

# Record of Decision for the Electrical Interconnection of the Arlington CEP Wind Project January 2005

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## INTRODUCTION

The Bonneville Power Administration (BPA) has decided to offer contract terms for interconnection of up to 200 megawatts (MW) of wind generation from the Columbia Energy Partners' (CEP) proposed Arlington Wind Project (Wind Project) into the Federal Columbia River Transmission System (FCRTS). The Wind Project will be interconnected at the proposed BPA Jones Canyon Switching Station (Jones Canyon SS). BPA's McNary-Santiam #2 230-kilovolt (kV) transmission line will be looped through Jones Canyon SS for the purpose of providing transmission access to the Wind Project. These proposed facilities will be located in Gilliam County, Oregon, about 3 miles southwest of Arlington, Oregon.

The decision to offer terms to interconnect the Wind Project is consistent with BPA's Business Plan Final Environmental Impact Statement (BP EIS) (DOE/EIS-0183, June 1995), and the Business Plan Record of Decision (BP ROD, August 1995). Thus, this decision is tiered to the Business Plan ROD.

## BACKGROUND

BPA is a federal agency that owns and operates the majority of the high-voltage electric transmission system in the Pacific Northwest. This system is known as the FCRTS. BPA has adopted an Open Access Transmission Tariff for the FCRTS, consistent with the Federal Energy Regulatory Commission's (FERC) *pro forma* open access tariff.<sup>1</sup> Under BPA's tariff, BPA offers transmission interconnection to the FCRTS to all eligible customers on a first-come, first-served basis, with this offer subject to an environmental review under the National Environmental Policy Act (NEPA).

In February 2002, CEP submitted a generation interconnection request to BPA for interconnection of up to 200 MW from the proposed Wind Project to BPA's McNary-Santiam #2 transmission line. Consistent with its tariff, BPA needs to respond to this request. In considering this request, BPA reviewed the environmental analysis in the BP EIS and considered whether offering contract terms was consistent with the Market-Driven alternative adopted by the BPA Administrator in the BP ROD. BPA also reviewed and relied on environmental information contained in the Conditional Use Permit (CUP) issued for the Wind Project by Gilliam County, Oregon. Additional information on cultural resources and special status plants and animals in the vicinity of the proposed new switching station was collected and analyzed as needed.

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<sup>1</sup> Although BPA is not subject to FERC's jurisdiction, BPA follows the open access tariff as a matter of national policy. This course of action demonstrates BPA's commitment to non-discriminatory access to its transmission system and ensures that BPA will receive non-discriminatory access to the transmission systems of utilities that are subject to FERC's jurisdiction.

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For BPA, implementing the proposed action involves offering contract terms to CEP or its successor for interconnecting the Wind Project into the FCRTS. Under this contract, BPA would construct, operate, and maintain the necessary interconnection facilities (including the new switching station) and integrate power from the Arlington Wind Project into the FCRTS.

## **RELATIONSHIP TO BUSINESS PLAN EIS**

In response to a need for a sound policy to guide its business direction under changing market conditions, BPA explored six alternative plans of action in its BP EIS. The six alternatives were: Status Quo (No Action), BPA Influence, Market-Driven, Maximize Financial Returns, Minimal BPA, and Short-Term Marketing. The BP EIS examined each of these six alternatives as they relate to meeting the regional electric energy need in the dynamic West Coast energy market. The analysis focused on the relationships among BPA, the utility market, and the affected environment. The evaluation, which included transmission as well as generation, compared BPA actions and those of other energy suppliers in the region in meeting that need (BP EIS, section 1.7).

In the BP ROD, the BPA Administrator selected the Market-Driven Alternative. Although the Status Quo and the BPA Influence Alternatives were the environmentally preferred alternatives, the differences among alternatives in total environmental impacts were relatively small. Other business aspects, including loads and rates, showed greater variation among the alternatives. BPA's ability to meet its public and financial responsibilities would be weakened under the environmentally preferred alternatives. The Market-Driven Alternative strikes a balance between marketing and environmental concerns, including those for transmission-related actions. It is also designed to help BPA ensure the financial strength necessary to maintain a high level of support for public service benefits, such as energy conservation and fish and wildlife mitigation and recovery activities.

The BP EIS was intended to support a number of decisions (BP EIS, section 1.4.2), including contract terms BPA will offer for generation interconnection services. The BP EIS and ROD documented a strategy for making these subsequent decisions (BP EIS, Figure 1.4-1 and BP ROD, Figure 3, page 15). BPA's decision to offer terms for interconnecting the Wind Project is one of these subsequent decisions and the subject of this ROD. BPA reviewed the BP EIS to ensure that offering contract terms for interconnecting this Wind Project was adequately covered within its scope and that it was appropriate to issue a ROD tiered to the BP ROD. This tiered ROD, which summarizes and incorporates information from the BP EIS, demonstrates this decision is within the scope of the BP EIS and ROD. This ROD describes the specific information applicable to this decision to offer contract terms for generation interconnection of the Wind Project at a new BPA switching station called Jones Canyon, and provides a summary of the environmental impacts associated with the decision with reference to appropriate sections of the BP EIS and BP ROD. This tiered ROD also references information that was incorporated by reference into the BP EIS from BPA's Resource Programs (RP) EIS (DOE/EIS-0162, February 1993). The RP EIS contains an analysis of environmental effects and mitigation for wind projects. Lastly, this ROD summarizes and references information as appropriate from the Conditional Use Permit issued by Gilliam County referenced above to clarify where and how the site-specific environmental consequences described in the BP EIS will occur.

## **PROJECT DESCRIPTION**

CEP proposes to construct and operate the Arlington Wind Project, which is a 104-MW wind farm<sup>2</sup> consisting of up to 63 NEG Micon type NM82 turbines, each capable of generating approximately 1.65 MW. These wind turbine generators would be located in five strings oriented in a north-south direction on the plateau southwest of the town of Arlington. Each wind turbine tower would be approximately 265 feet tall and the sweep of the nacelle blades may reach up to 380-400 feet above the ground. The wind farm site is located in Sections 29, 30, 31, 32, and 33, T3N, R21E, WM; Sections 4, 5, 6, 7, and 8, T2N, R21E, WM; Sections 35 and 36, T3N, R20E, WM; and Sections 1, 3, and 11, T2N, R20E, WM, Gilliam County, Oregon.

Each string of wind turbines would require an access road to construct and service the turbines. The developer would make use of existing roads as much as possible, build approximately 5.3 miles of new roads, and return some existing roads to agriculture use. The ground would be leveled to 5% grade or less and temporarily cleared for approximately 150 feet around each wind tower site to allow crane access for tower erection and nacelle and blade attachment.

There would be 10.8 miles of existing and new road location that would have collector conductor buried beneath the roadbed. There would be 2.4 miles of trenching 8 feet wide to install an underground collector conductor system between the wind tower strings that would be outside of road prisms. In addition to the underground collector conductor, there would be 5.9 miles of overhead collector conductor between wind tower strings. This line would be single pole construction with wood poles averaging 30 feet tall strung with 34.5-kV conductor. The poles would be accessed via overland travel resulting in temporary disturbance to vegetation. Temporarily disturbed areas would be treated for weed control and planted back to native grasses, shrubs, or agriculture following construction.

The Wind Project would deliver electric power to the regional transmission grid at the Jones Canyon SS, located about 4 miles southwest of the town of Arlington and directly north of structure 49/4 of BPA's 230-kV McNary-Maupin transmission line. The Jones Canyon SS would be constructed, owned, operated, and maintained by BPA (see attached figure for location of switching station). The McNary-Santiam #2 230-kV line located near the switching station would be looped through the Jones Canyon SS. This switching station would include a one-story control house (approximately 30 by 44 feet) that would house operations equipment. A communications tower, which is a box-type tubular structure with one antenna disk about 6 feet wide, would be built near the control house.

CEP would construct, own, operate and maintain a separate substation on its own property directly west and adjacent to Jones Canyon SS. The two substations would be interconnected using a bus or short transmission line. CEP would construct, operate, and own a separate control house that would be adjacent to their substation.

Substations such as this new switching station contain electrical equipment that enables BPA (and CEP at their substation) to interconnect several different transmission lines or disconnect transmission lines for maintenance or outage conditions. The following equipment may be installed in either or both the CEP and Jones Canyon substations:

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<sup>2</sup> CEP has requested an interconnection of 200 MW as part of OASIS request GI-95. However, their current proposal for construction would only generate up to 104 MW. It is uncertain when and if additional generation capability would be added.

- power circuit breakers;
- substation dead end structures;
- transmission dead end structures;
- voltage transformers
- surge arrestors
- a disconnect switch; and
- bus tubing and bus pedestals.

The CEP substation may also contain equipment to regulate voltage such as capacitors and transformers.

In addition to the equipment listed for the switching station, a chain-link fence with barbed wire on top provides security and safety, and a 3-inch layer of rock selected for its insulating properties is placed on the ground within the switching station to protect operation and maintenance personnel from electrical danger during switching station electrical failures. Security lighting would be placed on the perimeter of each substation and control house facilities.

BPA would acquire the land needed for the switching station and for the access road from the landowners.

Materials and equipment to build the switching station would be staged in the area immediately surrounding the switching station site. A staging area for construction of the wind farm itself would not be required since wind turbine components would be taken directly to the site where they would be installed.

## **PUBLIC PROCESS AND CONSIDERATION OF COMMENTS**

Consistent with BPA's strategy for tiering appropriate subsequent decisions to the BP ROD, a public process for the generation interconnection and related facilities was conducted. Review processes for CEP's Conditional Use Permit and other permits for the Wind Project generated site-specific environmental information about the Wind Project and provided several opportunities for public comment. Specific impacts and related mitigation actions for the Wind Project were described and comment provided through the following processes.

- On January 22, 2004, Gilliam County conducted a formal public hearing on the proposed order for the Wind Project.
- On February 6, 2004, Gilliam County approved the application for a Conditional Use Permit for the Wind Project, with attached Conditions of Approval.

In addition, BPA provided the following opportunities for public involvement.

- On August 13, 2004, BPA sent written notice to adjacent property owners and interested persons requesting comments by September 17, 2004, on the proposed construction of the Jones Canyon SS and interconnection to the FCRTS of the Arlington Wind Project. This written notice of BPA's project and the associated open comment period also was posted on BPA's Internet site and in our monthly information periodical, "BPA Journal."

- On August 14, 2004, BPA initiated Section 106 consultation with the Oregon State Historic Preservation Officer (SHPO).
- On October 20, 2004, BPA initiated Section 106 consultation with the Confederated Tribes of the Warm Springs Indian Reservation (CTWSR).
- On July 28, 2004, BPA requested a list of threatened and endangered species that may occur in the area of the switching station from the U.S. Fish and Wildlife Service. A response with the list was received on September 9, 2004.

One comment supportive of the wind project was received by BPA as a result of the scoping. Consultation with the Oregon SHPO concluded with their concurrence that no known significant cultural resources would be impacted by this proposal, and procedures to minimize damage to any cultural artifacts discovered during construction would be followed. No comments were received about this project from the CTWSR.

## **ENVIRONMENTAL ANALYSIS**

Consistent with the BP ROD, the BP EIS was reviewed to determine whether offering terms to interconnect the Wind Project is adequately covered within its scope. The BP EIS alternatives analyzed a range of marketing actions and response strategies to maintain a market-driven approach. The BP EIS showed that environmental impacts are determined by the responses to BPA's marketing actions, rather than by the actions themselves. These market responses include resource development, resource operation, transmission development and operation, and consumer behavior.

BPA's RP EIS described generating resource types, their generic environmental effects on a per-average-MW (per-aMW) basis, and potential mitigation. The discussion for wind generation is included in section 3.2.1.3. The RP EIS also described the environmental effects and potential mitigation associated with the construction or upgrade of transmission facilities to integrate the resources with the existing transmission system (section 3.5). The per-aMW impacts for wind turbines (RP EIS, Table 3-19) were incorporated and updated in the BP EIS (Table 4.3-1), however, there have been additional improvements and efficiencies to wind turbines since the BP EIS was developed. The BP EIS contains an analysis of generic environmental impacts, including resource development and operation (section 4.3.1) and transmission development and operation (section 4.3.2).

The Market-Driven Alternative anticipated unbundling of products and services, constructing transmission facilities for requests for non-federal power transmission, and providing transmission access to wholesale power producers (section 2.2.3). The BP EIS also noted that, under the Market-Driven Alternative, new transmission requests would depend more on customer requests than on new resource development by BPA (section 4.2.3.3).

In light of these analyses contained in the BP EIS and RP EIS, the interconnection of the Wind project clearly falls within the scope of the BP EIS. Site-specific impacts that would result from the Wind Project are of the type and magnitude reported in the BP EIS and the RP EIS. The following describes the site-specific impacts of the Jones Canyon SS related to the transmission interconnection as well as the indirect and cumulative impacts of the Wind Project itself and other proposed projects in the vicinity.

## **Environmental Impacts**

### ***Vegetation***

*BPA Action Impacts* - The area where the Jones Canyon SS and access road would be sited has been previously plowed and grazed and can be classified as an “old field.” The vegetation is mostly non-native grassland with a few scattered sagebrush and rabbitbrush shrubs. Due to these previous practices, there is an extremely low potential for special status plants to occur.

Clearing for the Jones Canyon SS would include removal of all brush and debris and possibly grading to level the working area. An area of approximately 2 acres would be permanently disturbed. Approximately 4 acres of cleared or disturbed areas outside of the switching station footprint would be reseeded with naturally occurring shrubs and grasses at the end of the construction period.

To the extent practicable, existing public and private roads would be used for access during the construction effort. It is anticipated that the county roads would be of sufficient quality to allow equipment and personnel movement to the construction site without significant road improvement. Any damage to county roads due to equipment movement or operation would be repaired to county standards prior to equipment demobilization.

Due to a general lack of brush and trees along the proposed access road right-of-way, site disturbance on new construction would generally be limited to widths of 25 feet (for a 16-foot roadbed and adjacent ditches and turning curves). Total acreage of ground disturbed during construction of the new access road to the Jones Canyon SS would be approximately 2 acres.

Construction contractors would stockpile construction materials in the immediate area surrounding the switching station footprint until the material is needed. Steel for structures would be delivered in pieces and would need to be assembled on-site. Because trucks need to refuel often, these areas would also likely be used for refueling.

*Wind Project Impacts* - The wind farm facilities would be sited in shrub-steppe habitat dominated by dryland grasses and scattered shrubs and occasional juniper trees. It is not highly diverse and has been exposed to seasonal grazing pressure for years. There is a mixture of native grasses such as blue-bunch wheatgrass, with non-native grasses bulbous bluegrass and cheatgrass. Shallow soils may contain desert parsley and buckwheat. Deeper soils may have sagebrush and rabbitbrush.

The Wind Project would have a net impact of 13 acres of permanent vegetation clearance through a net construction of 5.3 miles of road to access wind turbines. The developer would make use of existing roads, build some new roads predominantly along the strings where wind towers are sited, and return some existing roads to agriculture use. Siting of the base pads for each turbine and required clearing around each pad would result in 6-12 acres of permanent vegetation removal.

10.8 miles of existing and new road location would have collector conductor buried beneath the roadbed that would not disturb any additional vegetation beyond the road prism. 2.4 miles of underground collector conductor system between the wind tower strings would create approximately 2.3 acres of temporary vegetation removal. There would be 5.9 miles of overhead collector conductor between wind tower strings. This line single pole construction would be accessed via overland travel, resulting in temporary disturbance to an additional 14

acres of vegetation. Additional temporary vegetation disturbance would occur around each of the wind turbine sites during construction. Each site may have an acre of vegetation impacted for a total of 63 acres of temporary disturbance. All of these areas of temporary disturbance would be treated for weed control by CEP and planted back to native grasses, shrubs, or agriculture following construction.

Construction of the collector substation would have similar impacts as those estimated for the Jones Canyon SS, approximately 2 acres of permanent loss of vegetation and 4 acres of temporary disturbance.

The effects of the Wind Project on vegetation would be mitigated by the following conditions in the Conditional Use Permit:

- The Wind Project will comply with a Weed Management Control and Response Plan in consultation with the Gilliam County Weed Control Board.
- Riparian areas will be avoided in the design and construction of the wind farm.
- Each wind turbine generator and pad-mounted transformer shall be constructed with a cleared pad around each base with a minimum of 15 feet of non-flammable ground cover. Vehicles and buildings will be equipped with fire extinguishers.

### **Land Use**

BPA Action Impacts - The project is entirely in an area zoned for Agricultural Use. BPA's action would remove 2 acres from productive use for agriculture and temporarily disturb an additional 4 acres. Areas of temporary disturbance can be returned to full productivity. BPA would strive to meet similar requirements for construction of the Jones Canyon SS and access road as those required by the county for the wind project.

Wind Project Impacts - Construction of the wind farm would permanently remove 23-29 acres of land from agriculture use and temporarily impact approximately 82 acres of agricultural use. Gilliam County found that the Wind Project is consistent with their land use classification and placed a variety of Conditions of Approval on the Wind Project. These conditions provide the necessary requirements for the Wind Project to meet county land use guidelines.

### **Fish and Wildlife**

BPA Action Impacts – The loss of low-quality shrub-steppe habitat would have a local temporary effect on species that utilize that habitat. Increased human use in the area would have a small impact on local resident species such as mule deer.

Wind Project Impacts – Avian surveys were conducted in the fall of 2002, winter of 2002/2003, and spring of 2003. Raptor nest surveys were conducted as well.

Based on the 12-month avian study conducted during the project design phase, the per turbine mortality rate for birds for the proposed Wind Project is expected to be between approximately 0.5 and 2.5 birds per turbine per year. Actual levels of mortality that would result from the proposed Wind Project are unknown and could be higher or lower depending on patterns of avian movements through the area. Raptor nests are also located in the few juniper trees on the plateau. No construction activities or disturbance would occur within a 0.5-mile radius of any active raptor nest. State-listed species recorded during the studies included golden eagle,

ferruginous hawk, bald eagle, and long-billed curlew. Avian mortality would be monitored for at least two years following initial operation to determine if actual mortality is within the predicted range.

Mule deer are present in the Wind Project area. During construction, they could potentially be displaced temporarily from the site as a result of human presence and construction-related disturbance. Because of the extent of suitable habitat in the region, temporary loss of habitat in the Wind Project area is a minor effect. Once construction is complete it is expected that deer would become habituated to the wind turbines and reoccupy former habitat.

Five species of bats are likely to be resident in the area of the Wind Project; however, they are unlikely to be affected by the construction and operation of the turbines. A majority of the bat mortality from wind turbines appears to be during migration in the fall. There are two species of bats that have the potential to migrate through the area that would likely experience mortality due to the turbines, hoary bat and silver-haired bat). No federally listed bats would be affected. Bat mortality would be monitored for at least two years following initial operation. Should such monitoring determine a significantly higher impact on bat species compared to other existing wind projects in the region, scientific studies aimed at determining effective methods of reducing bat fatalities would be conducted.

No fish are located in waters within the Wind Project area. Because of the distance from fish-bearing waters, it is highly unlikely that the Wind Project would have any effect on fish in the Columbia River. Sediment and erosion control measures would be installed to prevent any sediment from entering fish-bearing waters.

The loss of low to moderate quality shrub-steppe habitat would have a local effect on species that utilize that habitat.

### ***Federally Listed Species***

Other than a single sighting of a single bald eagle, no federally listed threatened or endangered species were observed in the Wind Project area during the 12-month avian study. Given the lack of presence within the project area, no impacts to bald eagles are expected from either BPA actions or the Wind Project activities. No rare plant species have been found in the project area and therefore no impacts are expected.

### ***Wetlands***

*BPA Action Impacts* – No wetlands would be impacted by the project.

*Wind Project Impacts* – No wetlands would be impacted by the project. The Wind Project is required to avoid impacts to wetlands and riparian areas whenever possible.

### ***Public Safety***

*BPA Action Impacts* – Except for fuel and oil used in construction equipment, no combustible materials would be used; therefore, increased risk of fire and explosion would be unlikely. During construction activities, the potential for fires and accidents always exists. However, the switching station would be constructed in accordance with applicable federal health and safety regulations to prevent such occurrences. Standard construction safety measures would be implemented to reduce the risk of hazards and accidents. Best Management Practices (BMPs)



would be employed to reduce or control the potential for environmental health hazards. Significant risks to public health and safety are not anticipated.

Construction of the proposed switching station is expected to take 6 to 9 months. The construction would temporarily increase traffic on roads in and around the access routes. Impacts could be minimized by coordinating construction schedules and equipment access with landowners, other wind projects in the area, and local residents.

During operation, BPA personnel would visit the switching station about once per week. There would be no water supply at the switching station. A portable toilet would be available for personnel.

Wind Project Impacts - Minimal new toxic substances or hazardous waste (small amounts of lubricants and solvents) would be introduced as a result of the proposed Wind Project. Except for fuel and oil used in construction equipment, no combustible materials would be used; therefore, increased risk of fire and explosion would be unlikely. During construction activities, the potential for fires and accidents always exists. However, the Wind Project would be constructed in accordance with applicable state and local health and safety regulations to prevent such occurrences. Standard construction safety measures would be implemented to reduce the risk of hazards and accidents. BMPs would be employed to reduce or control the potential for environmental health hazards. Significant risks to public health and safety are not anticipated as a result of the proposed Wind Project.

Construction of the proposed Wind Project is expected to take 6 to 9 months. Although construction would temporarily increase traffic on roads in and around the Wind Project access routes, impacts would be minimized by coordinating construction schedules and equipment access with landowners, other wind project construction, and local residents. Once the Wind Project is constructed, operations would involve a minor increase in vehicle traffic for project operations staff, since fewer than 15 vehicle trips per day are projected to the Wind Project area.

### ***Air Quality***

BPA Action Impacts and Wind Project Impacts - Temporary emissions would occur during construction of the switching station and the Wind Project from construction vehicles and equipment. There also would be an increased potential for dust generation during construction, when soil is exposed or excavated. This potential would be greatest during dry, windy weather but would be mitigated by applying water for dust control and by gravelling the access roads. When the Wind Project is operational, minimal emissions from any source are expected.

### ***Noise***

BPA Action Impacts – Construction would begin on BPA facilities around March 1, 2004, and be completed in fall 2005. Crews would work 8- to 12-hour days, during daylight hours, as needed to meet the schedule. About 10 to 15 workers would likely work at the site each day during construction.

Routine operations and maintenance activities would be conducted once the proposed BPA switching substation is operational. As a result of some maintenance activities, noise would be created when the disconnect switches and circuit breakers in the switching station are operated. When the switches or breakers are operated, it would cause a brief, loud burst of noise, similar to the type of noise caused by a gunshot. This would occur infrequently. The disconnect

switches would automatically operate when there is a problem with the line to prevent equipment from being damaged and as part of the maintenance of the line, such as when there is a need to repair or replace insulators damaged by vandals or hunters. There are no residences within a mile of the BPA switchyard.

Wind Project Impacts - In general, noise associated with wind energy is greatest during the construction phase, as noise levels from the operation of these types of facilities are low and meet state standards.

### ***Hazardous substances***

Minimal new toxic substances or hazardous waste (small amounts of lubricants and solvents) would be introduced as a result of BPA's proposed action or the proposed Wind Project.

### ***Socioeconomics and Public Facilities***

BPA Action Impacts and Wind Project Impacts – The only community likely to be affected by construction and operation of the proposed switching station and the Wind Project is Arlington. There would be no significant increases in permanent population as a result of construction and operation of the Wind Project because less than 10 people would work full-time once the Wind Project is completed. The Wind Project would not result in a significant increased need for public services, including fire protection. The number of people expected to need temporary lodging or permanent housing within the Wind Project area would be small enough that adequate housing, and other lodging, would be available. The peak onsite work force during construction would be about 150 employees. The Wind Project would have a net economic benefit to the landowners participating in the project because wind lease payments to landowners would provide a supplementary source of income that would help farmers retain their farms when farm prices reduce other sources of farm income. An increase in the Gilliam County tax base would provide benefits to all county residents. Indirect economic benefits would accrue to businesses in the area from construction workers purchasing goods and services.

### ***Historic/Archaeological Resources***

BPA Action Impacts – An archaeological survey of the proposed switching station site and access road was conducted by the Cultural Resource Department of the CTWSR. One potential site was identified and the report filed with the Oregon SHPO. After review by a BPA archaeologist, it was determined that the potential site was not a significant historic property eligible for listing in the National Register of Historic Places. It was determined there would be no impacts to cultural resources. The SHPO concurred with these findings.

Wind Project Impacts – An archaeological survey of the Wind Project site was conducted and a technical report (CTWSRO Report #2104013P) filed with the SHPO on July 25, 2004. Location and distribution of cultural materials indicates usage of the area for possible hunting, observing, or vision quests. All sites that were located are recommended for protection or avoidance through placement of a 30-meter buffer around each site. Mitigation measures identified in the CUP for the Wind Project include:

- Requirement to coordinate with interested local Native American tribes should any cultural artifacts be discovered.

### **Visual Aesthetics**

*BPA Action Impacts* – The BPA switching substation would consist of various electrical equipment, including 4 power circuit breakers, 10 disconnect switches, 4 sets of voltage transformers, and 2 sets of surge arrestors, all connected by metal tubing (known as “bus”). Two lattice towers, each approximately 76 feet tall, would be constructed within the BPA switching substation. All other equipment within the BPA switching station would be less than 28 feet tall. All BPA switching station equipment would be within a fenced area. The chain link fence around the BPA switching substation would be approximately 7 feet tall. The switching substation would also include a 30 x 44 foot control house inside the fence. This one-story structure would house operations equipment. A communications tower, which is a box-type tubular structure with one antennae disk about 6 feet wide, would also be built in the switching substation near the control house. Security lighting would be placed on the perimeter of the switching substation. There are no residences that would likely be able to see this facility.

*Wind Project impacts* – The Wind Project would potentially be visible from long distances from some scattered residences and the interstate freeway. However, these views are expected to be long-range background views in an area of low visual sensitivity.

The indirect effects of the Wind Project on visual aesthetics would be mitigated by the following conditions in the CUP:

- Color and finish limitations on all externally visible components of the Wind Project.
- Limitations on the placement of signs.
- Setbacks of turbines away from roads, lot boundaries, houses, railroad right-of-way, or electrical substations.
- Hooding or directional lighting requirements of any outdoor lights.
- Requirement to complete construction within 12 months from initiation of construction.
- Decommissioning requirements.

### **Cumulative Impacts**

The BP EIS and RP EIS provide an analysis of potential cumulative impacts resulting from development of generation resources and transmission facilities in the region. The following discussion further describes potential cumulative impacts in the project vicinity.

There are several wind projects in the southern Washington and northern Oregon region that are within approximately 20 air miles of the proposed Arlington Wind Energy Project. The operating Klondike Wind Project and its approved expansions and the proposed John Day Wind Project are in Sherman County, Oregon. Three other wind projects are proposed in Gilliam County, Oregon, including the Leaning Juniper Wind Energy Project adjacent to the Arlington project, the Shephards Flat Wind Project, and the Willow Creek Wind Project. Across the Columbia River in Klickitat County, there is the proposed Roosevelt Wind Project. These projects have a combined total of 1,080 MW of wind energy proposed.

The Leaning Juniper Wind Project is proposing to site the collector substation for their wind generation project directly adjacent to the Jones Canyon SS and interconnecting to the FCRTS at this switching station. The timeframes for construction of this facility would be very similar to the Arlington Wind Project. Close coordination will be required during construction of the three

substations side by side. This project is being analyzed and addressed in a separate NEPA process.

These projects, combined with the proposed Arlington Wind Energy Project, would have relatively minor cumulative impacts to fish, wetlands and water resources, public safety, air quality, noise, socioeconomics and public services, and cultural resources. However, potentially significant cumulative impacts might occur to vegetation, land use, wildlife, and visual resources.

There is a large regional landfill operated by Waste Management Inc., Columbia Ridge, just south of the Arlington Wind Project in Gilliam County. This facility would continue to operate and expand to its licensed capacity.

Vegetation – Implementation of all these projects could impact vegetation communities including native shrub-steppe. Because most tillable areas in these counties in private ownership have already been converted to agriculture or are currently grazed, it is unlikely that ongoing agricultural practices would result in the conversion of remaining native vegetation to cropland or pastureland instead of impacts from grazing. Historically, 10.7 million acres of eastern Washington and Oregon were covered in shrub-steppe vegetation, but about 60 percent of that area has been converted to agricultural, industrial, residential, and other uses. The overall additional impact to shrub steppe habitat could be cumulatively significant because so much has already been degraded or lost.

Construction of projects may increase the potential for the spread of weeds into previously undisturbed areas. Because of the awareness of the potential for the spread of weeds, projects include mitigation measures, including the development and implementation of weed control plans that could result in cumulatively insignificant impacts.

Land Use – Cumulative impacts on land use for the wind and transmission projects would be low because these projects would take a very small proportion of agricultural land out of production without changing the overall agricultural usefulness of the area. This would be a minor cumulative land use impact.

Fish and Wildlife – Implementation of the proposed Wind Project combined with the other proposed or planned projects could result in cumulative impacts to wildlife. Wind and transmission projects in the region could impact avian and bat species through collisions with turbines, meteorological towers, and transmission towers and conductors. Increased bird and bat mortality would occur, and an undetermined number of fatalities would be migrants that could pass through more than one wind project during migration.

Results from studies of other wind projects can be useful in predicting mortality at new wind projects. On average, based on four studies of wind projects in Washington and Oregon, approximately 2.7 bird fatalities occur per MW of wind energy produced. Assuming that there are 1,080 MW of wind energy being produced by the above-mentioned projects after construction and expansion, approximately 2,916 bird deaths may occur per year. The significance of this level of mortality is unknown, and other substantial sources of avian mortality such as communications towers, windows, vehicles, powerlines, domestic/feral cats, pesticides, and farming practices undoubtedly occur in the region. While it is hard to predict numbers of

bird deaths from other sources, it is safe to say that it is substantially higher than 2,916 per year, based on a review of the literature regarding avian mortality (NWCC, 2004)<sup>3</sup>.

As with birds, approximately 1.7 bat fatalities occur per MW of wind energy produced in the northwest. Assuming 1,080 MW of wind energy would be produced in the region, approximately 1,836 bat deaths may occur per year. The bat species at highest risk of collision with turbines in Washington and Oregon are hoary bat and silver-haired bat, both tree dwelling migratory species. These bats may come from as far north as Canada and southern Alaska and their range extends across most of Canada and the U.S. Other sources of mortality for hoary and silver-haired bats in Washington and Oregon likely include logging and pesticides. The significance of the cumulative level of mortality is unknown; however, given the extensive range of the species, the expected mortality level is likely a minor portion of the populations.

Other potential impacts to wildlife from wind projects include potential short-term disturbance impacts to big game followed by long-term beneficial effects if the wind project areas become a refuge from hunting for deer. If wind projects do create a refuge effect because they curtail hunting, the long-term cumulative effect may be increased numbers of deer. This may require a change in management strategy or techniques to maintain herd number objectives; however, the cumulative effects to big game species are not considered significant.

Cumulative impacts to fish species would be insignificant due to the lack of direct impacts to fish-bearing waters from these projects. Impacts would mainly be indirect and mitigated for by proactive design and implementation of BMPs at the project level.

*Federally Listed Species* – Results of the baseline wildlife studies conducted in the Wind Project area indicated that bald eagle (federal threatened) rarely occur in the project area; therefore impacts are not expected. Bald eagle also occur in Sherman County and Umatilla County, Oregon, where the Klondike and Stateline wind projects are located. No bald eagle fatalities have been recorded at these projects. Based on this low level of impact, the cumulative effects from the wind projects in the region to the bald eagle are not expected to be significant.

Because there were no listed plant species documented in the Arlington Wind Project area, no additional cumulative impacts to listed plants are expected. Other projects did not have known significant impacts to listed plants species; therefore the cumulative impacts to rare plant species are not considered significant.

*Visual Resources* – Construction of the proposed Wind Project, combined with the other proposed or planned projects, would contribute to a cumulative change in the existing visual character of the region. However, the overall cumulative visual impact from all projects would likely be low to moderate due to the abundance of open, undeveloped areas in the region.

The wind projects in the area may have unavoidable adverse effects on visual resources. However, visual resources are difficult to assess and opinions vary and are highly subjective. Some viewers regard wind farms as a visual attraction, but if they were to become more commonplace on the landscape, the novelty would likely diminish. Other viewers object to some open vistas becoming changed by the placement of turbines across the landscape.

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<sup>3</sup> National Wind Coordinating Committee. November 2004. Wind Turbine Interactions with Birds and Bats: A Summary of Research Results and Remaining Questions. National Wind Coordinating Committee (NWCC) Fact Sheet.

### **Mitigation**

The Council on Environmental Quality's Regulations for Implementing NEPA (40 CFR 1505.2 C) require a ROD to "state whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not."

Specific resource mitigation conditions to avoid or minimize environmental harm have been identified through the Gilliam County Conditional Use Permit process, and also summarized in site-specific impacts listed above. The Wind Project has adopted all identified feasible mitigation measures to avoid or minimize environmental impacts from the Wind Project.

### **PUBLIC AVAILABILITY**

This ROD will be distributed to all interested parties and affected persons and agencies. Copies of the BP EIS, BP ROD, and additional copies of this Arlington Wind Project Interconnection ROD are available from BPA's Public Information Center, P.O. Box 12999, Portland, Oregon, 97212. Copies of these documents may also be obtained by using BPA's nationwide toll-free document request line: 1-800-622-4520, or by accessing website [www.efw.bpa.gov](http://www.efw.bpa.gov).

### **CONCLUSION**

BPA has decided to offer contract terms for interconnection of the Arlington Wind Project into the FCRTS at a new BPA switching station at Jones Canyon in Gilliam County, Oregon. The Standard Large Generator Interconnection Agreement (LGIA) provides for interconnection of the Arlington Wind Project with the FCRTS, the operation of Arlington Wind Project in the BPA Control Area (including control area services such as generation imbalance service), and the maintenance of reliability of the FCRTS and interconnected systems. The LGIA also provides for the construction of the interconnection facilities and their operation and maintenance.

As described above, BPA has considered both the economic and environmental consequences of taking action to integrate power from the Wind Project into the FCRTS. This decision is:

- within the scope of environmental consequences examined in the BP EIS;
- in accordance with BPA's transmission access tariff; and
- in accordance with BPA's statutory authority to make available to all utilities any capacity in this system determined in excess to that required by the United States (16 U.S.C. 838d).

BPA will take measures to ensure the continuing safe, reliable operation of the FCRTS. This ROD identifies all practicable means to avoid or minimize environmental harm that might be caused by the integration of the Wind Project into the FCRTS. BPA adopts and will undertake the mitigations identified in this ROD for the proposed BPA switching station.

The Wind Project has or will soon fulfill all federal, state, and local requirements for environmental compliance such as air emissions, water, wetlands, wildlife species, cultural/historic resources, and land use. Similarly, BPA's proposed switching substation has or will soon fulfill all of these requirements.

BPA contracts providing for integration of power from the Project into the FCRTS at BPA's Jones Canyon SS shall include terms requiring that all pending permits be approved before the contract is implemented. BPA's contracts will also include appropriate provisions for remediation of oil or other hazardous substances associated with construction and operation of related electrical facilities in a manner consistent with applicable Federal, State, and local laws.

Issued in Portland, Oregon.

<u>/s/ Stephen J. Wright</u>	<u>January 14, 2005</u>
Stephen J. Wright	Date
Administrator and	
Chief Executive Officer	