages and salaries would stimulate the retail trade and services sector of the local and regional economies. Total payroll costs for project construction, including fringe benefits and other labor overhead costs, are projected to be approximately \$18 million, of which approximately \$4.5 million is expected to be earned in the three-county area including Skamania, Klickitat, and Hood River Counties.

An analysis of the primary and secondary effects of these construction spending streams within the three-county area reveals that indirect and induced value added from construction would be \$3.9 million, and that 71 indirect and induced jobs would be attributable to construction. The total economic impact (direct, indirect, and induced) is expected to be \$8.5 million in value added and

² Local procurements are procurements that would occur with the three-county area including Skamania, Klickitat, and Hood River Counties.

107 jobs (IMPLAN 2008). Project construction would create a total of 107 jobs in the three-county area, which would continue throughout the construction period.

The total cost of construction is estimated to be approximately \$150 million. In addition to the local area procurements mentioned above, the Applicant would purchase large amounts of wind power generation equipment 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.

The local procurements are estimated to be 10 percent of total procurements (approximately \$13.2 million). The majority (estimated at 90 percent) of local procurements would be directly related to electricity generation. Taxable sales due to project construction would therefore be approximately \$1.32 million, resulting in \$92,400 in sales and use tax revenue for Washington State and Skamania County taxing districts.

The Skamania County sales and use tax rate for the unincorporated area is 7.0 percent, meaning that after the state government's share of 6.5 percent, a remaining 0.5 percent goes to the County. Due to the project's location within the unincorporated area of Skamania County, Skamania County would receive \$6,600 of the \$92,400 in sales and use tax revenues related to project construction. This one-time influx of revenue (\$6,600) would represent an increase of one percent when compared to the sales and use tax collected in Skamania County during calendar year 2007 (\$630,515) (WDOR 2008). These positive fiscal impacts to the County and the State would be a one-time occurrence resulting from project construction activities.

Modest increases in sales of goods and services would occur during construction, such as local purchases by construction workers. Sales tax revenues resulting from these types of purchases would be beneficial and small within the context of the Skamania County economy.

Operation

The estimated gross payroll (including fringe benefits and other payroll overheads) for the operational workforce is \$1.5 million, or an average annual labor cost of \$167,000 to \$188,000 per employee. This is approximately 25 percent higher than the standard industrial wage for this industry in Skamania County (IMPLAN 2008). In addition to the regular operational workforce, a temporary workforce with appropriate skills would be utilized during major maintenance or other non-routine operational work.

Using IMPLAN regional economic modeling software for the power generation and supply industry in the three-county area including 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, which would include direct purchases from suppliers (including fuels, maintenance supplies and services, retail goods and professional services). Sales, use and other indirect business taxes on that level of spending are estimated at \$200,000 (IMPLAN 2008) per year, which would accrue to state and local government jurisdictions. Employee spending from salaries and wages is estimated at around \$900,000 per year, assuming an average local expenditure rate of

70 percent of compensation.

An increase in the tax base equal to the numbers of turbines multiplied by an estimated value of \$1.75 million per turbine (\$87.5 million) would represent an increase of 6.5 percent in assessed value in the County. Using the average 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 and would represent a permanent, annual increase of 7.6 percent compared to the amount of property tax collected (current and delinquent) in calendar year 2007 (\$9.6 million) (WDOR 2008). Property tax revenues would be higher to the extent that increased wages and economic activity in the County results in higher valued properties.

These additional and permanent annual revenues could help satisfy the need for alternate funds to replace decreasing federal funding. Assuming that the annual tax revenue of \$731,500 would be distributed among funds, 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). A portion of the State School Fund would be returned to Skamania County for Skamania County schools (L. Moore, personal communication).

I.5.13 Housing

The approximately 15 percent of the construction work force that would be specialized craftsmen originating outside of Washington and Oregon would likely have relatively short assignments, so few are expected to bring their families with them when they arrive to work on the project. The population increase in the project area and elsewhere in the three-county area would therefore be limited mainly to these workers for a temporary period of time, plus, during the work week, the non-local workers who would temporarily commute on a weekly basis from the Portland-Vancouver area.

The total estimated number of workers requiring transient housing would be 52 (average) and 97 (peak) over the 12-month construction period, assuming that one-third of the workers from the Portland-Vancouver metropolitan area would commute on a weekly basis and the specialized, temporary staff also would require lodging. These construction workers are 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. Approximately 1,082 hotel rooms or RV campsites exist within 25 miles of the project site. Assuming 70 percent occupancy, approximately 325 of these units (313 hotel rooms) would be available at any one time. Assuming a worst-case scenario that workers would want hotel or motel lodging, the peak demand of 97 rooms (assuming, again a worst-case scenario that no workers would share rooms) would represent approximately 31 percent of the available rooms and would therefore not stress the lodging facilities within 25 miles. Construction of the proposed project is not expected to result in a significant impact on transient accommodation availability in the project vicinity, nor is the project expected to affect median housing values, median gross rents, or new housing construction. The applicant has no plans to provide on-site temporary housing for workers or shuttle to or from hotels or other temporary lodging facilities.

I.5.14 Public Services

The influx of construction workers into project area communities on a daily and weekly basis could result in a minor and temporary increase in the demand placed on public service providers. This increase in demand could have a minor and temporary effect on local police departments, providers of emergency medical services, and local fire departments. The contractor would develop emergency plans for project construction.

The impact of project construction on local schools would be at most minor and temporary, as few out-of-state construction workers are likely to be accompanied by families. Construction-related impacts to local utilities also are expected to be minor and temporary.

Response times in the project vicinity are not expected to change due to project construction. Construction trucks would represent additional volume on area roads, but would not deter any emergency vehicles from travel. The project would be constructed entirely within land managed for commercial forestry by the Applicant.

Anticipated water uses during construction include spraying roads for dust control, construction support (such as concrete curing and hydrostatic testing of equipment), and restroom facilities for construction and support workers (estimated average of 143 and peak of 265 workers). Water needed for construction will be purchased by the contractor from an off-site vendor with a valid water right and transported to the project site in water-tanker trucks.

The needs of public service providers are considered in Section 4.3 Transportation. Section 4.2.4 Recreation addresses the potential for impacts on parks and other recreational facilities.

I.6 AGENCY CONTACTS MADE TO DATE

The Applicant has been actively involved in meeting and consulting with local and state agency personnel and with Tribal leaders during the preparation of studies supporting this Application. A summary of the key contacts made to date are listed in this section.

I.6.1 Local Government

- ***City of Bingen (January 2009)***. Consulted with city administrator to obtain information stating that there are currently no load restrictions in place for Maple Street in the City of Bingen, Washington. Additional information was provided stating that there is a significant increase in traffic volumes during the summer months due to recreational activities in the local area.
- ***Klickitat County Public Works Department (January 2009)***. Obtained the county “Resolution to Designate Haul Routes” document that could be used as a haul route agreement template for the project by Skamania County. The document was forwarded to Skamania County for review.

- ***Skamania County Planning Department.*** Three pre-application conferences were held between 2004 and 2008 with Karen Witherspoon and staff (including meetings on March 24, 2006 and August 22, 2007).
- ***Skamania County Public Works Department.*** Pre-application meetings with County Road Engineer and Building Inspector took place (also present in meeting with Planning Department on August 22, 2007). In addition, the Skamania County Public Works Department Manager, the County Engineer, and the Maintenance Superintendent were consulted to better understand existing roadway conditions, the proposed haul route, and traffic patterns. Information obtained included:
 - Contacting Skamania County Public Utility District and Embarq, the local telephone service provider
 - Contacting the Burlington Northern Santa Fe Railroad to get a determination on weight restrictions for the tracks that cross Maple Street in the City of Bingen, Washington
 - Average daily traffic on Cook-Underwood Road at approximately milepost 12. They also stated that the intersection of Cook-Underwood Road and Kollock-Knapp Road is located at approximately milepost 10 to 10.5
 - Recommendation that right of way ownership and easements be determined early on in the planning process
 - Requirement that both pre and post construction roadway inspections would need to be conducted along the haul route and that one additional roadway inspection would be required at one year post construction
- ***Skamania County Assessor.*** Phone and office discussions regarding tax benefits to Skamania County from a potential wind energy project.
- ***Skamania Economic Development Council.*** Various meetings and discussions regarding economic development and wind energy.
- ***Skamania Public Utility District.*** Meeting with Commissioners and General Manager (Bob Wittenberg) regarding Skamania Public Utility District system vulnerability to interruption by BPA and benefits to be realized by a potential wind energy project in Skamania County.
- ***Underwood Fire District.*** Meeting with Fire Commissioners to discuss service agreement for potential wind energy project.
- ***Mill A Volunteers.*** Meeting with members to discuss possible formation of Fire District and inclusion of potential wind energy project.

I.6.2 State Government

- **Washington Department of Archeology and Historic Preservation.** File search for historic and cultural properties within or near the project site.
- **WDFW.** Meetings with WDFW included:
 - Meeting February 26, 2004 with Bill Weiler, Habitat Biologist and Liane Wedemeter of US Fish and Wildlife Service to discuss survey methods and results of wildlife surveys completed to date, and to discuss future surveys
 - Meeting and site tour November 16, 2007 to discuss survey methods and results of additional wildlife surveys completed to date.
 - Several information exchanges with Area Habitat Biologist (Bill Weiler) to discuss project impacts, review survey results, and discuss survey protocols.
 - Several follow-up meetings with Travis Nelson and Greg Huckel of WDFW during June, July and August of 2009 to continue the discussion and consultation on wildlife.
- **Washington State Department of Natural Resources.** Meeting and discussions with staff regarding application to lease adjoining Department of Natural Resources property for wind energy purposes.
- **Washington State Department of Transportation, Goldendale Office.** Discussed information relating to over-size and over-weight vehicles traveling on SR 14. They stated that the current prohibition for loads in excess of 125 feet including the trailer and load between mileposts 19.00 and 83.53 could be over-ruled for trucks traveling between the SDS Lumber Company facility and the junction of SR 14 and Cook-Underwood Road. The Goldendale office must be contacted prior to any over-size hauls. Pilot cars would be required and Washington State Patrol involvement may be required.
- **Washington State Department of Transportation, Southwest Region Office.** Discussed information relating to Road and bridge restrictions for over-size and over-weight motor vehicles traveling on SR 14 and over-size and over-weight load permit requirements.

I.6.3 Federal Government

- **Bonneville Dam Project Office (January 2009).** Obtained information on lockage length and width parameters as well as average daily usage numbers for the months of May through October.
- **Bonneville Power Administration.** Meetings with BPA included:
 - Meeting on August 22, 2007 as part of pre-application conference with Skamania County Planning Department.

- Meeting on September 30, 2008 with Rick Yarde to discuss National Environmental Policy Act process and Tribal consultation.
- ***US Fish and Wildlife Service.*** Meetings with USFWS included:
 - Meeting February 26, 2004 with Bill Weiler, Habitat Biologist and Liane Wedemeter, US Fish and Wildlife to discuss survey methods and results of wildlife surveys completed to date, and to discuss future surveys.
 - Ongoing consultation with Ken Berg, Jim Michaels and Mark Ostwald of USFWS to discuss survey work and results.

I.6.4 Tribal Government

- Letter sent to Yakama Nation Cultural Resources Department.
- Site tour and consultation with local Tribes of Yakama Nation (see Appendix F).
- Communication with Yakama Nation Cultural Resources Program concerning consultation and survey assistance.

I.6.5 Railroad

- ***Burlington Northern Santa Fe Railroad.*** Transportation Technology Services provided rail car length, width, and weight parameters as well as transport restrictions between the Port of Longview and the SDS Lumber facility.