

1.1 INTRODUCTION

Wind Ridge Power Partners, LLC (the Applicant) is proposing to build the Wild Horse Wind Power Project (“Project”), a renewable energy generation facility that will consist of up to 158 wind turbines and have an installed nameplate capacity of up to 312 megawatts (MW). The Project features a highly energetic, well documented wind resource, state-of-the-art, megawatt-class wind turbine generators, and experienced development and operations teams. The Applicant proposes to construct the Project in central Washington’s Kittitas Valley, which has long been known for its vigorous winds. The Project will be built on high open ridge tops between the towns of Kittitas and Vantage in the eastern end of Kittitas Valley. A map showing the Project area location is presented in Exhibit 1-A, ‘Project Area Overview’. The Project site has been selected primarily for its energetic wind resource and its access to existing high voltage transmission lines, which have adequate capacity to allow the wind generated power to be integrated into the power grid system.

The Project consists of several prime elements which will be constructed in consecutive phases including roads, foundations, underground and overhead collection system electrical lines, grid interconnection substations, step-up substations, feeder lines running from the on-site step-up substations to the interconnection substations, an operations and maintenance (O&M) center and associated supporting infrastructure and facilities. A permanent footprint of approximately 165 acres of land area will be required to accommodate the proposed turbines and related support facilities. A site layout illustrating these key elements is contained in Exhibit 1-B, ‘Project Site Layout’.

The Project is designed to provide low cost renewable electric energy to meet the growing needs of the Northwest. The Project has transmission and interconnection requests under review with the Bonneville Power Administration (BPA) and Puget Sound Energy, and Applicant is in the process of marketing the electrical energy sales into the local and regional power market. The Washington State Energy Facility Site Evaluation Council (EFSEC) has jurisdiction over the evaluation of energy facilities such as the Wild Horse Wind Power Project, and is responsible for making a recommendation to the Governor regarding approval or denial of their siting.

1.2 PURPOSE AND NEED FOR THE PROJECT AND ASSOCIATED FACILITIES

The purpose of the Wild Horse Wind Power Project is to construct and operate a new electrical generation resource using wind energy that will meet a portion of the projected growing regional demands for electricity. In the Pacific Northwest Electric Power Planning and Conservation Act, Congress established that development of renewable resources should be encouraged in the Pacific Northwest (16 USC § 839[1][B]). The Act defines wind power as a renewable resource (§ 839a[16]).

1.2.1 Need for Additional Power Generation Facilities

Recent national and regional forecasts predict increasing consumption of electrical energy will continue into the foreseeable future, requiring development of new generation resources to satisfy the increasing demand. The Energy Information Administration published a national forecast of electrical power through the year 2025. In it, the administration projected that total electricity demand would grow between 1.8 and 1.9% per year from 2001 through 2025. Rapid growth in electricity use for computers, office equipment, and a variety of electrical appliances in the residential and commercial sectors is only partially offset by improved efficiency in these electrical applications (U.S. Energy Information Administration 2003).

The Western Electricity Coordinating Council (WECC) forecasts electricity demand in the western United States. According to WECC's most recent coordination plan, the 2001-2011 summer peak demand requirement is predicted to increase at a compound rate of 2.5% per year (WECC 2002).

Based on data published by the Northwest Power and Conservation Council (NWPPCC), electricity demand for the Council's four-state Pacific Northwest planning region (Washington, Oregon, Idaho, and Montana) was 20,080 average MW in 2000 (NWPPCC 2003).

As shown in Table 1-1, the Council's recently revised 20-year demand forecast projects that electricity demand in the region will grow from 20,080 average MW in 2000 to 25,423 average MW by 2025 (medium forecast), an average annual growth rate of just less than 1% per year. While the Council's forecast indicates that the most likely range of demand growth (between the medium-low and medium-high forecasts) is between 0.4 and 1.50% per year, the low to high forecast range used by the Council recognizes that growth as low as -0.5% per year or as high as 2.4% per year is possible, although relatively unlikely (NWPPCC 2003).

Table 1-1: Projected Pacific Northwest Electricity Demand, 2000-2025

| Forecast Scenario | Electricity Demand (Average Megawatts) | | | Growth Rates (% Change) | |
|-------------------|--|--------|--------|-------------------------|-----------|
| | 2000 | 2015 | 2025 | 2000-2015 | 2000-2025 |
| Low | 20,080 | 17,489 | 17,822 | -0.92 | -0.48 |
| Medium | 20,080 | 19,942 | 21,934 | -0.05 | 0.35 |
| Low | | | | | |
| Medium | 20,080 | 22,105 | 25,423 | 0.64 | 0.95 |
| Medium | 20,080 | 24,200 | 29,138 | 1.25 | 1.50 |
| High | | | | | |
| High | 20,080 | 27,687 | 35,897 | 2.16 | 2.35 |

Source: NWPCC 2003

Generated power typically requires interconnection with a high-voltage electrical transmission system for delivery to purchasing retail utilities. The Applicant has submitted requests for transmission interconnection services for the Project to both Puget Sound Energy (PSE) and Bonneville Power Administration (BPA). The Project would connect to either the PSE or BPA transmission systems that run in close proximity to the Project site along of the following lines:

- Puget Sound Energy's Intermountain Power 115kV line, portions of which will be upgraded to 230 kV and intertie to Mid-C;
- Bonneville's Grand Coulee to Olympia 287-kV line;
- Bonneville's Columbia to Covington 230-kV line.

In summary, electrical consumers in the Northwest need increased power production to serve the predicted long-term increasing demand and high-voltage transmission lines to deliver the power.

1.2.2 Wind Power Project Purpose and Need

Washington and the Northwest region face a growing medium and long term demand for power. Many regional utilities are currently seeking to acquire new generating resources to meet their loads. More specifically, several regional utilities, including Avista, Puget Sound Energy (PSE), and PacifiCorp (doing business as Pacific Power in Washington) have all completed detailed studies and demand forecasts of their own systems as part of their Integrated Resource Plans (IRP) or Least Cost Plans (LCP) process with oversight from the WUTC (Washington Utilities and Transportation Commission). As a result of their formal IRP or LCP processes, PSE, PacifiCorp and Avista have issued Requests for Proposals (RFPs) specifically for wind power and/or other renewable resources. Avista is seeking to acquire 50 MW, PSE is seeking to acquire at least 150 MW and PacifiCorp

is seeking to acquire 500 MW. There is thus a regional demand for wind generated energy that greatly exceeds the existing regional supply.

The proposed Wild Horse Wind Power Project is intended to help meet this growing regional demand for renewable, wind-generated electricity.

1.2.3 Transmission Feeder Line Purpose and Need

In order to deliver the energy generated by the Project to customers, the Project must be interconnected with the high voltage transmission grid. The nearest existing transmission lines of the appropriate voltage for interconnecting a project of this size are the PSE 115kV Intermountain Power line to the south of the Project site and the BPA Schultz to Vantage 500 kV line west of the Project site. In order to interconnect with these existing transmission lines, it is necessary to construct new feeder lines between the Project site and these existing lines.

1.3 DECISIONS TO BE MADE

This Application for Site Certification document will be used by EFSEC to develop a draft Environmental Impact Statement (DEIS) and to review the proposed Project.

EFSEC has jurisdiction over all of the evaluation and licensing steps for siting major energy facilities in the State of Washington. Once approved by the Governor, EFSEC's Site Certification Agreement acts as an "umbrella" authorization that incorporates the requirements of all State laws and regulations. Through its review EFSEC coordinates the comments and interests of State agencies that participate in the EFSEC review process. EFSEC will issue the Final Environmental Impact Statement (FEIS) and make a recommendation to the Governor to approve or deny the Wild Horse Wind Power Project.

1.4 DESCRIPTION OF ALTERNATIVES

1.4.1 Proposed Action

The proposed action is to construct and operate a wind power project located on high open ridge tops between the towns of Kittitas and Vantage at a site located in the Kittitas Valley. The Wild Horse Wind Power Project (the “Project”) will include wind turbine generators (WTGs) that will be constructed in rows along the open ridge tops of Whiskey Dick Mountain. The size and number of wind turbines to be used for the Project depends on a number of factors including wind turbine economics and availability at the time of construction. The resulting nameplate capacity of the Project will depend on the final model and nameplate rating of turbine selected. In order to examine the full range of potential impacts from the Project, this Application for Site Certification (ASC) defines and evaluates the full range of possible turbines from the smallest turbines and towers to the tallest turbines and towers. Additionally, a most likely turbine scenario has been studied to evaluate and examine the most likely Project impacts. The Project configurations are summarized as follows:

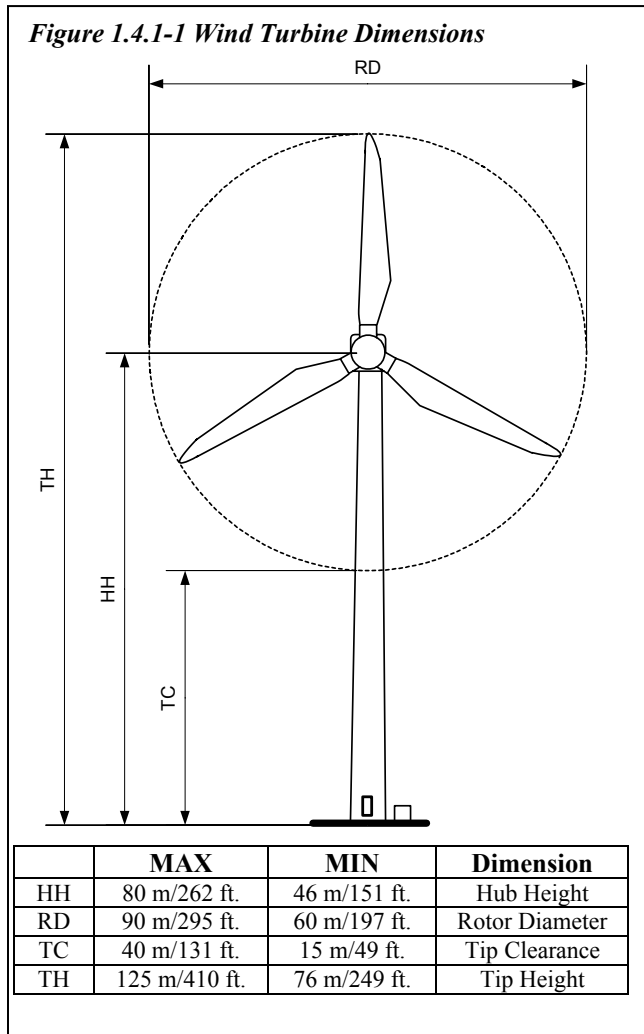
- Most Likely Scenario: 136 WTGs with 70.5 meter rotors:
The Most Likely Case scenario represents the most likely Project configuration, using WTGs with a generator nameplate rating of 1.5 MW and a rotor diameter of 70.5 meters. Up to 136 turbines of this size would be used for a total nameplate capacity of 204 MW.
- Small WTG Scenario: 158 WTGs with 60 meter rotors:
The Small WTG scenario represents a Project configuration that would utilize a larger number of smaller WTGs with 60 meter diameter rotors and a generator nameplate rating of 1 MW. Up to 158 small turbines would be used for a total nameplate capacity of 158 MW.
- Large WTG Scenario: 104 WTGs with 90 meter rotors:
The Large WTG scenario represents the Project configuration that would utilize fewer, larger capacity WTGs with a generator nameplate rating of 3.0 MW and a 90 meter diameter rotor. Up to 104 large turbines would be used for a total nameplate capacity of 312 MW.

Figure 1.4.1-1 illustrates the range of turbines examined under this ASC which is also summarized in Table 1.4.1-1. The study work performed to support this ASC is similar to that done for transmission line projects which study a defined corridor with various tower or pole sizes. For the Project however, there will not be a mix of turbine sizes, but rather, one consistent size of turbine and tower used. Regardless of the size of turbine used, the Project will occupy a permanent footprint of approximately 165 acres of land.

Table 1.4.1-1 Project Scenario Summary

| | MOST LIKELY Scenario 70.5 m Rotor | SMALL WTG Scenario 60 meter Rotor | LARGE WTG Scenario 90 meter Rotor |
|-----------------------------------|--|--|--|
| Turbine Nameplate | 1.5 MW | 1 MW | 3 MW |
| Number of WTGs | 136 | 158 | 104 |
| Project Nameplate | 204 MW | 158 MW | 312 MW |
| Total Permanent Footprint Approx. | 165 acres | 165 acres | 165 acres |
| Miles of Road Approx. | 32 miles | 32 miles | 32 miles |

Figure 1.4.1-1 Wind Turbine Dimensions



The facilities, equipment, and features to be installed as part of the Project include:

- approximately 17 miles of new roads,
- improvements to roughly 15 miles of existing roads,
- approximately 27 miles of underground 34.5-kV collection system power lines,
- approximately 2 miles of overhead 34.5-kV collection system power lines,
- approximately 14 miles of overhead 230-kV transmission feeder lines,
- one or two step-up substations,
- one interconnection substation,
- an operations and maintenance (O&M) facility of approximately 5,000 square feet,
- parking area for the O&M facility approximately 300' x 300',
- a visitor's kiosk,
- up to six permanent meteorological towers.

The Project will be constructed across a land area of approximately 8,600 acres in Kittitas County, although the actual permanent facility footprint will comprise approximately 165 acres of land under any of the scenarios. This is because there is no change to the length or width of the Project component footprints, including the roads, substations, O&M facilities, rock quarries, underground or overhead lines, permanent met towers, batch plant, or rock crusher under the different scenarios. Such components comprise the vast majority of acreage impacted by the Project, and because they remain unchanged under all scenarios, the total acreage and construction quantities are very similar under all scenarios. The acreages and construction quantities are very similar under all scenarios because the scenarios utilize the same beginning and end points for each turbine row corridor. For a specific comparison of the relative areas impacted under each scenario, refer to Table 3.1.2-2: Comparison of Area Impacts of the Proposed Scenarios.

Similar to the environmental analysis performed for gas power projects which examine the full range of potential emissions such as SO_x, NO_x, CO and CO₂ from various sizes and types of gas turbines, Applicant has fully analyzed the entire range of potential impacts and described all environmental effects from the full range of sizes and types of wind turbines. Within each Section of Chapter 3 of this ASC, the potential impacts to earth, air, water, wildlife, socioeconomics, public health and safety, and other elements of the environment have been examined for the full range of sizes and numbers of WTGs.

The Applicant requests that the Project be permitted to allow construction and operation within the entire range of turbine size and numbers presented, for which the impacts have been fully analyzed. This will enable the Applicant to choose the best wind turbine for the Project, based on technical and commercial considerations at the time of construction.

1.4.2 Alternatives Considered

1.4.2.1 Project Alternatives

Consideration was given to the following alternatives:

- Alternative power generation technology,
- Alternative wind turbine design,

Details of the consideration of these alternatives and the reasons for their rejection are given in Section 2.3, 'Alternatives'.

1.4.2.2 Site Alternatives

As described in Section 1.2, 'Purpose and Need for the Project and Associated Facilities', the objective of the Wild Horse Wind Power Project is to construct and operate a wind energy generation resource to meet a portion of the projected growing regional demand for new energy resources. The Energy Information Administration projects that total electricity demand would grow between 1.8 and 1.9% per year from 2001 through 2025. The Western Electricity Coordinating Council (WECC) forecasts the 2001-2011 summer peak demand requirement to increase at a compound rate of 2.5% per year (WECC 2002). Based on data published by the Northwest Power and Conservation Council (NWPPCC), electricity demand for the Council's four-state Pacific Northwest planning region (Washington, Oregon, Idaho, and Montana) was 20,080 average MW in 2000 (NWPPCC 2003).

Washington and the Northwest region face a growing medium and long term demand for power. Many regional utilities are currently seeking to acquire new generating resources to meet their loads. More specifically, several regional utilities, including Avista, Puget Sound Energy (PSE), and PacifiCorp (doing business as Pacific Power in Washington) have all completed detailed studies and demand forecasts of their own systems as part of their Integrated Resource Plan (IRP) or Least Cost Plan (LCP) process with oversight from the WUTC (Washington Utilities and Transportation Commission). As a result of their formal IRP or LCP processes, PSE, PacifiCorp and Avista have issued Requests for Proposals (RFPs) specifically for wind power and/or other renewable resources. Avista is seeking to acquire 50 MW, PSE is seeking to acquire 150 MW and Pacificorp is seeking to acquire 500 MW. There is thus a regional demand for wind generated energy that greatly exceeds the existing regional supply.

The proposed Project is intended to help meet this growing regional demand for renewable, wind-generated electricity.

The Kittitas Valley Wind Power Project is not considered a reasonable alternative to the Wild Horse Project since neither Project, on its own, can meet the forecasted or immediately requested demand for power in the region. Also, neither Project could be increased in size, on its own, to generate the same amount of energy output as can be cost-effectively generated by constructing both projects. Therefore, doubling the size of one project is not a reasonable alternative to constructing both projects.

1.4.2.3 No Action Alternative

Under the No Action Alternative, the Project would not be constructed or operated, and the environmental impacts described in this EIS would not occur. The No Action Alternative assumes that future development would comply with existing zoning requirements for the Project area, which is zoned Commercial Agriculture and Forest and Range. According to the County's zoning code, the Commercial Agriculture zone is dominated by farming, ranching, and rural lifestyles, and permitted uses include residential uses, green houses, and agricultural practices. Permitted uses in the Forest and Range zone include logging, mining, quarrying, and agricultural practices, as well as residential uses (Kittitas County 1991). However, if the proposed Project is not constructed, it is likely that the region's need for power would be addressed by some combination of user-end energy efficiency and conservation measures, by existing power generation sources, or by the development of new renewable and non-renewable generation sources. Base load demand would likely be filled through the expansion of existing, or development of new, thermal generation such as gas-fired combustion turbine technology. Such development could occur at conducive locations throughout the state of Washington.

A base load natural gas-fired combustion turbine would have to generate 67 average MW of energy to replace an equivalent amount of power generated by the Project (204 MW at 33% net capacity). (An average MW or "aMW" is the average amount of energy supplied over a specified period of time, in contrast to "MW," which indicates the maximum or peak output [capacity] that can be supplied for a short period.) Table 2.3.2-1 presents the basic parameters of a hypothetical 67 aMW natural gas-fired combustion turbine.

1.5 SUMMARY OF POTENTIAL IMPACTS AND MITIGATION MEASURES

1.5.1 Introduction

The proposed Project has been designed to minimize all types of impacts to the natural and human environment, as described in Section 2.3, ‘Alternatives.’ Table 1.5.2-1 provides a summary of proposed mitigations for all elements of possible impact in terms of studies to avoid impacts, Project design features, construction practices and operations practices.

1.5.2 Additional Mitigation for Project Impacts to Habitat, Vegetation, and Wildlife

The Applicant has proposed to mitigate for all permanent and temporary impacts to habitat caused by the Project in accordance with the ratios outlined in the WDFW Wind Power Guidelines (WDFW, August 2003). A mitigation parcel has been identified within the 8,600-acre Project area. The mitigation parcel is T18N, R21E, Section 27, except for the portion of this section that will be developed as part of the Project. String ‘L’ follows a ridgeline that bisects Section 27 from north to south. The area set aside for Project mitigation is estimated at approximately 600 acres. This is more than the required replacement habitat under the WDFW Wind Power Guidelines. The Applicant has agreed to fence this parcel to eliminate livestock grazing, assuming the land ownership and grazing practices of adjacent properties at the time the Project goes into operation will require fencing to remove livestock from this parcel. In addition to Section 27, the Applicant is proposing to fence several springs within the Project area to eliminate livestock degradation. Fencing used for the mitigation parcel and the springs will be designed to keep livestock out but allow game species to cross. The Applicant intends to coordinate with Washington Department of Fish and Wildlife (WDFW) regarding fence specifications.



View of Whiskey Dick Creek in proposed mitigation parcel

As noted above, WDFW has prepared a set of guidelines for wind power projects east of the Cascades in order to provide guidance for siting and mitigation. These guidelines were followed during selection of Section 27 as a mitigation site for the Project. Section 27 provides opportunity for “like-kind” replacement habitat of equal or higher habitat value than the impacted area and it occurs in the same geographical region as the

impacted habitat. Furthermore, since the Applicant has an option to purchase the property if the Project goes forward, the Applicant can provide legal protection and protection from degradation for the life of the Project. Consistent with WDFW’s guidelines, permanent impacts to habitat would be replaced at a ratio equal to or greater than 1:1 for grassland and 2:1 for shrub-steppe.

Additional benefits of Section 27 as a mitigation parcel for the Project include:

- Protection of a segment of Whiskey Dick Creek
- Continuity of habitat with adjacent state lands
- Preservation of a diversity of habitats

Use of Section 27 as a mitigation parcel would result in protection of an approximately 1-mile segment of Whiskey Dick Creek near its headwaters. Protection of waterways and their adjacent riparian habitat provide significant benefits above and beyond replacement of “like-kind” habitat at agreed upon ratios. Protection of this segment of Whiskey Dick Creek provides benefits for water quality, wildlife, and species diversity. In addition, Section 27 is adjacent to state-owned lands. WDNR administers Section 34 to the south and WDFW administers Section 26 to the east. Use of Section 27 for mitigation will provide continuity of habitat with these adjacent state-owned sections. Finally, a variety of habitat types that occur in the general Project area are found in Section 27, so a diversity of habitat types would be preserved. These include shrub-steppe (moderate and dense), herbaceous, herbaceous/rock outcrop, and woody riparian.

| <i>Table 1.5.2-1; Summary of Impacts and Mitigation Measures</i> |
|--|
| EARTH |
| <p>Seismic Hazards - Current engineering standards (UBC) will be used in the design of the Project facilities. These standards require that under the design earthquake, the factors of safety or resistance factors used in design exceed certain values. This factor of safety is introduced to account for uncertainties in the design process and to ensure that performance is acceptable. Application of the UBC in Project design will provide adequate protection for the Project facilities and ensure protection measures for human safety, given the relatively low level of risk for the site.</p> <p>No faults, either active or potentially active, have been mapped in or near the Project site. Based on the lack of faults in the vicinity and the lack of historic seismicity, earthquakes are not considered to pose a significant hazard to the proposed Project.</p> |
| <p>Volcanic Hazards - In the event that a volcanic eruption would damage or impact Project facilities, the Project facilities would be shut down until safe operating conditions return. If an eruption occurred during construction, a temporary shut-down would most likely be required to protect equipment and human health.</p> |
| <p>Erosion - Erosivity of area soils would be mitigated by factors such as grade (i.e., the</p> |

Table 1.5.2-1; Summary of Impacts and Mitigation Measures

majority of soils that would be disturbed by the Project are located on grades of 20 percent or less) and the fact that area soils are well-drained.

Erosion - A detailed construction Storm Water Pollution Prevention Plan (SWPPP) will be developed for the Project to help minimize the potential for discharge of pollutants from the site during construction activities. The SWPPP will be designed to meet the requirements of the Washington State Department of Ecology General Permit to Discharge Storm water through its storm water pollution control program (Chapter 173-220 WAC) associated with construction activities.

Erosion - All construction practices will emphasize erosion control over sediment control through such non-quantitative activities as the following:

- Straw mulching and vegetating disturbed surfaces;
- Retaining original vegetation wherever possible;
- Directing surface runoff away from denuded areas;
- Keeping runoff velocities low through minimization of slope steepness and length; and
- Providing and maintaining stabilized construction entrances.

Landslides - In general, the Project is located in relatively low-gradient topography with a relatively thin veneer of soil that overlies basaltic bedrock. Therefore, risk of a landslide appears to be minimal overall. If slope failure were to occur, the turbine strings are typically situated at a distance from steep slopes and the turbines and their associated foundation structures would not be affected.

Unique Features - In the unlikely event that unique physical or geological features were discovered on-site during construction, construction personnel would stop work at that location and notify the project manager. The project manager would immediately contact appropriate officials at the state historic preservation office to determine an appropriate response.

Contaminated Soils - Applicant commissioned KTA of Seattle, WA to conduct a Phase I Environmental Site Assessment (ESA) of property to be developed. This assessment revealed no evidence of environmental impairment within the Project area. Based on these findings, it is not anticipated that any environmental contamination will be encountered during construction or operation of the Project. In the unlikely event that contaminated soils are encountered, Applicant will coordinate with appropriate personnel at Department of Ecology.

AIR QUALITY

Emissions - All vehicles used during construction will comply with applicable Federal and state air quality regulations.

Emissions - Operational measures such as limiting engine idling time and shutting down equipment when not in use will be implemented.

Table 1.5.2-1; Summary of Impacts and Mitigation Measures

Emissions - Carpooling among construction workers will be encouraged to minimize construction-related traffic and associated emissions.

Dust - Traffic speeds on unpaved access roads will be kept to 25 mph to minimize generation of dust.

Dust - Dust control systems shall be in place and maintained in good operating conditions during all periods of rock crusher and batch plant operation. A water mist will be applied near all emission points along the crushing circuit to control dust. The crusher and batch plant will be shut down when the wind is strong enough that best efforts to keep dust from leaving the pit area are not effective. Stockpiles shall be located to minimize exposure to wind. During cement transfer to the silo, silo exhaust shall be controlled by a properly designed and operated fabric filter device (baghouse). These measures are anticipated to eliminate the possibility of dust plumes within the Project area.

Dust - Dust suppression will be performed around batch plant and rock crushing facilities to prevent buildup of fine materials.

Dust - Disturbed areas will be replanted or graveled to reduce wind-blown dust.

Dust - Active dust suppression will be implemented on construction access roads, parking areas and staging areas, possibly using water-based dust suppression materials in compliance with state and local regulations.

Dust - Erosion control measures will be implemented to limit deposition of silt to roadways.

Operations - No mitigation is proposed for Project operations as there will be no air or odor emissions.

WATER RESOURCES

Ground Water - All excavation and facilities shall be relatively shallow and will not exceed a maximum of 35 feet in depth for the turbine foundations. The roads, tower foundations and other facilities are sufficiently above the water table to avoid any significant impacts to subsurface hydrology and will have no direct effect on groundwater quantity, quality, and flow direction in the immediate area below the proposed facilities. There will be no well installed to service the operation and maintenance facility. Project roads will be designed and surfaced to eliminate impacts to groundwater.

Surface Water - No Project facilities or transmission feeder line poles or trails will be built in or near any streambed, riparian corridor or wetlands. There is one stream, Parke Creek, that the BPA feeder line crosses. To avoid any impacts, the transmission feeder poles will be located at least 200 feet back from the stream bank on either side and no heavy equipment will be used in the stream bed or riparian corridor for construction.

Surface Water - A formal Storm Water Pollution Prevention Plan (SWPPP) specifying the types of erosion control methods that will be used at the site will be designed and

Table 1.5.2-1; Summary of Impacts and Mitigation Measures

submitted to EFSEC for approval prior to construction. After construction is completed, temporarily disturbed areas will be returned as closely as possible to their original state. This excludes the access roads, crane pads, rock quarries, O&M facilities, and parking areas, which will remain in place for the life of the facility. On-site construction management will monitor the area for erosion and implement additional control measures if necessary.

Surface Water - Operational BMPs will be adopted, as part of the SWPPP, to implement good housekeeping, preventive and corrective maintenance procedures, steps for spill prevention and emergency cleanup, employee training programs, and inspection and record keeping practices, as necessary, to prevent storm water pollution.

Examples of good operational housekeeping practices, which will be employed by the Project, include the following:

- Prompt cleanup and removal of spillage;
- Regular pickup and disposal of garbage;
- Regular sweeping of floors;
- HAZMAT data sheet cataloguing and recording; and
- Proper storage of containers.

No Discharge - Operation of the Project will not require the use of any water for cooling or any other use aside from the limited needs of the Operations and Maintenance facility (substantially less than 1,000 gallons per day). There will be no industrial wastewater stream from the facility (only domestic type wastewater from the O&M building which will discharge to an on-site septic system) and thus no wastewater will be used or discharged for Project operations.

Conservation - Environmentally benign dust palliatives such as lignin may be added to water to improve the efficacy of dust suppression and reduce water use during construction.

VEGETATION AND WETLANDS

Studies to Avoid Impacts - The Applicant has commissioned extensive studies by qualified biologists at the Project site to avoid impacts to sensitive populations. These studies, results of which are included as Exhibit 12, include:

- Rare plant surveys;
- Habitat mapping;

The results and recommendations of these studies have been incorporated into the proposed design, construction, operation and mitigation for the Project.

Project Area Habitats - The Applicant has proposed to mitigate for all permanent and temporary impacts to habitat caused by the Project in accordance with the ratios outlined in the WDFW Wind Power Guidelines (WDFW, August 2003). The area set aside for Project mitigation is approximately 600 acres. This is more than the required replacement habitat under the WDFW Wind Power Guidelines. The Applicant has agreed

Table 1.5.2-1; Summary of Impacts and Mitigation Measures

to fence this parcel to eliminate livestock grazing, assuming the land ownership and grazing practices of adjacent properties at the time the Project goes into operation requires fencing to remove livestock from this parcel. In addition to the parcel above, the Applicant is proposing to fence several springs within the Project area to eliminate livestock degradation. Fencing used for the mitigation parcel and the springs will be designed to keep livestock out but allow game species to cross. The Applicant intends to coordinate with Washington Department of Fish and Wildlife (WDFW) regarding fence specifications.

Unique Species - The only unique species or rare plant that may be impacted by the Project is hedgehog cactus, a Washington State Review list species. Access to the site will be controlled during both construction and operations, which should provide greater protection than is currently afforded to this species. As collection of this species for gardens has been cited as a reason for its decline, if such collection becomes a problem at the Project site, the Applicant will post a sign at the visitors' kiosk indicating that collection of any plants in the Project area is prohibited.

Critical Areas/Priority Habitats - Since no Kittitas County critical areas will be impacted by the Project, no mitigation is recommended. Shrub steppe is considered a priority habitat by WDFW. The Applicant has selected a mitigation site that exceeds the WDFW's guidelines for mitigation of shrub steppe for wind power projects east of the Cascades.

Wetlands - There are a few Class 3 wetlands in the form of seeps and springs within the Project area, however, all Project facilities will be located a considerable distance from them to prevent any impacts to these wetlands.

Noxious Weeds - To avoid, minimize, or reduce the impacts of noxious weeds, the following mitigation measures will be implemented:

- The contractor will clean construction vehicles prior to bringing them in to the Project area from outside areas.
- Disturbed areas will be revegetated as quickly as possible with native species.
- Revegetation seed mixes will be selected in consultation with WDFW and Kittitas County Noxious Weed Control Board.
- If hay is used for sediment control or other purposes, hay bales will be certified weed free.
- Access to the site will be controlled which may result in a lower level of disturbance and fewer opportunities for noxious weeds to be introduced and/or spread than is currently the case. Noxious weeds that may establish themselves as a result of the Project will be actively controlled in consultation with the Kittitas County Weed Control Board.

Construction - Construction personnel will be required to avoid driving over or otherwise disturbing areas outside the designated construction areas, and an environmental monitor during construction will be designated to monitor construction

Table 1.5.2-1; Summary of Impacts and Mitigation Measures

activities and ensure compliance with mitigation measures.

AGRICULTURAL CROPS AND LIVESTOCK

Noxious Weeds - As described above in 'Vegetation and Wetlands', an active noxious weed control program will be implemented, in consultation with the Kittitas County Noxious Weed Control Board during both construction and operations to effectively prevent and minimize the introduction and/or spread of invasive species.

Livestock - The land area that will be temporarily disturbed during construction is approximately 360 acres. Of this area, approximately 7.5 acres will be cleared of vegetation. These temporarily disturbed areas will be reseeded after construction with an appropriate native seed mix and is expected to recover over time, particularly given that disturbance corridors are largely linear in nature.

Livestock - The Applicant has agreed to allow controlled hunting within the Project area in coordination with the WDFW in order to allow management of the elk and deer populations and to prevent creation of a sanctuary effect that could lead to greater agricultural damage from big game to farms and ranches in the area.

WILDLIFE

Studies to Avoid Impacts - The Applicant has commissioned extensive studies by qualified biologists of wildlife at the Project site to avoid impacts to sensitive populations. These studies, results of which are included as Exhibit 14, include:

- Habitat mapping;
- Avian use point count surveys;
- Aerial raptor nest surveys;
- Sage grouse surveys
- Big game surveys;
- Non-avian wildlife surveys;

The results and recommendations of these studies have been incorporated into the proposed design, construction, operation and mitigation for the Project.

Project Design - The proposed design of the Project incorporates numerous features to avoid and/or minimize impacts to plants and wildlife. These features are based on site surveys, experience at other wind power projects, and recommendations from consultants performing studies at the site. Features of the Project that are designed to avoid or minimize impacts to wildlife include the following:

- Avoidance of construction in sensitive areas such as streams, riparian zones, wetlands, forested areas;
- Avoidance of placing wind turbines in prominent saddles along the main Whiskey Dick Ridge to minimize potential impacts to raptors;
- Minimization of new road construction by improving and using existing roads and trails instead of constructing new roads;
- Choice of underground (vs. overhead) electrical collection lines wherever feasible

Table 1.5.2-1; Summary of Impacts and Mitigation Measures

- to minimize perching locations and electrocution hazards to birds;
- Choice of turbines with low RPM and use of tubular towers to minimize risk of bird collision with turbine blades and towers;
- Use of bird flight diverters on guyed permanent meteorological towers or use of unguyed permanent meteorological towers to minimize potential for avian collisions with guy wires;
- Equipping all overhead power lines with raptor perch guards to minimize risks to raptors; and
- Spacing of all overhead power line conductors to minimize potential for raptor electrocution.

Project Design - The Project layout (Exhibit 1-B) has been designed to avoid any impacts to streams and riparian areas. Roads, underground cables, turbine foundations, transmission poles and other associated infrastructure will not be located within any riparian areas or streams. In addition, the proposed construction activities for the transmission feeder lines will not involve the use of any heavy equipment in stream beds or riparian areas.

Construction - Applicant proposes the use of construction techniques and Best Management Practices (BMPs) to minimize potential impacts to wildlife. These include the following:

- Use of BMPs to minimize construction-related surface water runoff and soil erosion
- Use of certified “weed free” straw bales during construction to avoid introduction of noxious or invasive weeds;
- Flagging of any sensitive habitat areas (e.g. springs, raptor nests, wetlands, etc.) near proposed areas of construction activity and designation of such areas as “off limits” to all construction personnel;
- Development and implementation of a fire control plan, in coordination with local fire districts, to minimize risk of accidental fire during construction and respond effectively to any fire that might occur;
- Establishment and enforcement of reasonable driving speed limits (max 25 mph) during construction to minimize potential for road kills;
- Proper storage and management of all wastes generated during construction;
- Require construction personnel to avoid driving over or otherwise disturbing areas outside the designated construction areas;
- Limit construction activities during winter months to minimize impacts to wintering big game
- Designation of an environmental monitor during construction to monitor construction activities and ensure compliance with mitigation measures.

Habitat - Temporarily disturbed areas that have been cleared of vegetation will be reseeded with an appropriate mix of native plant species as soon as possible after construction is completed to accelerate the revegetation of these areas and to the prevent spread of noxious weeds. The Applicant will consult with Washington Department of

Table 1.5.2-1; Summary of Impacts and Mitigation Measures

Fish and Wildlife regarding the appropriate seed mixes for the Project area.

Post-Construction Monitoring - The Applicant proposes to develop a post construction monitoring plan for the Project to quantify impacts to avian species and to assess the adequacy of mitigation measures implemented. The monitoring plan will include the following components: 1) fatality monitoring involving standardized carcass searches, scavenger removal trials, searcher efficiency trials, and reporting of incidental fatalities by maintenance personnel and others; and 2) a minimum of one breeding season raptor nest survey of the study area and a 1 mile buffer to locate and monitoring active raptor nests potentially affected by the construction and operation of the Project.

The protocol for the fatality monitoring study will be similar to protocols used at the Vansycle Wind Plant in northeastern Oregon (Erickson *et al.*, 2000) and the Stateline Wind Plant in Washington and Oregon (FPL *et al.*, 2001).

The Applicant proposes to convene a Technical Advisory Committee (TAC) to evaluate the mitigation and monitoring program and determine the need for further studies or mitigation measures. The TAC will be composed of representatives from Washington Department of Fish and Wildlife, EFSEC, Kittitas County, local interest groups (e.g., Kittitas Audubon Society), Project landowners, and the Applicant. The role of the TAC will be to review results of monitoring studies to evaluate impacts to wildlife and habitat, and address issues that arise regarding wildlife impacts during operation of the Project. The post-construction monitoring plan will be developed in coordination with the TAC.

Operations - During Project operations, appropriate operational BMPs will be implemented to minimize impacts to plants and animals. These include the following:

- Implementation of a fire control plan, in coordination with local fire districts, to avoid accidental wildfires and respond effectively to any fire that might occur;
- Establishment and enforcement of reasonable driving speed limits (max 25 mph) during operations to minimize potential for road kills;
- Operational BMPs to minimize storm water runoff and soil erosion;
- Implementation of an effective noxious weed control program, in coordination with the Kittitas County Noxious Weed Control Board, to control the spread and prevent the introduction of noxious weeds;
- Identification and removal of all carcasses of livestock, big game, etc. from within the Project that may attract foraging bald eagles or other raptors;
- Control public access to the site to minimize disturbance impacts to wildlife, especially in the winter months;
- Allow limited and controlled hunting on the site and allow WDFW access to the site to manage big game herds and minimize big game damage to nearby agricultural lands.

FISHERIES

Project Design - The Project layout (Exhibit 1-B) has been designed to avoid any

Table 1.5.2-1; Summary of Impacts and Mitigation Measures

impacts to streams and riparian areas. Roads, underground cables, turbine foundations, transmission poles and other associated infrastructure will not be located within any riparian areas or streams. BMPs will be initiated to retain sediment from disturbed areas and minimize areas of disturbance.

Construction - The proposed construction activities for the transmission feeder lines will not involve the use of any heavy equipment in stream beds or riparian areas.

ENERGY AND NATURAL RESOURCES

Conservation - During construction, conservation measures will include recycling of construction wastes where possible and encouragement of carpooling among construction workers to reduce emissions and traffic.

Conservation - Several conservation measures will be undertaken during operations:

- The O&M facility will utilize station power for electricity needs.
- Water usage at the site will be closely monitored during operations due to the limited capacity of the on-site water storage tank.
- Carpooling and among operations workers will be encouraged.
- Recycling of waste office paper and aluminum will be encouraged.

NOISE

Project Design - Overall, modern wind turbines are typically quiet, especially when compared to their combustion-based alternatives. The noise generated by wind turbines is likely to be most noticeable when wind speeds are low (8-10 mph) at receptors. Wind turbine noise tends to be masked by other background sources (i.e., the sound generated by the wind) at higher wind speeds. Project will comply with WAC 173-60-040, ‘Noise Levels’.

Project Design - Audible noise from the high voltage transmission feeder line(s) will comply with the level specified in 173-60-040 WAC (see Table 3.9.1-3). Lines owned by the Bonneville Power Administration (BPA) will comply with the BPA’s limits, namely an L₅₀ level of 50 dBA at the edge of the right-of-way (Perry, D., Bonneville Power Administration, “Sound Level Limits from BPA Facilities”, BPA memorandum, May 26, 1982.)

Project Design - Substation transformers and high voltage switching equipment shall be specified or designed to comply with the level specified in 173-60-040 WAC (see Table 3.9.1-3) namely the 70 dBA limit at all Class C EDNA (industrial/agricultural) property lines and 60 dBA at all residences (Class A EDNA).

Construction - All noise-generating construction activities will be conducted between the hours of 7 a.m. and 10 p.m. and are therefore exempt from the limits presented in Table 3.9.1-3 (per 173-60-050 WAC). Blasting is anticipated for the foundations and potentially some road areas. Blasting will be conducted only between the hours of 7 a.m. and 10 p.m. and is anticipated to occur over a period of eight weeks. Blasting activities are specifically exempted from the noise regulations (per WAC 173-60-050 (1)(c)).

Table 1.5.2-1; Summary of Impacts and Mitigation Measures

| LAND USE |
|---|
| <p>Project Design - The primary land use in the area, livestock grazing, can continue around Project facilities and transmission feeder lines. Land use impacts associated with construction and operation of the Project and associated transmission feeder lines will be negligible because they will not impair or impact current land uses, change land use patterns, or be incompatible with existing uses or zoning ordinances.</p> |
| <p>Compliance - The proposed Project is not presently in compliance with local land use plans and zoning ordinances. The Applicant will make application for change in, or permission under, Kittitas County land use plans and zoning ordinances and will make all reasonable efforts to resolve the noncompliance. In the event the Applicant's reasonable efforts fail to achieve compliance, Applicant will apply to EFSEC for preemption of such plans and ordinance pursuant to Chapter 463-28 WAC.</p> |
| VISUAL RESOURCES / LIGHT AND GLARE |
| <p>Turbine Appearance - The wind turbine towers, nacelles, and rotors used will be uniform and will conform to the highest standards of industrial design to present a trim, uncluttered, aesthetically attractive appearance.</p> |
| <p>Turbine Color - Turbines will have neutral gray finish to minimize contrast with the sky backdrop.</p> |
| <p>Turbine Reflectivity - A low-reflectivity finish will be used for all surfaces of the turbines to minimize the reflections that can call attention to structures in a landscape setting.</p> |
| <p>Turbine Activity - Because of the wind conditions at the site and the high level of reliability of the equipment being used, the rotors will be turning approximately 80-85% of the time, minimizing the amount of time that turbines will appear to be non-operational, a condition that the public often finds to be unattractive.</p> |
| <p>Turbine Lighting - The only exterior lighting on the turbines will be the aviation warning lighting required by the FAA. It will be kept to the minimum required intensity to meet FAA standards. It is anticipated that the FAA will soon be issuing new standards for marking of wind turbines that will entail lighting far fewer turbines in a large wind farm than is now required, and having all the lights synchronized. These potential regulatory changes are being closely monitored, and if, as is likely, they are made before Project construction begins, the aviation safety marking lighting will be designed to meet these standards.</p> |
| <p>Turbine Shadow Flicker - The Project is not expected to result in any shadow flicker effects for any sensitive receptors due to the distance between the nearest receptors (houses) and the Project's wind turbines. The closest house is almost 2 miles from the nearest proposed wind turbine, which is well beyond the distance at which shadow flicker can cause impacts. A detailed discussion and analysis of the Project's potential to create</p> |

Table 1.5.2-1; Summary of Impacts and Mitigation Measures

shadow flicker, including the results of modeling performed by Wind Engineers, is included as Exhibit 9, 'Shadow Flicker Briefing.'

Equipment Color - The small cabinets containing pad-mounted equipment that will be located at the base of each turbine will have an earth-tone finish to help them blend into the surrounding ground plane.

Electrical System Visibility - Nearly all of the Project's electrical collection system will be located underground, eliminating visual impacts.

Electrical System Appearance - On the small segment of the electrical collection system that will be above ground, simple wooden poles, non-specular conductors (i.e. conductors that have a low level of reflectivity), and non-reflective and non-refractive insulators will be used. This line parallels two sets of overhead high voltage transmission lines and an existing gravel road.

Roads - To the extent feasible, existing road alignments will be used to provide access to the turbines, minimizing the amount of additional surface disturbance required. Where possible, access road widths will be restricted to 20 feet (approximately half of all access road miles.) The access roads will have a gravel surface and will have grades of no more than 15%, minimizing erosion and its visual effects.

Facilities - The O&M facility building will have a low-reflectivity earth-tone finish to maximize its visual integration into the surrounding landscape.

Facilities - The parking areas at the O&M facility will be covered with gravel, rather than asphalt, to minimize contrast with the site's soil colors.

Facilities - Outdoor night lighting at the O&M facility and the substation(s) will be kept to the minimum required for safety and security, sensors and switches will be used to keep lighting turned off when not required, and all lights will be hooded and directed to minimize backscatter and off-site light dispersion.

Substation - At the substation(s), all equipment will have a low reflectivity neutral gray finish to minimize visual salience.

Substation - All insulators in the substations and on takeoff towers will be non-reflective and non-refractive.

Substation - The control buildings located at each substation would have a low-reflectivity earth-tone finish.

Substation - The chain link fences surrounding the substations will have a dulled, darkened finish to reduce their contrast with the surroundings.

Construction - During the construction period, active dust suppression will be implemented to minimize the creation of dust clouds.

Construction - When construction is complete, areas disturbed during the construction

Table 1.5.2-1; Summary of Impacts and Mitigation Measures

process will be reseeded to facilitate their return to natural appearing conditions.

POPULATION, HOUSING, AND ECONOMICS

Population and Housing - There will not be a significant increase in population or housing demands due to the small number of workers (14-18) required for operations. There appears to be an adequate supply of temporary housing available to accommodate non-local workers during construction; therefore, no mitigation measures are proposed.

Economics - The Project is projected to result in an estimated \$1.6 million per year in added income and 26-30 additional jobs in Kittitas County. The overall socioeconomic impact of the Project will be strongly positive for Kittitas County in terms of increased property tax base and employment opportunities, thus no mitigation measures are planned for population, housing, and economics.

PUBLIC SERVICES AND UTILITIES/RECREATION

Fire, Police, EMS - The Applicant will provide all police, fire, and emergency medical personnel with emergency response details for the Project including detailed maps of the Project site access roads, Applicant contact information, procedures for rescue operations to the nacelles, and location of the rescue basket.

Fire - Potential impacts to fire services will be mitigated by the following:

- Applicant has initiated discussion with local fire district(s) regarding a contract for fire protection services during construction;
- Provisions for special training of fire district personnel for fires related to wind turbines, and for EMS personnel in how to use a rescue basket that will be kept at the operations and maintenance facility for the purpose of removing injured employees from the towers;
- Providing detailed maps to fire districts that show all access roads to the Project;
- Providing keys to a master lock system to emergency responders that will enable emergency personnel to unlock gates that would otherwise limit access to the Project;
- Use of spark arresters on all power equipment (e.g., cutting torches and cutting tools), when necessary due to extreme fire danger conditions;
- Informing workers at the Project of emergency contact phone numbers and training them in emergency response procedures;
- Carrying fire extinguishers in all maintenance vehicles.

Operations - During operation of the Project, impacts to local services and utilities are expected to be insignificant. However, emergency preparedness planning will be implemented to reduce potential impacts in the event of an emergency. No additional mitigation will be required.

Taxes - Potential impacts to public services and utilities will be mitigated by the tax revenues generated by the Project.

Table 1.5.2-1; Summary of Impacts and Mitigation Measures

| CULTURAL RESOURCES | |
|---|--|
| Studies to Avoid Impacts - A cultural resources evaluation was implemented to identify and assess any potential impact on cultural resources located within the Project area. | |
| Project Design - The recommended 100 foot setback around all documented culturally sensitive areas will be implemented for all design scenarios. It is anticipated that by following this guideline, no impacts to culturally sensitive areas will occur under any of the proposed scenarios. | |
| TRAFFIC AND TRANSPORTATION | |
| Construction - During construction, roadways and intersections in the vicinity of the Project site will provide an acceptable level of passage for traffic, even during the evening peak periods. However, the following mitigation measures are proposed to further reduce the impact of Project construction on roadway traffic in the region: <ul style="list-style-type: none">• The Applicant will prepare a Traffic Management Plan with the construction contractor outlining steps for minimizing construction traffic impacts;• The Applicant will provide notice to adjacent landowners when construction takes place to help minimize access disruptions;• The Applicant will provide proper road signage and warnings of “Equipment on Road,” “Truck Access,” or “Road Crossings;”• When slow or oversized wide loads are being hauled, advance signage and traffic diversion equipment will be used to improve traffic safety. Pilot cars will be used as DOT codes dictate depending on load size and weight;• The Applicant will construct necessary site access roads and entrance driveways that will be able to service truck movements of legal weight;• The Applicant will encourage carpooling for the construction workforce to reduce traffic volume;• In consultation with Kittitas County, the Applicant will provide detour plans and warning signs in advance of any traffic disturbances;• The Applicant will employ flaggers as necessary to direct traffic when large equipment is exiting or entering public roads to minimize risk of accidents;• One travel lane will be maintained at all times. | |
| Operations - Because Project operation and maintenance will not significantly affect traffic and transportation, no mitigation is proposed. | |
| HEALTH AND SAFETY | |
| Project Design - Primary among the means of preventing hazards will be adherence to appropriate design and construction protocols such as IEC 61400-1. This will assure that the load assumptions, design, construction standards and safety features are in accordance with industry norms and benefit from the experience of many manufacturers and operators. A second important form of prevention is establishing a skilled workforce and implementing effective facility-wide maintenance, surveillance, and security programs. | |

Table 1.5.2-1; Summary of Impacts and Mitigation Measures

Project Design - Every hazard decreases as some function of distance. Therefore, hazards are reduced or eliminated by prohibiting or controlling presence in the area potentially affected by the hazard.

Project Design - Wind turbine generators are equipped with multiple safety systems as standard equipment. As examples: rotor speed is controlled by a redundant pitch control system and a backup disk brake system; critical components have multiple temperature sensors and a control system to shut the system down and take it off-line if an overheat condition is detected.

Lightning - The WTGs are equipped with an engineered lightning protection system that connects the blades, nacelle, and tower to the earthing system at the base of the tower. As the rotor blades are nonmetallic, they normally do not act well as a discharge path for lightning, however, as the highest point of the turbine, the blades sometimes provide the path of least resistance for a lightning strike. In order to protect the blades, they are constructed with an internal copper conductor extending from the blade tip down to the rotor hub which is connected to the main shaft and establishes a path through the gearbox, nacelle bed frame etc. to the tower base right down to the grounding system embedded underground. An additional lightning rod extends above the wind vane and anemometer at the rear of the nacelle. Both the rear lightning rod and blades have conductive paths to the nacelle bed frame that in turn connects to the tower. The tower base is connected to the earthing system at diametrically opposed points.

Tower Collapse - The selected wind turbine generator/ tower combination will be subjected to engineering review to assure that the design and construction standards are appropriate for the Project. This review will include consideration of code requirements under various loading conditions and give a high degree of confidence of structural adequacy of the towers. The turbines are more than 9,000 feet from the nearest residence and more than 2 miles from the nearest public road and as such, a reasonable set-back requirement of at least one tip height is far exceeded in the Project location and design.

Blade Throw - Certification of the wind turbine to the requirements of IEC 61400-1 will assure that the static, dynamic and defined-life fatigue stresses in the blade will not be exceeded under the combined load cases expected at the Project site. The standard includes safety factors for normal, abnormal, fatigue and construction loads. This certification, together with regular periodic inspections, will give a high level of assurance against blade failure in operation. The turbines are more than 9,000 feet from the nearest residence and more than 2 miles from the nearest public road and as such, a reasonable set-back requirement of at least one tip height is far exceeded in the Project location and design.

Ice Throw - Ice throw over 100 meters (328 feet) has not been documented as a hazard and no ice throw injury has ever been reported from operating wind projects. Certain manufacturers have heated rotor blades in development testing. This would not be a practical consideration for the proposed facility due to the low hazard and low frequency of icing. The turbines are more than 9,000 feet from the nearest residence and more than

Table 1.5.2-1; Summary of Impacts and Mitigation Measures

2 miles from the nearest public road and as such, a reasonable set-back requirement of at least one tip height or at least 100 meters is far exceeded in the Project location and design.

Explosions - To avoid uncontrolled explosions during blasting for excavation work, only state licensed explosive specialist contractors are allowed to perform this work – explosives require special detonation equipment with safety lockouts, vegetation will be cleared from the general footprint area surrounding the excavation zone to be blasted, and standby water spray trucks and fire suppression equipment will be present during blasting activities.

Fire - Location of transformers and electrical equipment below ground will harden them against tower collapse, blade throw and vandalism, thereby reducing the fire hazard.

Fire - In order to prevent electrical fires, all equipment used is designed to meet NEC and NFPA standards. Graveled areas with no vegetation will surround substation, fused switch risers on overhead pole line, junction boxes and pad switches. A fire suppressing, rock filled, oil containment trough will surround the substation transformer.

Fire - In normal operation, regular maintenance, including review of real time and stored temperature sensor readings, will highlight developing problems and facilitate prevention of equipment-caused fire. Large wind generators have such systems as standard equipment.

Fire - In order to avoid fires caused by dry vegetation in contact with hot exhaust catalytic converters under vehicles, no gas powered vehicles will be allowed outside of graveled areas, mainly diesel vehicles (i.e. w/o catalytic converters) will be used on site, and high clearance vehicles will be used on site if used off-road.

Fire - During the construction period, it will be necessary to give all workers fire safety training and to implement a work plan that minimizes the risk of fire. Appropriate fire suppression equipment will be available to designated employees trained in its use.

Fire - During construction, portable generators will not be allowed to operate on open grass areas, and generators will be fitted with spark arrestors on the exhaust system.

Fire - In areas where there are torches or field welding present, the immediate surrounding area will be wetted with a water sprayer and fire suppression equipment will be present at location of welder/torch activity.

Fire - Smoking will be restricted to designated areas (outdoor gravel covered areas).

Fire - As general fire prevention measures, all on-site service vehicles will be fitted with fire extinguishers; fire station boxes with shovels, water tank sprayers, etc. will be installed at multiple locations on-site along roadways during summer fire season.

Security - The Site Project Manager will work with a security contractor to develop a

Table 1.5.2-1; Summary of Impacts and Mitigation Measures

plan to effectively monitor the overall site during construction including drive-around security and specific check points. The security inspection and monitoring plan will be changed throughout the course of construction based on the level of construction activity and amount of sensitive or vulnerable equipment and materials in specific area. Much of the security monitoring activities will be straight forward since all site access ways will be accessible from paved and well maintained county roads.

Security - Site visitors including vendor equipment personnel, maintenance contractors, material suppliers and all other third parties will require permission for access from authorized Project staff prior to entrance. The Plant Operations Manager, or designee, will grant access to any critical areas of the site on an as-needed basis. Site access will be controlled and all visitors or contractors on the site will be required to carry an identification pass.

Security - Construction materials will be stored at the individual turbines locations, or at the lay-down area around the perimeter of the Operations and Maintenance (O&M) facility and site construction trailers. Temporary fencing with a locked gate will be installed for a roughly 1.5 acre area adjacent to the site trailers for the temporary storage of any special equipment or materials. After construction is completed, the temporary fencing will be removed and the area re-seeded with an appropriate seed mix.

Security - Both the O&M facility and the main substation will be equipped with outdoor lighting and motion sensor lighting. The substation will be surrounded by an 8 foot tall chain-link fence with barbed wire along the top. All wind turbines, pad transformers, pad mounted switch panels and other outdoor facilities will all have secure, lockable doors.

Security - The plant operations group will prepare a detailed security plan to be implemented to protect the security of the Project and Project personnel.

Emergency Response - On-site emergency plans will be prepared to protect the public health, safety and environment on and off the Project site in the case of a major natural disaster or industrial accident relating to or affecting the Project. The Applicant shall prepare the plans and be responsible for implementing the plans with its operations team in coordination with the local emergency response support functions. The plans will describe the emergency response procedures to be implemented during various emergency situations that may affect the Project or the surrounding community or environment.

1.6 CUMULATIVE IMPACTS

Although the environmental impacts of proposed power projects are typically evaluated on an individual basis, the recent number of wind power generation applications in Kittitas County has prompted EFSEC to consider potential cumulative impacts. The Kittitas Valley, Wild Horse, and Desert Claim wind power projects are three similar but independent developments being proposed in Kittitas County that are being permitted through separate processes—Kittitas Valley and Wild Horse through EFSEC and Desert Claim through Kittitas County. The Kittitas Valley and Desert Claim projects are relatively close to each other (within 1.6 miles at the closest point), while the Wild Horse Project is 14 miles from the Desert Claim project and 21 miles from the Kittitas Valley project. SEPA requires consideration of cumulative impacts. A brief description of the Desert Claim and Kittitas Valley projects is provided in Section 3.17, ‘Cumulative Impacts’. Potential cumulative impacts associated with the Kittitas Valley, Wild Horse, and Desert Claim wind power projects are addressed in Section 3.17 for each resource topic, and are summarized below.

1.6.1 Earth Resources

Significant cumulative impacts on soil, topography, and geology resulting from construction of the three proposed wind power projects in Kittitas County are not anticipated. Impacts on earth resources from development of the three wind power projects would generally be confined to localized, temporary erosion impacts from ground disturbance during construction. The intensity of impacts on near-surface soils would be within the construction footprint for the respective project and would not be overlapping in geographic extent and the impacts of the respective projects would not represent the potential for significant cumulative impacts on earth resources.

Cut and fill would be required to construct access roads, tower foundations, transformer pads, and other project facilities. Each project will require large amounts of gravel for road and foundation construction, but because the Wild Horse Project will utilize on-site rock pits to supply gravel, the cumulative impact on local resources will be reduced.

1.6.2 Vegetation, Wetlands, Wildlife, and Fisheries

1.6.2.1 Vegetation

Implementation of all three proposed wind power projects would result in the loss of vegetation through clearing and ground disturbance, including the potential loss of lithosols, a unique habitat often associated with the shrub-steppe region. The combined figures for the three projects amount to approximately 336 total acres of existing vegetation lost, including approximately 170 acres of shrub-steppe and approximately 100 acres of lithosol habitat. In the context of the three wind power project areas that

collectively cover approximately 17,000 acres, the approximate 2 percent loss of vegetation at each project site would not be considered an adverse cumulative effect. This combined loss of vegetation would similarly not be considered cumulatively adverse in a more regional context. However, the precise regional extent of lithosol habitat is not quantitatively known. Therefore, it is difficult to assess the specific magnitude of cumulative lithosol impacts at the three wind power project sites within the context of the surrounding region.

No federally listed rare plants were identified at either the Kittitas Valley or Wild Horse project sites. One Washington State listed species, hedgehog cactus, was found extensively in lithosolic habitats at the Wild Horse Project site, but less than 10% of the individuals identified during a rare plant survey are considered at risk from direct impact from the Wild Horse Project.

Field surveys of wet meadow habitats at the Desert Claim project site resulted in no findings of Ute ladies'-tresses, an orchid that is federally listed as endangered. No other rare plants protected by either the federal or state governments were found in searches of the areas of likely disturbance in the Desert Claim project area (Kittitas County 2003a). The minimal potential impacts of the proposed wind projects on rare plants would not represent a significant cumulative impact on any species.

1.6.2.2 Wetlands

Cumulative impacts on wetlands could result from directly filling or grading of wetland systems, as well as from indirect effects caused by stormwater runoff, increased pollutant loading, and water quality degradation, which in turn could result in loss of wetland diversity and reduced wetland functions and values. The Kittitas Valley project would disturb between approximately 135 and 185 square feet of one small potential wetland system at the project site. Construction activities would temporarily disturb approximately 16 acres of wetland area at the Desert Claim site, while the permanent project footprint would overlap with an area estimated at 9 acres.

No wetlands were identified within a 164-foot buffer around the planned locations for Wild Horse Project facilities; therefore, no impacts on wetlands are anticipated for that Project. The collective effects of these projects would be minor as a result of wetland avoidance and/or required mitigation for wetlands that could not be avoided, and are not expected to extend to downstream surface waters or wetlands. Therefore, there would not be a potential for significant cumulative effects on wetland resources.

1.6.2.3 Wildlife

Some temporary displacement of wintering mule deer and elk is anticipated from winter construction activities in the three wind projects. If tolerance thresholds during wind power project maintenance activities are exceeded, some animals are likely to be displaced and use areas away from the wind project development areas. However,

cumulative impacts on wintering mule deer and elk for all projects are expected to be low.

The estimated combined raptor mortality rate for the three wind power projects would be approximately 14 raptor fatalities per year with 361 combined turbines, and 15 raptor fatalities per year with 391 combined turbines. Given the distances between the Wild Horse, Kittitas Valley, and Desert Claim projects, and the typical home ranges of the raptors at risk for collision at the three projects, the same individual breeding raptors that use the Kittitas Valley and Desert Claim project areas are not expected to use the Wild Horse Project area

The cumulative impacts on bald eagle winter habitat from all projects would be small. During project operation, bald eagles that occupy the area near the Yakima River would be at some risk for collision with turbines. Assuming risk of collision is proportional to use, one bald eagle fatality between the Kittitas Valley and Desert Claim projects might occur every two to three years. There was no observed use at the Wild Horse Project area. Based on these estimates, the cumulative effects of this low level of mortality on the increasing winter bald eagle population in the Kittitas Valley and the state of Washington would not be measurable.

It is expected that passerines would make up the largest proportion of bird fatalities for the three projects combined. Based on the mortality estimates from other wind projects studied, combined passerine mortality for the three projects would range from 430 to 740 fatalities per year. This level of mortality is not expected to have any population-level consequences for individual species.

Using mortality estimates from other operating wind projects (one to two bat fatalities per turbine per year), total annual bat mortality for all three wind power projects in Kittitas County is expected to range from 361 to 782 bat fatalities. However, the significance of bat mortality from the three projects is hard to predict because there is very little information available regarding the size of bat populations. Studies suggest, however, that resident bats do not appear to be significantly affected by wind turbines (Johnson et al. 2003; Gruver 2002) because nearly all observations were during the fall migration period.

Development of the Desert Claim project would result in minor disturbance or displacement impacts on streams and riparian zones in the project area; because none of the affected streams are known to contain fish communities, direct impacts on fish resources from this project are expected to be negligible or nonexistent. The effects of the respective projects would be negligible in three localized areas of Kittitas County and would not extend to downstream waters, therefore there would not be a potential for significant cumulative effects on fishery resources.

1.6.2.4 Fisheries

No impacts on fish habitat or fish species associated with construction and operation of the Kittitas Valley project are anticipated. Similarly, the Wild Horse Project would not result in adverse impacts on fish or fish habitat on-site or in downstream areas.

1.6.3 Water Resources

Cumulative effects to surface water resources could result from increases in the amount of impervious surfaces that in turn could alter the amount and quality of drainage to area creeks and other water features. However, because the three projects are sufficiently distant from each other and are located in different tributary watersheds, there would not be combined effects from multiple projects on the same stream. The minor, localized effects of each project would occur within the drainages of minor tributaries to the Yakima River and the Columbia River and at a distance of at least several miles upstream from either river. Therefore, significant cumulative effects on water resources within the Upper Yakima River basin or the northeastern portion of the Kittitas Valley are not expected, even if all three projects were constructed.

1.6.4 Health and Safety

The potential for exposure to fuel and non-fuel hazardous substances would increase, particularly during the construction period if construction periods were to overlap. However, the effects would be localized in the area of the spill, and would not be likely to result in an adverse cumulative impact.

The greatest fire risk for each project would occur during the construction period, because of the level of activity and the numbers of workers and equipment active at that time. The greatest cumulative fire risk would occur if and when construction schedules for two, or all three, of the projects overlapped. With implementation of strict fire protection and prevention measures, the cumulative risk of potential fires associated with construction of the three proposed wind turbine projects should be minimized.

Certain fire risks specific to wind energy projects would also exist during the operating period for each project. However, specific measures to counteract or manage these risks would be implemented during project operation. For example, the project facilities would be continually monitored, the project areas would be regularly patrolled, and access to the project areas would be limited. Therefore, the concurrent operation of the three proposed wind power projects would not likely pose a cumulatively significant increased fire risk.

Site-specific health and safety concerns associated with wind energy production include the potential for ice to be thrown from rotating blades, blades to disengage and be thrown from the tower, and tower collapse during extreme weather conditions. These potential health and safety impacts from the three projects would be localized in nature and would not be expected to be cumulatively significant.

Potential shadow flicker impacts from the three proposed wind power projects would be limited to the immediate vicinity (approximately 2,000 feet) of the wind turbines within each respective project area. Some residences that are close to turbine locations for the Desert Claim or Kittitas Valley projects would be subject to shadow flicker for varying numbers of hours per year. These impacts would be limited to a number of discrete locations that are well separated from each other, and would not constitute a cumulative impact from these two proposed projects.

The electric and magnetic fields associated with the three proposed wind power projects would be less than those produced by electrical facilities already present in the vicinity of the respective project areas, and would diminish to background levels at distances within which public exposure could occur. Therefore, there would not be cumulative exposure impacts from development of multiple wind energy projects.

1.6.5 Energy and Natural Resources

When combined with other planned wind projects in the region, construction activity associated with the Wild Horse Project would contribute to local energy demands. The combined demands of the three projects for fuel and construction materials would cumulatively contribute to the local and regional demand for, and irreversible expenditures of, nonrenewable resources on a temporary basis.

The three proposed wind power projects would provide a combined nameplate capacity of approximately 565 MW of electricity (under the most likely scenario for development of the Kittitas Valley and Wild Horse projects). Assuming long-term operation of the three projects at a typical wind power project capacity factor of 33 percent, combined they would produce approximately 186 average MW of electricity on a long-term basis. That collective energy output would represent a substantial increase in the amount of electricity currently produced within Kittitas County. Operation of the three projects would also cumulatively add to the capacity, production, and availability of renewable energy sources in Washington state and the greater Pacific Northwest, and would provide a sustainable, renewable source of electric power supply to supplement the region's existing hydroelectric, nuclear, and coal or gas-fired power projects, although it would represent a relatively small addition to the total regional electricity supply.

1.6.6 Land Use and Recreation

Development of the Wild Horse Project concurrent with the proposed Desert Claim and Kittitas Valley wind projects would result in conversion of approximately 336 acres of open space and rangeland uses in central Kittitas County for wind energy production. In the short-term, proposed wind energy facilities would not collectively disrupt or change the underlying land use pattern of this portion of the county. The three projects would also require either Kittitas County approval for a rezone and Comprehensive Plan amendment, or EFSEC review and governor approval, to allow development of a wind

power facility. Temporary population increases associated with construction workers from all three projects could cumulatively increase demand for and use of local and regional recreation resources during overlapping construction periods, but those are not expected to be significant.

1.6.7 Socioeconomics

The proposed projects could contribute to increases in temporary and permanent job opportunities and populations in the region. The majority of cumulative population and housing impacts would be temporary and would occur during construction. Assuming that all three projects are constructed simultaneously, temporary population increases resulting from construction work forces could result in cumulative effects to the local housing supply. However, it appears that the study area has an adequate supply of temporary housing to accommodate the potential cumulative increase in construction workers from outside the area.

The three wind power projects would increase retail sales and overall economic activity in the area, as well as employment opportunities for residents of Kittitas County. The three projects would also significantly increase the amount of annual property tax revenue to the affected taxing districts in Kittitas County..

1.6.8 Cultural Resources

Constructing the three proposed wind power projects would result in ground disturbance that could potentially impact identified and unidentified prehistoric and/or historic sites, as well as cause impacts on traditional cultural properties. Cultural resource surveys of the Kittitas Valley and Wild Horse wind power projects have been conducted and no direct impacts to cultural resource sites are anticipated. Tribal representatives of the Yakama Nation have expressed concern about the cumulative effect wind power projects. Efforts to bring together wind farm applicants, government agencies, and tribal representatives to discuss these and other issues of concern are ongoing.

1.6.9 Visual Resources

There are a number of locations in the Kittitas Valley where the Desert Claim project could be seen in the foreground to middle ground and the Kittitas Valley project could be seen in the middle ground to background. Because the Wild Horse Project is located far from the other two projects and in an entirely different portion of the landscape, it has limited potential to be seen in the same view as the other two projects. Travelers on Interstate 90 (I-90), however, would be likely to recall having seen a collection of wind turbines a few minutes before seeing more wind turbines. This progressive realization could leave the impression with some viewers that wind turbines are plentiful in Kittitas

Valley. The development of the three proposed wind power projects would also cumulatively contribute to increased nighttime lighting in the Kittitas Valley.

1.6.10 Transportation

If construction occurs simultaneously for the Kittitas Valley and Wild Horse projects, the segment of I-90 immediately west of Exit 106 (to US 97) may temporarily carry construction traffic for both projects. The combined construction traffic volumes of both the Kittitas Valley and Wild Horse projects during the PM peak would cause this segment of I-90 to operate at level-of-service (LOS) B. This is acceptable by county and State standards, and it is anticipated that the LOS would return to background conditions (LOS A) once the projects are completed.

With the addition of the Desert Claim project, the total peak-hour trips if all three proposed projects were under construction simultaneously would result in an operating condition that is still within the numerical range for LOS B. Therefore, the additive effect of the potential Desert Claim construction traffic would not result in a significant cumulative impact on the operating condition for I-90 during the construction period. However, if turbine components or offsite gravel materials were delivered to multiple projects at the same time, there could be increased delays or additional detours within the area near the Desert Claim and Kittitas Valley projects.

Development of multiple wind farms in the Kittitas Valley area would likely result in a larger total number of tourists visiting wind project facilities, relative to the level of activity with a single project. However, the tourist traffic would likely be localized to the individual areas around the projects and would not likely be additive or cumulative (i.e., it is likely that most tourists interested in wind energy would visit any one of the projects, but would not visit two or all three projects).

1.6.11 Air Quality

Gravel needed for construction of the Kittitas Valley and Desert Claim projects would likely be transported from offsite sources. This activity could result in a temporary increase in localized cumulative air quality impacts on travel routes shared by the two projects, but not at a broader, countywide level. This potential impact would be greatest if construction activities for the Kittitas Valley and Desert Claim projects overlapped and occurred during periods of peak winds.

The air emissions from contemporaneous construction of multiple wind projects would be additive in terms of their contribution to total regional pollutant loads. However, it is not anticipated that the incremental impact of the aggregated air emissions from construction of multiple wind power projects would be sufficient for regional air pollutant concentrations to temporarily exceed the applicable air quality standards.

No significant aggregated air pollutant concentrations that would exceed national or Washington State ambient air quality standards are anticipated. In addition, the generation of electricity through the three proposed wind power projects would avoid cumulative emissions of regulated pollutants from other fossil fuelled sources of power that would have otherwise been built or operated to produce an equivalent amount of electricity.

1.6.12 Noise

Construction noise generated by the three wind power projects would be temporary in nature, and would primarily be from operation of construction equipment and vehicles. The magnitude of this temporary cumulative impact would depend upon the timing of construction activities but any adverse effects would be limited to the area immediately surrounding each construction site.

The Kittitas Valley and Desert Claim projects are a sufficient distance apart that residents near the Desert Claim project would not also experience elevated noise levels from operation of Kittitas Valley project facilities, and vice versa. Noise modeling results for both projects indicate that receptors located between the two projects would be unlikely to experience noticeable increases in noise levels as a combined effect of project operations. Given the distances that separate the Wild Horse Project from the Desert Claim and Kittitas Valley sites, Wild Horse Project operations would not contribute to cumulative noise impacts in the region.

1.6.13 Public Services and Utilities

Concurrent development of the three projects could create additional demand for law enforcement, fire protection, and emergency medical service response during both construction and operations and maintenance phases. The level of impact would depend on the timing of concurrent construction activities as well as the availability of emergency response resources at the time of an incident.

Increased permanent worker populations required to operate the three proposed wind farms could contribute to increased cumulative demands for school services in central and eastern Kittitas County. However, local residents would likely fill a portion of the operations jobs and it is unlikely that all of the in-migrants would locate in the same school district. Therefore, no significant cumulative adverse impacts on schools are anticipated from project operation.

Cumulative impacts on utility service providers would consist primarily of cumulative increases in the demand for solid waste disposal services. However, this increased demand is not anticipated to be significant with respect to either collection capability or the capacity of the County's construction and demolition waste disposal site. No long-term cumulative impacts on regional water and wastewater treatment plants are

anticipated because water and wastewater demands would be limited to temporary needs generated during construction activities and those from operations and maintenance staff.

No significant cumulative impacts on electricity or telecommunications are anticipated. Based on the distances between residences and the respective project facilities, there does not appear to be a potential for cumulatively significant interference impacts on radio and television reception in the areas near the proposed wind power projects.

1.7 PUBLIC INVOLVEMENT/CONSULTATION/COORDINATION

The Applicant has consulted extensively with local, state, and federal agencies and tribal representatives during the development of the proposed Project, including:

- Local Agencies: Kittitas County Planning Staff, Kittitas County Public Works Department, Ellensburg Fire District #2, Kittitas School District
- State Agencies: WDFW: Regional Staff and Managers, DNR, WSDOT
- Federal Agencies: BPA, USFWS, FAA
- Tribal Governments: Yakama Nation, Confederated Tribes of the Colville Reservation, Wanapum Tribe

Details and dates of meetings and correspondence are contained in Section 2.6, 'Coordination and Consultation with Agencies, Indian Tribes, The Public and Non-Governmental Organizations'.

The formal public involvement process required under SEPA will commence once EFSEC issues a Determination of Significance and begins the development of an Draft Environmental Impact Statement (DEIS).

1.8 ISSUES TO BE RESOLVED

Although most of the issues associated with this proposal have been clearly identified and assessed, or will be addressed in some clearly defined action plan in the future, there are some that have not been totally resolved or that may require further analysis. This section summarizes those issues consistent with SEPA.

1.8.1 Compliance with local land use plans and zoning ordinances

The proposed Project is not presently in compliance with local land use plans and zoning ordinances. The Applicant will make application for change in, or permission under, Kittitas County land use plans and zoning ordinances and will make all reasonable efforts to resolve the noncompliance. In the event the Applicant's reasonable efforts fail to achieve compliance, Applicant will apply to EFSEC for preemption of such plans and ordinance pursuant to Chapter 463-28 WAC.