

EXHIBIT B

GENERAL INFORMATION ABOUT THE PROPOSED FACILITY

OAR 345-021-0010(1)(b)

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B.1 DESCRIPTION OF THE PROPOSED FACILITY

OAR 345-021-0010(1)(b) *Information about the proposed facility, construction schedule and temporary disturbances of the site, including:*

OAR 345-021-0010(1)(b)(A) *A description of the proposed energy facility, including as applicable:*

- (i) *The nominal electric generating capacity and the average electrical generating capacity, as defined in ORS 469.300.*

Response: The proposed Montague Wind Power Facility (Facility) is expected to provide up to 404 megawatts (MW) of nominal generating capacity and up to 135 average megawatts (aMW) of energy.

- (ii) *Major components, structures and systems, including a description of the size, type and configuration of equipment used to generate electricity and useful thermal energy.*

Response:

B.1.1 General Description of the Facility

Iberdrola Renewables, Inc. (Applicant) proposes to construct a wind generation facility in Gilliam County, Oregon, with generating capacity of up to 404 MW. No more than 269 turbines will be located at the Facility site, depending on the final turbine size and vendor (as further described in Section B.1.3). Please refer to Exhibit C, Figures C-1, C-2, and C-4 through C-7, for maps of the site vicinity, Facility location, and Facility components, respectively.

The Facility components are proposed on private land for which the Applicant has negotiated or is in the final stages of negotiating long-term wind energy leases with the landowners, or on private land for which the Applicant is in the process of obtaining easements from landowners and other wind developers. The wind energy leases allow the Applicant to permit, construct, and operate wind energy facilities for a defined period. In exchange, the landowners receive compensation from the Applicant. The terms of the wind energy leases allow landowners to continue their farming operations (primarily cultivation of wheat) in and around the wind turbine generators and other facilities where the farming activities do not affect the operation and maintenance of the wind generation equipment. The Applicant will negotiate easements with adjacent landowners for road and collector cable access, as needed.

The total number of acres within the Facility site boundary is 33,402. This number includes 30,090 acres within the site boundary around the turbines, roads, collector lines, and operations and maintenance (O&M) facility(s); 1,048 acres within the site boundary around the overhead transmission line route segment from the western Facility Collector Substation (collector substation) to the central collector substation; 868 acres within the site boundary around the preferred transmission line route segment from the central collector substation to the Bonneville Power Administration (BPA) Slatt Interconnection

Substation (Slatt substation); and an additional 1,396 acres for two distinct alternate transmission line routes from the central collector substation to Slatt substation (see Section B.2.4 for further description of the preferred and alternate routes).

Facility construction is anticipated to begin in late 2010 after issuance of the site certificate. The completion of commissioning and start of commercial operation is targeted for the end of 2011. However, given that construction could conceivably be delayed by weather or other unforeseen circumstances such as market changes, the Applicant would like the flexibility to build the Facility in one or more phases, and requests a deadline for construction completion of 3 years later than the deadline for beginning construction, or 6 years from issuance of the site certificate.

B.1.2 Treatment of Overlapping Site Boundaries

A small portion of the Facility site boundary overlaps with a small portion of the amended Leaning Juniper II Wind Power Facility (LJF) site boundary. Figure C-3 shows the overlap between the Facility site boundary and the LJF site boundary.

The overlapping site boundaries are addressed in two separate permitting efforts: this Application for Site Certificate (ASC) and the Leaning Juniper IIB (LJIIB) *Request for Amendment No. 1 to the Site Certificate for the Leaning Juniper II Wind Power Facility* (RfA). Leaning Juniper Wind Power II, LLC (LJWP) submitted the RfA to the Energy Facility Siting Council (EFSC) on June 26, 2009, a Final Proposed Order was issued on October 15, 2009, and an amended LJF site certificate was approved on November 20, 2009.

The purpose of the overlap between the two site boundaries is to provide the Applicant with the flexibility to construct two turbine strings that were included in the LJF RfA as part of the Montague Wind Power Facility, if they are not constructed as part of the LJF, and also to provide the Applicant with the flexibility to utilize portions of the LJF micro-siting corridor to construct the Montague Wind Power Facility if they are not used as part of the LJF. The Montague Wind Power Facility components would be constructed as described in the Montague ASC and under an EFSC site certificate for this Facility. Alternatively, if these turbine strings are constructed as part of the LJF, LJWP would construct those facility components as described in the LJF RfA and under the amended EFSC site certificate for LJF. Facilities will not be constructed under both permits. The certificate holders will notify the Council before beginning construction of these components and identify the site certificate under which the facilities will be constructed and operated.

B.1.3 Flexibility Regarding Turbine Vendor, Size, Number, and Final Layout

The Facility will use turbines up to 3.0 MW in size, and up to 404 MW will be generated. The turbine vendor, size, number, and actual generating capacity have not yet been determined. This ASC analyzes impacts for two turbines that represent a range of alternative turbine technologies (i.e., encompassing the scale and impacts of the turbines) that could potentially be used at the Facility. The minimum turbine layout is 134 3.0-MW turbines. The maximum turbine layout is 269 1.5-MW turbines. The final layout will have 134 to 269 turbines, with any combination of 3.0-MW turbines to

1.5-MW turbines. The total number of turbines will not exceed 269 and the total MW will not exceed 404.

The Applicant seeks micro-siting flexibility for the Facility with regard to the final layout for turbines and associated collector cables and access roads, as described in Exhibit C. Before construction, the Applicant will determine the number of turbines in each corridor, the spacing between turbines, and their precise locations within the corridor, based on the wind turbine models selected and other various siting criteria.

To demonstrate that the selection of turbine type, number, size, and final layout will be consistent with Council standards no matter what turbine vendor the Applicant selects, the studies and analyses provided in this ASC are based on the worst-case scenario tailored for each resource subject to a Council standard. For example, for the scenic, aesthetic, and noise evaluations, both the maximum and minimum turbine layouts were analyzed to determine the worst-case scenario. For the habitat impacts, the larger of the disturbance areas was analyzed. In this way, the ASC ensures that the Facility will meet all applicable Council standards. This approach is described in more detail in Exhibit C.

B.1.4 Major Facility Components Used to Generate Electricity

B.1.4.1 Turbines

The Facility will have 134 to 269 turbines, depending on final turbine selection. The total number of turbines will not exceed 269. The turbines will be mounted on a concrete pad and spaced up to 1,000 feet apart, depending on the turbine size and vendor specifications.

Wind turbines consist of two main structures: a tubular tower and the nacelle, which rests on the tower. The nacelle houses equipment such as the gearbox and supports the turbine blades and hub. The turbines will interconnect with an underground power collection system that will be linked to two collector substations. The turbines will be grouped in linear strings, and some of the turbines will include aviation warning lights required by the Federal Aviation Administration (FAA). The number of turbines with lights and the lighting pattern of the turbines will be determined in consultation with the FAA.

Wind Turbines – GE 1.5-MW Turbine

The GE 1.5-MW wind turbine is a three-blade, active yaw- and pitch-regulated machine with power and torque control capabilities. The blade diameter is 253 feet (ft) (77 meters [m]) and the height at the hub is 262 ft (80). The swept area of the rotor is up to 6,316 yards² (5,281 square meters) (m²) and the rotor speed is variable, operating up to 18 revolutions per minute (rpm).

Wind Turbines – Vestas V100 3.0-MW Turbine

The Vestas V-100 3.0-MW wind turbine is a three-blade, active yaw- and pitch-regulated machine with power and torque control capabilities. The blade diameter and hub height

are 328 feet (100 m). The swept area of the rotor is 9,389 yards² (7,850 m²) and the rotor speed is approximately 30 revolutions per minute (rpm). Figure B-1 shows a schematic drawing of a typical turbine and tower.

Table B-1 shows the potential turbine specifications with maximum dimensions.

Table B-1. Potential Turbine Specifications

Turbines	1.5-MW GE Turbine	3.0-MW Vestas Turbine
Tower Type	Tubular	Tubular
Blade (Rotor) Diameter	253 ft (77 m)	328 ft (100 m)
Hub Height	262 ft (80 m)	328 ft (100 m)
Total Turbine Height	389 ft (119 m)	492 ft (150 m)
Tower Base	15 ft (diameter)	16 ft (diameter)
Reinforced Concrete Foundation	48 ft (15 m)	80 ft (24 m)
Pedestal	16 ft (5 m) diameter	20 ft (6 m) diameter
Gravel Apron	Up to 15 ft (radius)	Up to 15 ft (radius)
Weight (nacelle and tower)	220 U.S. tons ^a	348 US tons ^a
Concrete per turbine pad	275 cubic yards	707 cubic yards
Maximum sound power level	104 dBA ^b	110 dBA ^b

Notes:

All values are approximate.

^a The weight of the turbine does not include the blades. The total weight of metal in the turbines is not less than 220 U.S. tons (GE) and not more than 348 U.S. tons (Vestas).

^b Table X-6 in Exhibit X provides the maximum sound power levels based on manufacturers’ test data and under warranty by the manufacturer. The overall A-weighted levels are typically guaranteed and subject to a ± 2 decibel at an A-weighted scale (dBA) uncertainty band when measured in accordance with International Electrotechnical Commission (IEC) 61400-11. Supporting warranty documentation will be available when contract documents have been signed with the selected turbine vendor. The numbers shown in this Exhibit B table do not include the ± 2 uncertainty band.

Abbreviations: dBA = A-weighted sound level in decibels; ft = feet; m = meters; MW = megawatt.

Wind Turbine Towers

The tower that supports the wind turbine will be a tapered monopole, shown in Figure B-1, ranging up to 328 ft (100 m) in height, depending on the vendor selected.

Each tower will be uniformly painted a neutral gray or white color approved by the FAA for daylight marking. Each tower will feature a locked entry door at ground level and an internal access ladder with safety platforms for access to the nacelle. A controller cabinet will be located inside each tower at its base. Towers will be fabricated in three sections assembled onsite. The towers will be designed to withstand the maximum wind speeds expected at the Facility – typically 43 meters per second (m/s) (100 miles per hour [mph]) at hub height.

Wind Turbine Foundations

Each turbine tower will be supported by a reinforced concrete foundation ranging up to 80 ft (24 m) in width. The foundation could be either a spread-foot or caisson-type concrete foundation. Figure B-2 presents a sample spread-footing foundation plan. The actual foundation design for each turbine will be determined based on site-specific geotechnical information and structural loading requirements of the selected turbine model.

The portion of the foundation that is above 3 feet below grade is called the pedestal. The bottom of the pedestal will be 3 feet below grade and the top of the pedestal will be 0.5 foot above grade. The pedestal will be up to 20 ft (6 m) in diameter and will be approximately 3.5 feet in depth. The estimated amount of concrete in the pedestal is 26 to 41 cubic yards.

Generator Step-Up Transformer and Transformer Foundations

For all turbine types, a Generator Step-Up (GSU) transformer will be installed at the base of each wind turbine or within the nacelle to increase the output voltage of the wind turbine to the voltage of the power collection system (typically 34.5 kilovolts [kV]). Small concrete slab foundations will be constructed to support the GSU transformers located at the turbine base.

Figure B-3 shows the typical GSU transformer and its foundation. The transformer is a rectangle measuring approximately 7.5 feet by 8.5 feet. Support for the transformer will be provided by a concrete pad or foundation approximately 8 inches thick, which will be placed over 2 feet of weak concrete fill. The weak concrete fill will measure 7.5 feet by 13.5 feet and will be placed under the transformer pad and between the transformer and the tower pedestal. The entire support structure will be above 3 feet below grade. Approximately 1.5 cubic yards will be used in the pad and approximately 11 cubic yards will be used in the concrete fill, for a total of approximately 13 cubic yards of concrete per transformer.

(iii) *A site plan and general arrangement of buildings, equipment and structures.*

Response: A site plan is included in Exhibit C, Figure C-4 (maximum turbine layout) and Figure C-6 (minimum turbine layout).

(iv) *Fuel and chemical storage facilities, including structures and systems for spill containment.*

Response: Although the O&M facility(s) is a related or supporting facility rather than a major component of the energy facility, it is addressed below in response to OAR 345-021-0010(1)(b)(A)(iv) addressing the Facility's fuel and chemical storage facilities.

B.1.4.2 Operations and Maintenance Facility(s)

The Facility will have up to two O&M facilities located on approximately 10 acres each. Approximately 3 acres will be fenced and graveled for the O&M facility, including the

building and adjacent parking and storage. The remaining 7 acres will be used for temporary staging during construction. Each O&M facility will include a one-story building of up to 8,000 square feet. The building(s) will house offices (including office space for several contractors), bathroom and kitchen facilities, a break room, a storage area, a garage for vehicle, turbine, and equipment maintenance, and the supervisory, control, and data acquisition (SCADA) equipment. In addition, the O&M building(s) will be used to store lubricants, oils, grease, antifreeze, degreasers, and hydraulic fluids used in the operation and maintenance of the Facility. Such materials will be stored in approved containers located aboveground. Similarly, lubricants, oils, greases, antifreeze, cleaners, degreasers, or hydraulic fluids being held for delivery to a certified recycling transporter will be temporarily stored in the O&M building(s) in approved containers that will be located aboveground.

The production, use, storage, transport, and disposal of hazardous materials associated with the proposed Facility will be in strict accordance with federal, state, and local government regulations and guidelines. No extremely hazardous materials (as defined by 40 *Code of Federal Regulations* 355) are anticipated to be produced, used, stored, transported, or disposed of as a result of this Facility.

The wind turbines and transformers will likely use the following lubricants, oils, greases, antifreeze, cleaners, degreasers, and hydraulic fluids (or comparable products from other manufacturers):

- Simple Green (cleaner and degreaser)
- Oil-Flo (cleaner and degreaser)
- Mobil SHC 632 (gear oil)
- Mobilux EP 1 (grease)
- Mobil SHC 524 (hydraulic fluid)
- Shell DIALA (R) A oil (mineral oil used as transformer coolant)
- Ethylene glycol (standard commercial antifreeze used in radiators)

None of these products contains any compounds listed as extremely hazardous by the U.S. Environmental Protection Agency (EPA). These products will be used in moderate quantities and will be contained entirely within the spill trap and nacelle, so that the possibility of accidental leakage is minimal. Lubricants, oils, antifreeze, and hydraulic fluids will be checked according to periodic maintenance schedules. The schedule calls for fluid checks more often the first year and then every 6 months thereafter. Fluids will be replenished as needed and changed every 1 to 2 years, as recommended by the manufacturer. Fluid changes will be performed up-tower, where any accidental spill will be contained by the nacelle. Spent lubricants, oils, greases, antifreeze, cleaners, degreasers, and hydraulic fluids will be brought back to the O&M building(s) for temporary storage before being recycled by a licensed waste disposal contractor.

Transformers will contain cooling oil that does not contain polychlorinated biphenyls (PCBs). Transformers will be regularly inspected.

Towers and other Facility equipment will arrive onsite already painted and will rarely need repainting during the life of the equipment. Should any repainting be necessary, it will be performed by qualified, licensed contractors.

Herbicides may be used at the landowner's request to minimize the potential for introduction of weeds into adjacent cultivated areas. Herbicides will be applied either by the landowner or by a licensed contract professional charged with the selection of herbicides. Herbicides will not be stored or disposed of on the Facility site.

The Facility site will be accessed by a variety of construction and O&M vehicles and equipment. Construction equipment and O&M trucks will be properly maintained to minimize leaks of motor oils, hydraulic fluids, and fuels. Refueling and maintenance of vehicles that are authorized for highway travel will be performed offsite at an appropriate facility. However, construction vehicles that are not highway-authorized will be maintained at the Facility as needed.

B.1.4.3 Other Equipment and Systems

(v) *Equipment and systems for fire prevention and control.*

Response: Each wind turbine generator and pad-mounted transformer will be constructed with a concrete pad around each base, surrounded by a nonflammable gravel apron measuring up to 15 feet in radius.

The proposed turbines have built-in equipment protection features that shut down the turbine automatically to minimize the chance of a mechanical problem causing major damage or a fire. The underground electrical collection system substantially reduces the risk of fire from short circuits caused by wildlife or weather.

Onsite employees will receive annual fire prevention and response training by qualified instructors or members of the local fire department. Employees will also be required to keep vehicles on roads and off dry grassland during the dry months of the year, unless such activities are required for emergency purposes, in which case fire precautions will be observed.

Service vehicles assigned to regular maintenance or construction at the Facility site, including the O&M facility(s), will be equipped with a shovel and portable fire extinguisher of a 4A5OBC or equivalent rating.

At the beginning of Facility operations, the certificate holder will provide to the North Gilliam County Rural Fire Protection District a copy of the approved site plan indicating the identification number assigned to each turbine and the location of all Facility structures. During Facility operations, the certificate holder will provide to the North Gilliam County Rural Fire Protection District the names and telephone numbers of Facility personnel available to respond on a 24-hour basis in case of an emergency on the Facility site.

(vi) *For thermal power plants:*

- (I) *A discussion of source, quantity and availability of all fuels proposed to be used in the facility to generate electricity or useful thermal energy;*

Response: While the above rule is not applicable to wind power generation, Figure B-4 is provided to show the frequency and direction of the wind in the general Facility area.

- (II) *Process flow, including power cycle and steam cycle diagrams to describe the energy flows within the system;*

Response: The above rule is not applicable to wind power generation. However, as described earlier in this Exhibit, wind energy will be converted to electricity by turbines generating 1.5 to 3.0 MW, depending on the vendor selected. The proposed turbines will employ an active yaw control (designed to steer the turbine toward the wind), active blade pitch control (designed to regulate wind rotor speed), and a generator/power electronic converter system (designed to produce nominal 60 Hertz, electric power). The rotor spins in a clockwise direction under normal operating conditions when viewed from an upwind location. At speeds exceeding approximately 56 mph, the rotor stops turning. Electricity is generated by the turbines at 600 to 1,000 volts, depending on the manufacturer, and then is converted to 34.5 kV by pad-mounted transformers adjacent to each turbine or transformers located in the nacelle. Power is collected at 34.5 kV and transmitted by underground cables to the collector substations, where it is converted to 230 kV for transmission to the regional transmission network.

- (III) *Equipment and systems for disposal of waste heat;*

Response: The Facility will generate wind power; no waste heat will be generated.

- (IV) *The fuel chargeable to power heat rate;*

Response: Not applicable.

- (vii) *For surface facilities related to underground gas storage, estimated daily injection and withdrawal rates, horsepower compression required to operate at design injection or withdrawal rates, operating pressure range and fuel type of compressors.*

Response: Not applicable.

- (viii) *For facilities to store liquefied natural gas, the volume, maximum pressure, liquefaction and gasification capacity in thousand cubic feet per hour.*

Response: Not applicable.

B.2 DESCRIPTION OF RELATED OR SUPPORTING FACILITIES

OAR 345-021-0010(1)(b)(B) *A description of major components, structures and systems of each related or supporting facility.*

Response: Related or supporting facilities described in this section consist of the power collection system, two collector substations, SCADA system, 230-kV transmission lines, meteorological towers, O&M facility(s), transportation and access roads, and additional construction areas.

B.2.1 Power Collection System

The Facility power collection system will consist of four key elements: (1) a collector system, which collects energy generated at 600 to 1,000 volts (depending on the manufacturer) from each wind turbine, transforms it to 34.5 kV through a pad-mounted transformer or transformer located in the nacelle, and delivers the power through a network of electrical conductors to (2) two new collector substations, which transform energy delivered by the collector system from 34.5 kV to 230 kV and connect to (3) a proposed new overhead 230-kV transmission line, which in turn connects to (4) the existing 500-kV BPA Slatt-Buckley transmission line at the Slatt substation.

The power collection system portion of the Facility's electrical system consists of the collector cable system that will be installed along and between the turbine strings. This system will collect power generated by the individual wind turbines and route the power to the collector substations for delivery into the utility power grid. Each wind turbine generates power at 600 to 1,000 volts (depending on the manufacturer). A transformer adjacent to each tower or within the nacelle transforms the power to 34.5 kV. The power collection system will operate at 34.5 kV.

The majority of the collector cable system will be buried in the soil approximately 3 feet below the ground surface. However, where site-specific considerations require, the collector system may be aboveground. Using aboveground structures allows the collector cables to "span" canyons and intermittent streams and thus to reduce environmental impacts. The overhead transmission line support structures will generally be about 80 to 100 feet tall, depending on terrain.

Approximately 76 miles of collector cables will be placed underground, and 15 miles will run on overhead pole structures. Examples of specific conditions that will make it environmentally or economically advantageous to run portions of the collection system aboveground are as follows:

- Steep terrain where the use of backhoes and trenching machines is infeasible or unsafe
- Stream and wetland crossings where an aboveground line avoids or minimizes environmental impacts
- Soil with low thermal conductivity preventing adequate heat dissipation from the conductor, and rocky conditions that significantly increase trenching costs

Because detailed geotechnical studies have not yet been completed for the Facility, it is not possible to determine the precise locations where aboveground collector cables may be necessary. Geotechnical studies may show that more cables are needed aboveground than originally planned in the preliminary layout. Therefore, in order for the Department to evaluate the potential impact of aboveground collector cables, the Applicant proposes that no more than 30 percent (approximately 27 miles) of the collector system be aboveground.

B.2.2 Facility Collector Substations

The power collection system will link each turbine to the next and ultimately to two new collector substations. One collector substation will be located in the western portion of the site boundary. A 230-kV aboveground transmission line will connect this western substation to the central collector substation and the central collector substation to BPA's existing 500-kV line at the Slatt substation. Figures C-4 and C-6 show the substation locations.

Each substation site will be surrounded by a graveled, fenced area with transformer and switching equipment and an area to park utility vehicles. Transformers will be non-PCB oil-filled types.

Any additional equipment installed at the substations will be located within the existing fenced area. Additional substation equipment may include circuit-breakers, power transformer(s), bus and insulators, disconnect switches, relaying, battery and charger, surge arrestors, AC and DC supplies, control house, metering equipment, SCADA provision, grounding, and associated control wiring.

B.2.3 SCADA System

A SCADA system to be installed at the Facility will collect operating and performance data from each wind turbine and the Facility as a whole, and provide remote operation of the wind turbines. The wind turbines will be linked to a central computer via a fiber optic network. Fiber optic cables for the SCADA system will be installed in the collector cable trenches with or above the power conductors. The SCADA cables will be installed at least 3 feet below ground. Where site-specific conditions require the collector system to be aboveground, the SCADA system will also be aboveground. The host computer is expected to be located in the O&M building(s) at the Facility. The SCADA software consists of applications developed by the turbine vendor or a third-party SCADA vendor.

The specific number of junction boxes to serve the power collection system varies depending on the final turbine layout. Typically, approximately two junction boxes are needed for every 10 turbines. However, a maximum of 5 junction boxes would be constructed per 10 turbines, or a maximum of 34 junction boxes for the Facility.

If portions of the 34.5-kV collector cable system are installed on overhead poles, three wires would be installed per circuit plus an additional shield wire. The ASC requests the flexibility to utilize either single circuit or double circuit poles. For a double circuit, there

would be up to 7 wires, including 3 wires per circuit plus one wire for the shield wire. The SCADA cable is contained inside the shield wire.

As described in Exhibit W, the Applicant's lease agreements specify that in the event of Facility retirement, portions of underground electrical and communication cable buried below 3 feet will be left in place. These actions will allow agricultural use of the Facility site after decommissioning.

B.2.4 230-kV Transmission Line

A new overhead 230-kV transmission line will connect the Facility to the existing 500-kV BPA Slatt-Buckley transmission line at the Slatt substation located approximately 1.5 miles southeast of Arlington, Oregon. The new overhead 230-kV transmission line will run from the Facility's western collector substation to the central collector substation and from the central collector substation to BPA's Slatt substation. The overhead 230-kV transmission line segment from the western collector substation to the central collector substation is approximately 8.2 miles or up to 9 miles in length. Three potential routes are under evaluation for the transmission line segment from the central collector substation to the Slatt substation: a preferred transmission line route that is approximately 8.8 miles long, an Alternate 1 route that is approximately 8.2 miles long, and an Alternate 2 route that is approximately 8.8 miles long. The portion of the transmission line from the central collector substation to the Slatt substation will be up to 10 miles in length. The three routes are shown in Figures C-4 and C-6.

B.2.5 Meteorological Towers

Up to eight permanent meteorological (met) towers will be located within the Facility site boundary for the collection of Facility meteorological data. Permanent meteorological towers will be free-standing (unguyed) structures. The towers will be up to approximately 262 ft (80 m) high with an equilateral triangle base, each side of which will be roughly 25 ft (8 m) long. The met tower foundation will be a square pad measuring approximately 28 feet by 28 feet by 3 feet deep. Figure B-5 provides general design information for a typical met tower foundation.

B.2.6 Operations and Maintenance Facility(s)

Although the O&M facility(s) is a related or supporting facility, it is addressed in Section B.1.4.2 as part of the description of the Facility's fuel and chemical storage facilities, per OAR 345-021-0010(1)(b)(A)(iv).

B.2.7 Transportation and Access Roads

Transportation to and from the site will follow a route that includes access via Interstate, State, and County roads, as further described in Exhibit U. A final transportation plan will be developed in consultation with the Gilliam County Public Works Departments prior to construction.

Constructing the Facility will require improving some existing roads, and constructing new gravel roads to provide access for construction vehicles. The new access roads may continue to be used during Facility operations.

Some existing private roads will be improved by widening, grading, and graveling. Typical existing roads are 8 to 12 feet wide, and will need to be widened to up to 80 feet during construction and up to 20 feet during operations. Where necessary, existing cattle guards will be replaced with wider cattle guards to accommodate the wider roads.

In areas where existing roads do not provide access to wind turbine locations, and along the length of turbine strings, new gravel access roads will be constructed. Generally, these new access roads will be up to 20 feet wide, with up to an additional 60 feet temporarily disturbed for crane paths¹ during construction. Within the Facility, approximately 70 miles of new roads will be constructed (see Exhibit C, Figure C-4). Roads will be designed under the direction of a licensed engineer and compacted to meet equipment load requirements.

B.2.8 Additional Construction Areas

During construction, temporary staging areas will be used to stage construction and store supplies and equipment. A 7-acre staging area will be located within the 10-acre construction areas at each O&M facility. Approximately one 2.5-acre staging area will be located adjacent to each proposed turbine string. Several 5-acre staging areas will be centrally located within the site boundary. The locations of these staging areas are illustrated in Exhibit C in Figures C-4 and C-6.

The staging areas will consist of a crushed gravel surface that will be removed following construction. The disturbed areas will be restored to their preconstruction conditions using seed mixes and techniques developed in consultation with the Oregon Department of Fish and Wildlife (ODFW) and Gilliam County Weed Control Board.

B.3 DIMENSIONS OF MAJOR STRUCTURES AND FEATURES

OAR 345-021-0010(1)(b)(C) *The approximate dimensions of major facility structures and visible features.*

Response: The approximate dimensions of the turbines, collector substations, and O&M facility(s) are addressed in this section.

B.3.1 Turbines

The primary visible Facility structures will be the turbines. As discussed in Section B.1.3, the turbine vendor and size have not yet been selected for the Facility. Turbine towers

¹ The cranes required to erect turbines will temporarily disturb a corridor up to 80 feet wide during transport between turbine locations. This 80-foot corridor will parallel the access road corridor where possible, and will allow for the irregular path made by the 30-foot-wide crane, and up to 25 feet on either side of the crane for support vehicles. Where vegetation needs to be cleared (i.e., vegetation too large for the crane to walk over), the vegetative spoils will be pushed beyond the 60-foot path for up to 10 feet on either side, for a maximum disturbance width of 80 feet. In locations where the crane paths do not parallel access roads, temporary crane paths will be 60 feet in width.

throughout the Facility will be tubular structures up to 328 ft (100 m) tall at the turbine hub. With the nacelle and blades mounted, the total height of the wind turbine will be up to approximately 492 ft (150 m), from the base of the turbine to the blade (also called rotor) tip. The diameter of the circle covered by the turbine blades will be up to approximately 328 ft (100 m); that is, each blade will be up to approximately 164 ft (50 m) long. The towers will be smooth, hollow steel structures, up to 16 feet in diameter at the base. Each tower will be mounted on a reinforced concrete foundation ranging up to 80 ft (24 m) in width or up to 6,400 square feet, depending on the turbine vendor selected. Refer to Figure B-1 for a schematic of the typical wind turbine and tower. Refer to Figure B-2 for the shape and layout of a typical spread-foot tower foundation for a 1.5-MW turbine.

The majority of the turbine foundation will be underground, and only a portion of it will be covered with gravel for fire protection (up to 15 feet of nonflammable groundcover around the towers on all sides, referred to as the gravel apron). The turbine pad and transformer will be located within the graveled area. The area permanently disturbed during operations will be circular with a radius of up to 23 feet, or up to 1,660 square feet. These dimensions include a turbine tower with a radius of up to 8 feet (16 feet in diameter) and surrounding gravel area with a radius of up to 15 feet, which represent the 3.0-MW tower diameter and maximum graveled area (i.e., the worst-case scenario).

During construction, a larger area will be used to lay down the rotors and maneuver cranes during turbine assembly. The typical area of disturbance is a circular area with a radius equal to the blade length, as shown in Figure B-6. In some cases, construction contractors prefer a larger area measuring approximately 160,000 square feet at each of the turbine locations to reduce construction costs. The Applicant has calculated the worst-case impacts in Exhibits C and P, using a temporary staging area of approximately 160,000 square feet at each of the turbine locations.

The Applicant will contract with one or more construction companies to build the tower foundations and gravel aprons. The construction company will be responsible for locating sources of aggregate and concrete and obtaining any related permits.

B.3.2 Facility Collector Substations

The collector substations will be located as shown in Figures C-4 and C-6. Each substation will be situated within a fenced area of approximately 5 acres and will consist of circuit-breakers, power transformer(s), bus and insulators, disconnect switches, relaying, battery and charger, surge arrestors, AC and DC supplies, control house, metering equipment, SCADA provision, grounding, and associated control wiring.

B.3.3 Operations and Maintenance Facility(s)

The Facility will have up to two O&M facility(s) located on approximately 10 acres each. Each O&M facility will include a one-story structure of up to 8,000 square feet. The O&M building(s) will house offices (including office space for several contractors), bathroom and kitchen facilities, a break room, a storage area, a garage for vehicle, turbine, and equipment maintenance, and the SCADA equipment. Approximately

3 acres will be fenced and graveled for the O&M building(s) and adjacent parking and storage. The remaining 7 acres will be used for temporary staging during construction. The O&M building(s) will use exempt groundwater well(s) to supply less than 5,000 gallons per day for commercial/industrial use and a septic system. Power and phone service for the O&M building(s) will be provided by local providers, such as Pacific Power or Columbia Basin and Sprint.

B.4 CORRIDOR EVALUATION AND SELECTION

OAR 345-021-0010(1)(b)(D) *If the proposed energy facility is a pipeline or a transmission line or has, as a related or supporting facility, a transmission line or pipeline that, by itself, is an energy facility under the definition in ORS 469.300, a corridor selection assessment explaining how the applicant selected the corridor(s) for analysis in the application. In the assessment, the applicant shall evaluate the corridor adjustments the Department has described in the project order, if any. The applicant may select any corridor for analysis in the application and may select more than one corridor. However, if the applicant selects a new corridor, then the applicant must explain why the applicant did not present the new corridor for comment at an informational meeting under OAR 345-015-0130. In the assessment, the applicant shall discuss the reasons for selecting the corridor(s), based upon evaluation of the following factors:*

A new overhead 230-kV transmission line will connect the Facility to the existing 500-kV BPA Slatt-Buckley transmission line at the Slatt substation located approximately 1.5 miles southeast of Arlington, Oregon. The new overhead 230-kV transmission line will run from the Facility's western collector substation to the central collector substation and from the central collector substation to BPA's Slatt substation. The overhead 230-kV transmission line from the western collector substation to the central collector substation is approximately 8.2 miles or up to 9 miles in length. Three potential routes are under evaluation for the portion of the transmission line from the central collector substation to the Slatt substation: a preferred transmission line route that is approximately 8.8 miles long, an Alternate 1 route that is approximately 8.2 miles long, and an Alternate 2 route that is approximately 8.8 miles long. The portion of the transmission line from the central collector substation to the Slatt substation will be up to 10 miles in length. The three routes are shown in Figures C-4 and C-6.

The proposed 230-kV transmission line is a related or supporting facility. The Applicant has proposed corridors for the transmission line (or transmission line segments) to allow for micrositing around wetlands, Washington ground squirrel colonies, and other sensitive features. In addition, the Applicant has proposed a preferred and two alternate routes for the portion of the transmission line from the central collector substation to the Slatt substation. As mentioned above, the preferred transmission line route is approximately 8.8 miles long, and the alternate transmission line routes are approximately 8.2 and 8.8 miles long, as shown in Figures C-4 and C-6. All three routes terminate at a proposed interconnection point, as shown in the same figures.

However, there is not an alternative route that is significantly different from these corridors that would better meet the Applicant's needs and at the same time satisfy the Council's standards. The transmission line routes are limited by the need for a direct route to carry electricity from the proposed turbines to the interconnection point at Slatt

substation; by topography; and by the need to locate the route through other wind facilities on land for which the Applicant has negotiated or is in the process of negotiating long-term wind leases or easements with adjacent landowners and developers. The transmission line segment from the western portion of the site boundary to the central collector substation crosses through the Leaning Juniper II Wind Power Facility (LJF) and must be sited around the LJF turbines and other facilities. The transmission line segment from the central collector substation to the Slatt substation crosses through the operating Pebble Springs Wind Power Facility.

In sum, other than the preferred and alternate routes for the transmission line from the central collector substation to the Slatt substation, there are no alternative routes that would “better meet the Applicant’s needs and at the same time satisfy the Council’s standards.”

(i) *Least disturbance to streams, rivers and wetlands during construction;*

Response: Not applicable.

(ii) *Least percentage of the total length of the pipeline or transmission line that would be located within areas of Habitat Category 1, as described by the Oregon Department of Fish and Wildlife;*

Response: Not applicable.

(iii) *Greatest percentage of the total length of the pipeline or transmission line that would be located within or adjacent to public roads, as defined in ORS 368.001, and existing pipeline or transmission line rights-of-way;*

Response: Not applicable.

(iv) *Least percentage of the total length of the pipeline or transmission line that would be located within lands that require zone changes, variances or exceptions;*

Response: Not applicable.

(v) *Least percentage of the total length of the pipeline or transmission line that would be located in a protected area as described in OAR 345-022-0040;*

Response: Not applicable.

(vi) *Least disturbance to areas where historical, cultural or archaeological resources are likely to exist; and*

Response: Not applicable.

(vii) *Greatest percentage of the total length of the pipeline or transmission line that would be located to avoid seismic, geological and soils hazards;*

Response: Not applicable.

- (viii) *Least percentage of the total length of the pipeline or transmission line that would be located within lands zoned for exclusive farm use;*

Response: Not applicable.

B.5 PIPELINE AND TRANSMISSION LINE

OAR 345-021-0010(1)(b)(E) *For any pipeline or transmission line, regardless of size:*

B.5.1 Length of Pipeline or Transmission Line

- (i) *The length of the pipeline or transmission line.*

Response: Under the worst-case scenario, the maximum length of the 34.5-kV collector cables will be approximately 76 miles. The maximum length installed aboveground under the worst-case scenario will be 30 percent of the collector system or 27 miles.

The overhead 230-kV transmission line from the western collector substation to the central collector substation is approximately 8.2 miles or up to 9 miles in length. Three potential routes are under evaluation for the transmission line from the central collector substation to the Slatt substation: a preferred transmission line route that is approximately 8.8 miles long, an Alternate 1 route that is approximately 8.2 miles long, and an Alternate 2 route that is approximately 8.8 miles long, as shown in Figures C-4 and C-6. The portion of the transmission line from the central collector substation to the Slatt substation will be up to 10 miles in length.

B.5.2 Right-of-Way Width

- (ii) *The proposed right-of-way width of the pipeline or transmission line, including to what extent new right-of-way will be required or existing right-of-way will be widened.*

Response: The collector cables will be buried in the soil approximately 3 feet below ground surface, except where overhead lines will be needed to cross streams, wetlands, canyons, or other rugged terrain. The collector system line and any overhead collector cables will occupy private land pursuant to leases or easements with landowners; the leases will authorize placement of the cables and restrict inconsistent or competing uses of the property, but will not necessarily contain any defined right-of-way width. Therefore, no new right-of-way will be required and no existing right-of-way will be widened for a transmission line.

B.5.3 Public Right-of-Way

- (iii) *If the proposed corridor follows or includes public right-of-way, a description of where the facility would be located within the public right-of-way, to the extent known. If the applicant proposes to locate all or part of a pipeline or transmission line adjacent to but not within the public right-of-way, describe the reasons for locating the facility outside the public right-of-way. The applicant must include a set of clear and objective criteria and a description of the type of evidence that would support locating the facility outside the public right-of-way, based on those criteria.*

Response: The proposed corridor for the collector and transmission lines will not include public right-of-way. The Applicant has chosen to use corridors made available in its private land leases and easements rather than public right-of-way to avoid the possibility that the County may, at a later date, choose to expand public roads within existing public right-of-way.

B.5.4 Pipeline Diameter and Location

(iv) *For pipelines, the operating pressure and delivery capacity in thousand cubic feet per day and the diameter and location, above or below ground, of each pipeline.*

Response: Not applicable.

B.5.5 Transmission Line Voltage, Capacity, Current, and Structures

(v) *For transmission lines, the rated voltage, load carrying capacity, and type of current and a description of transmission line structures and their dimensions.*

Response: The location of the underground collector cables is shown in Figures C-4 and C-6. The collector cable and surrounding insulation jacket will have a total diameter of less than 3 inches, as shown in Table B-2.

Table B-2. Typical Underground Collector Cable Dimensions

Cable Size	Diameter (inches)	Insulation Wall Thickness (inches)
1/0 AWG	1.10	0.35
4/0 AWG	2.15	0.35
500 kcmil	1.56	0.35
1,000 kcmil	1.91	0.35

AWG = American wire gauge.
kcmil = thousands of circular mills.

The underground collection system power cable between turbines in a turbine string will be a stranded metal conductor with a size in the 1/0 to 4/0 American wire gauge (AWG) range. The home runs from each string to the collector substations will use a stranded metal conductor with a size generally in the 500 to 1,000 thousands of circular mills (kcmil) range.

The aboveground portion of the collection system will be a 34.5-kV collector line supported by wood or steel two-pole H-frame or wood or steel monopole support structures. The structures will be buried to a depth of approximately 8 feet 6 inches and will have a total height of approximately 56 feet above grade to the top of the poles. The dimensions of the structures for single- and double-circuit poles are shown in Figures B-7 and B-8. Wood or steel monopole support structures may also be used for single and double circuits, as shown in Figures B-9 and B-10. The overhead collection support poles would carry up to two collection circuits, with each circuit consisting of

three conductors for a total of six conductors. Additionally, there would be an overhead composite ground wire with optical fiber.

Overhead collector lines will be constructed in accordance with the recommendations of the Avian Power Line Interaction Committee (APLIC) for raptor protection on power lines (including minimum conductor spacing and the use of anti-perch guards near turbines). Perch guards will be installed on transmission line poles located within ½ mile of turbines. The Applicant has proposed a preferred and two alternate routes for the portion of the transmission line from the central collector substation to the Slatt substation. As mentioned above, the preferred transmission line route is approximately 8.8 miles long and the alternate transmission line routes are approximately 8.2 and 8.8 miles long, as shown in Figures C-4 and C-6. All three routes terminate at a proposed interconnection point, as shown in the same figures.

The 230-kV line will be supported either by H-frame structures with two galvanized steel or wood poles, or by a galvanized steel or wood monopole structure. The structures will rise to a height of approximately 100 feet above grade. The dimensions of the 230-kV monopole overhead transmission line support structure are shown in Figure B-11. The dimensions of the 230-kV H-frame overhead line support structure are shown in Figure B-12. The dimensions of a potential 230-kV transition structure used at canyon crossings for turns or transitions between monopole and H-frame structures are shown in Figure B-13.

B.6 CONSTRUCTION SCHEDULE

OAR 345-021-0010(1)(b)(F) *A construction schedule including the date by which the applicant proposes to begin construction and the date by which the applicant proposes to complete construction. Construction is defined in OAR 345-001-0010. The applicant shall describe in this exhibit all work on the site that the applicant intends to begin before the Council issues a site certificate. The applicant shall include an estimate of the cost of that work. For the purpose of this exhibit, “work on the site” means any work within a site or corridor, other than surveying, exploration or other activities to define or characterize the site or corridor, that the applicant anticipates or has performed as of the time of submitting the application.*

Response: Facility construction is anticipated to begin in late 2010 after issuance of the site certificate. The completion of commissioning and start of commercial operation is targeted for the end of 2011. However, given that construction could conceivably be delayed by weather or other unforeseen circumstances such as market changes, the Applicant would like the flexibility to build the Facility in one or more phases, and requests a deadline for construction completion of 3 years later than the deadline for beginning construction, or 6 years from issuance of the site certificate.

Additional engineering and geotechnical investigations may occur prior to issuance of the site certificate. No other construction work is anticipated to begin prior to issuance of the site certificate. The estimated cost of the preconstruction work is less than \$250,000 [ORS 469.300(4), OAR 345-001-0010(11)].

Figures