EXHIBIT B
GENERAL INFORMATION ABOUT THE PROPOSED FACILITY

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Introduction

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

This Exhibit provides information about the Facility, construction schedule, and both temporary and permanent disturbance.

B.1 Description of the Proposed Facility

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 Applicant proposes to construct the Facility with a nominal generating capacity of up to 500 megawatts (MW) and average generating capacity of up to approximately 167 average MW of energy.

B.1.1 General Description of the Facility

(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

The Applicant proposes to construct the Facility on private land in Gilliam County in north-central Oregon, approximately 7 miles south of Arlington, Oregon. Due to the range of equipment available and market conditions, the Applicant is requesting to retain the flexibility in selecting a turbine vendor, model, size, resulting number, and final layout. The Facility will include approximately 166 to 219 wind turbines, depending on the final turbine size and vendor (see Section B.1.4). The Facility includes the construction and operation of turbines, a 34.5-kV electrical collector system, electrical collector substations, a 230-kV generator lead line (i.e., transmission line), meteorological (met) towers, an operations and maintenance (O&M) building, and access roads. Maps of the site vicinity, Facility layout, and Facility components are included in Exhibit C and include Figures C1, C2, and C3, respectively.

The area within the Facility site boundary encompasses approximately 36,351 acres. As shown in Table C1 of Exhibit C, without accounting for overlapping Facility components within this area, approximately 233.7 acres will be permanently occupied by Facility components, including: turbines, electrical collector substations, met towers, an O&M building, access roads, an overhead 34.5-kilovolts (kV) overhead collector line route, and the overhead 230-kV generator lead line route from the southern electrical collector substation to the proposed Bonneville Power Administration (BPA) Diamond Butte Interconnection Substation (Diamond Butte substation) or the proposed Portland General Electric (PGE) Interconnection Substation at Cedar Spring (Cedar Spring substation).

B.1.2 Treatment of Overlapping Site Boundaries

Baseline Wind, LLC and Montague Wind Power Facility, LLC have been working together to discuss possible cross easements and to explore alternative means of minimizing roads, collector lines, transmission lines and other infrastructure, while maximizing the potential generation output for each respective project.

As Figure B1 illustrates, a small portion of the proposed Facility site boundary overlaps with the Montague Wind Power Facility site boundary. Figure B1a shows the overlap areas in greater detail. On Figure B1a, the lands with black cross-hatching are lands that are currently part of the certificated Montague Wind Power Facility and under lease or easement to Montague Wind Power Facility, LLC, but are proposed to be included in the Baseline Wind Energy Facility. The lands with blue cross-hatching are within the Baseline Wind Energy Facility site boundary and under lease to Baseline Wind, LLC but are not part of the Montague Wind Power Facility. These lands may be proposed for addition to the Montague Wind Power Facility in the future. In that event, these areas would need to be incorporated into the site certificate for the Montague Wind Power Facility. Prior to construction of both Baseline Wind Energy Facility and the Montague Wind Power Facility, the certificate holder would demonstrate site control, as required by the site certificate. Wind turbines belonging to only one energy facility will be built within each of the black and blue cross-hatched areas shown on Figure B1a. In no event will both Baseline Wind, LLC and Montague Wind Power Facility, LLC construct wind turbines in the same black and blue cross-hatched areas.

The proposed Baseline Wind Energy Facility can be constructed with or without a property transfer. Prior to construction, Baseline Wind, LLC will provide the Energy Facility Siting Council (EFSC) the final site plan, which may or may not include components on the land in the cross-hatched areas, and will demonstrate compliance with the pre-construction conditions of the site certificate.

In order to facilitate EFSC's review of this ASC, the Applicant has included suggested conditions, as applicable in the Exhibits. These suggested conditions are substantially modeled on the Montague Site Certificate conditions, and are suggested for discussion purposes only at this time. Ultimately, project conditions are within EFSC's authority upon review of the ASC, including consideration of agency and public comments. Consequently, the suggested conditions are not assurances made by the Applicant, and are intended only to facilitate EFSC review, consistent with the neighboring Montague project.

B.1.3 Flexibility to Select Turbine Vendor, Model, Size, Number, and Final Layout

Due to the range of equipment available and market conditions, the Applicant is requesting to retain the flexibility in selecting a turbine vendor, model, size, resulting number, and final layout. The final selection of turbines will depend on market conditions and more detailed site suitability analyses, and therefore turbine dimensions may vary slightly from the indicative turbines used in the analyses in this ASC. For example, the maximum hub height of currently commercially available turbines is 100 meters. However, the machines used for analysis purposes in this ASC have a slightly shorter hub height. This small additional increase in hub height would not substantially change the conclusions of the analyses presented in this ASC. Final turbine locations will be determined through the micrositing process in accordance with proposed Conditions 24 and 26, which are listed in Section B.7.

To ensure that the Application for Site Certificate (ASC) meets all the Energy Facility Siting Council (EFSC) standards, two indicative turbine models that could potentially be used at the Facility are presented and assessed in this ASC. These two turbine models represent the expected range of turbine technologies from which a final model will be chosen. For each resource subject to an EFSC standard, this ASC presents the "worst-case" scenario describing the potential impacts for the turbines sizes and models under consideration. To determine the worst-case scenario the maximum turbine layout and maximum disturbance areas were used to calculate the greatest potential temporary and permanent impact areas (i.e., the worst-case scenario). For example, for Exhibits I (Soils), J (Wetlands), and S (Historic, Cultural, and Archeological), the maximum turbine layout was assessed to determine the worst-case scenario. For Exhibits K (Land Use), P (Fish and Wildlife), and Q (Threatened and Endangered Species), the maximum turbine layout was shifted into adjacent higher-quality habitat to determine the maximum temporary and permanent disturbance acreage. The worst-case assessment method is described in more detail in Exhibit C.

To maximize the generation efficiency, the Applicant may use a combination of vendor and turbine sizes. However, this ASC assesses two Facility configurations, considering a range of turbines with individual generating capacities of approximately 1.6 to 3.0 MW. The 1.6-MW turbines are substantially equivalent to 1.5-MW turbines in their physical dimensions (tower height, blade length, and rotor diameter) and operational characteristics. The physical dimensions of modern three-bladed turbine towers are not always proportional to their rated electrical generation capacity. For clarity, a 3.0-MW turbine is not twice as tall as, nor does it have a rotor diameter double that of a 1.5-MW turbine. Similarly, a turbine with an 80-meter tower and blades of 50 meters from one manufacturer may be rated to produce 1.8 MW, while a different manufacturer's turbine with the same or nearly identical dimensions might be rated to produce 2.3 MW. These two turbines, while producing different amounts of energy, may still have the same dimensions and same impacts to the built and natural environment.

The minimum turbine layout assessed in this ASC is 166 3.0-MW turbines and the maximum turbine layout assessed is 219 1.6-MW turbines. The final layout will therefore have approximately 166 to 219 turbines, with any combination of 1.6-MW turbines to 3.0-MW turbines.

B.1.4 Major Facility Components Used to Generate Electricity

B.1.4.1 Turbines

Depending on the turbine models selected, approximately 166 to 219 turbines will be located at the Facility. The turbines will be mounted on a concrete pad. Turbine spacing will range between approximately 600 feet (ft) and 3,600 ft depending on the turbine size and vendor specifications.

Wind turbines consist of three primary components: a tubular steel tower, rotor blades, and a nacelle. These components are assembled on a turbine foundation. The nacelle houses equipment such as the gearbox and generator and supports the rotor blades and hub. 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. The turbines will interconnect with an underground power collection system that will be linked to up to 3 electrical collector substations.

Descriptions of two indicative turbine models assessed and basic components of the wind turbine generators are described in the following sections. Figure B2 shows a schematic drawing of a typical turbine and tower.

B.1.5 Wind Turbine Model 1 – GE 82.5 1.6 MW (Maximum Layout)

The GE 82.5 1.6 MW wind turbine is a pitch regulated, upwind, horizontal axis wind turbine with active yaw control and a 3-blade rotor. The machine uses active yaw control to keep the blades pointed into the wind. The turbine has a rotor diameter of 270.7 ft (82.5 meters [m]). The hub height is 262.5 ft (80.0 m). The swept area of the rotor is 6,393.3 yards^2 (5,345.6 m^2).

B.1.6 Wind Turbine Model 2 – Vestas V112 3.0 MW (Minimum Layout)

The Vestas V112 3.0 MW wind turbine is a pitch regulated, upwind turbine with an active yaw system and a 3-blade rotor. The turbine has a rotor diameter of 367.5 ft (112.0 m). The hub height is 308.4 ft (94.0 m). The swept area of the rotor is 11,782.9 yards^2 (9,852.0 m^2) and the rotor can be operated at a variable speed (4.4 to 17.7 revolutions per minute (rpm)).

B.1.6.1 Turbine Towers

The towers supporting the wind turbines will be tapered monopoles. The towers are assembled at each turbine pad from 3 to 5 prefabricated sections (base, middle or lower-middle and top-middle, and top). At this time, the Applicant anticipates that the wind turbine towers will range from approximately 262.5 ft (80.0 m) to 308.4 ft (94.0 m) high at hub height with the total height from tower base to blade tip ranging from approximately 397.9 ft (121.3 m) to 492.1 ft (150.0 m), depending on the final turbine vendor chosen. Although depending on the actual turbine model, the hub height may be up to 100 m. Figure B2 illustrates typical wind turbine and tower components. Typical tower heights are also shown in Figure B2. The final turbine dimensions and ranges will be determined prior to construction in accordance with proposed Condition 24, which is listed in Section B.8.

Access to each tower will be provided through a locked entry door and an internally-mounted ladder and safety platforms leading up to the nacelle housing. Electricity generated in the wind turbine generator is transmitted to the base of the tower through electrical cables. A controller cabinet is located inside the base of the tower. The turbine towers will be mounted on concrete foundations described in more detail below.

Table B1 shows the potential turbine specifications with maximum dimensions.

Table B1: Potential Turbine Specifications

Turbines	Maximum Layout GE 82.5 1.6-MW	Minimum Layout Vestas V112 3.0-MW
Tower Type	Tubular	Tubular
Turbine Rotor Diameter	270.7 ft (82.5 m)	367.5 ft (112.0 m)
Turbine Hub Height	262.5 ft (80.0 m)	308.4 ft (94.0 m)

Table B1: Potential Turbine Specifications

Turbines	Maximum Layout GE 82.5 1.6-MW	Minimum Layout Vestas V112 3.0-MW
Total Turbine Height	397.9 ft (121.3 m)	492.1 ft (150.0 m)
Tower Base Diameter	14.0 ft (4.3 m)	13.5 ft (4.1 m)
Turbine Foundation	53.0 ft (16.2 m)	71.0 ft (21.6 m)
Pedestal Diameter	17.0 ft (5.2 m)	18.0 ft (5.5 m)
Gravel Apron Radius	Up to 25.0 ft (7.6 m)	Up to 35.0 ft (10.7 m)
Weight -Nacelle and Tower	244 (U.S. tons[a])	446 (U.S. tons[a])
Concrete per Turbine Pad	265 (cubic yards)	500 (cubic yards)
Maximum Sound Power Level	106 (dBA[b])	106 (dBA[b])

Notes: All values are approximate.
Abbreviations: dBA[b] = A-weighted sound level in decibels; ft = ft; m = meters

[a] *The weight of the turbine does not include the blades. The total approximate weight of metal in the turbines is not less than 218 U.S. tons (GE 82.5) and not more than 400 U.S. tons (Vestas V112). Note: weights are approximate.*

[b] *Table X5 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 Table B1 do not include the ±2 dBA uncertainty band.*

B.1.6.2 Turbine Foundations

The wind turbine towers will be mounted on reinforced concrete foundations, which will range in size from approximately 53.0 ft (16.2 m) to 71.0 ft (21.6 m) across. The foundation is typically buried with soil cover of not less than 3 ft below grade. The actual foundation design for each turbine/tower assembly will be determined based on site-specific geotechnical information and structural loading requirements for the turbine model selected for the Facility. Typically, turbine tower foundations are of the pier or spread-foot type. Figure B3 illustrates typical foundation types.

B.1.6.3 Rotor Blades

Wind turbine generators are powered by the movement of three fiberglass epoxy or polyester resin blades connected to a central rotor hub. Wind creates lift on the blades, causing the rotor hub to spin. This rotation is transferred to a gearbox where the speed of rotation is increased to the speed required for the attached electric generator that is housed in the nacelle. The rotor blades typically turn at 20 rpm or less. The diameter of the circle covered by the rotors will range from approximately 270.7 ft (82.5 m) to 367.5 ft (112.0 m). Individual rotor blades, hubs, and nacelles are delivered to the Facility and are assembled as they are mounted on the turbine towers. Typical rotor dimensions are shown in Figure B2.

B.1.6.4 Nacelle

The nacelle houses equipment such as the gearbox, electrical generators, and various pieces control equipment and supports the turbine blades and hub. Together, the blades, hub, and nacelle weigh approximately 123 to 232 tons. A yaw system is mounted between the nacelle and the top of the tower on which the nacelle resides. The yaw system is composed of a bearing surface for directional rotation of the turbine, and a drive system consisting of a drive motor(s) to keep the turbine pointed into the wind to maximize energy capture. A wind vane and anemometer are mounted at the rear of the nacelle to signal the controller with wind speed and direction information.

B.1.6.5 Generator Step-Up Transformer and Transformer Foundations

For all turbine models, a Generator Step-Up (GSU) transformer will be installed either in the turbine tower base, within the nacelle, or on a small concrete pad located at the tower base. The GSU transformers will increase electrical power generated by the turbine at 575 to 690 volts (V) to 34.5 kV for delivery to the Facility electrical collector substations. The transformers will be connected to the underground electrical collection system that terminates at one of the Facility's substations.

The steel box housing the transformer circuitry will be located either inside the turbine or mounted on a fiberglass or concrete pad or vault located at the base of each turbine tower. If the transformer is pad-mounted it will be located in a transformer box approximately 7.5 ft by 8.5 ft, with the concrete pad approximately 6 to 10 inches thick. Approximately 1.5 cubic yards of concrete 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 GSU transformer. Site Plan

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

RESPONSE

A site plan is included in Exhibit C.

B.1.7 Fuel and Chemical Storage Facilities

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

RESPONSE

During construction, gasoline, diesel fuel, crankcase oil, lubricants, and cleaning solvents will be present within the Facility and the generator lead line corridor. These products will be used to fuel, lubricate, and clean vehicles and equipment and will be transported in containerized trucks or in other approved containers.

Enclosed containment will be provided for petroleum wastes and petroleum-related construction waste will be removed to a disposal facility authorized to accept such materials. Fuel and chemicals will be properly stored to prevent drainage or accidents. Preventive measures such as the use of vehicle drip pans for overnight parking areas will be used. The construction or maintenance crew foreman will ensure compliance with Stormwater Pollution Prevention Plan (SWPPP) guidelines for spill prevention and response. Additionally, a Spill Prevention Control and Countermeasures (SPCC) Plan will be implemented to prevent spills and identify response procedures (40 Code of Federal Regulations [CFR] Part 112).

Fueling stations will be established at the Facility to service light-duty vehicles and to provide fuel for light-duty vehicles, construction equipment, and portable fuel containers.

Diesel fuel tanks will be located at the Facility material laydown/staging/storage areas for vehicle and equipment fueling. Each fuel tank will be located within secondary containment and each station will be equipped with a spill kit and will be operated consistent with the SPCC Plan.

Potentially hazardous materials used for operations and maintenance of the wind turbine generators and associated facilities may include mineral oils (turbine lubricant and transformer coolant), synthetic oils (turbine lubricant and gear oil), general lubricants, general cleaners, ethylene glycol (antifreeze), vehicle fuel, and herbicides for weed control. These materials will be stored at the O&M building.

Hazardous materials use, storage, and disposal will be in accordance with a Facility Hazardous Materials Management Plan and will comply with applicable local, state, and federal environmental laws and regulations. Accidental releases of hazardous materials (e.g., fuel for vehicles or lubricating oil for turbines) will be prevented or minimized through proper containment of these substances during use and transportation to the site. Hazardous wastes will be removed and disposed of in an appropriately permitted disposal facility.

B.1.8 Fire Prevention and Control

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

RESPONSE

A nonflammable gravel apron measuring up to 35.0 ft in radius will be constructed around the base of each wind turbine generator and pad-mounted GSU transformer. In the event of a mechanical problem, the turbines will have built-in equipment protection features that shut down the turbine automatically to minimize major damage or the possibility of a fire. The electrical collection system will be placed underground, which will substantially reduce the risk of short circuit fires 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. Service vehicles assigned to regular maintenance or construction at the Facility site will be equipped with a shovel and portable fire extinguisher of a 4A5OBC or equivalent rating. 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.

At the beginning of Facility operations, the certificate holder will provide the North Gilliam County Rural Fire Protection District with a copy of the approved site plan, indicating each turbine identification number and all Facility structure locations. In case of an emergency on the Facility site during Facility operations, the certificate holder will provide the North Gilliam County Rural Fire Protection District with the names and telephone numbers of Facility personnel available on a 24-hour basis.

(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

The Facility is not a thermal power plant and therefore OAR 345-021-0010(1)(b)(A)(vi)(I) is not applicable. The Facility will produce electricity from wind energy.

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

RESPONSE

OAR 345-021-0010(1)(b)(A)(vi)(II) is not applicable to wind power generation.

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

RESPONSE

The Facility will produce electricity from wind energy and will not produce waste heat; therefore, OAR 345-021-0010(1)(b)(A)(vi)(III) is not applicable.

(IV) The fuel chargeable to power heat rate;

RESPONSE

OAR 345-021-0010(1)(b)(A)(vi)(IV) is not applicable to wind power generation.

(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

The Facility is not related to underground gas storage; therefore, OAR 345-021-0010(1)(b)(A)(vii) is 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

The Facility will not store liquefied natural gas; therefore, OAR 345-021-0010(1)(b)(A)(viii) is 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

Supporting facilities consist of the electrical collection system, up to 3 electrical collector substations, a supervisory, control, and data acquisition (SCADA) system, a 230-kV overhead generator lead line, 34.5-kV overhead and underground collector lines, met towers, an O&M building, access roads, and additional construction areas.

The Applicant is requesting to retain the flexibility in selecting the final number, location, and dimensions of supporting facilities. Before construction, the Applicant will determine the exact number and dimensions of supporting facilities and their precise locations within the Facility site boundary. Final supporting Facility locations and will be determined through the micrositing process in accordance with proposed Condition 26, which is listed in Section B.7.

B.2.1 Electrical Collection System

Underground electrical collector lines will be installed between turbines to collect power generated by the individual wind turbine generators. The electrical collection system will consist primarily of medium-voltage, high-density, insulated underground cables connecting multiple turbines to a substation. Between the turbine arrays, the collector lines will generally follow Facility access roads to one of the collector substations.

The collector system will be buried underground except for limited sections that may be located aboveground to span steep terrain, (which is not safely accessible using common construction equipment), waterbodies (to reduce environmental impacts resulting from trenching), or where subsurface soil conditions are incompatible with collector line heat dissipation specifications or are overly rocky and require specialized trenching techniques. Overhead collector line locations will be determined during micrositing based on detailed geotechnical studies. For this ASC, the Applicant has calculated up to 30 percent (approximately 45.5 miles) of the collector system will be overhead. Collector lines strung aboveground will be hung on overhead pole structures approximately 40 to 60 ft tall. It is estimated that approximately 801 poles will be needed.

If portions of the 34.5-kV collector cable system are installed on overhead poles, three wires will be installed per circuit plus an additional shield wire. The Applicant requests the flexibility to utilize either single circuit or double circuit poles. For a double circuit, there will be up to 7 wires, including 3 wires per circuit plus 1 wire for the shield wire.

Trenches for each underground collector line will provide a minimum of 3 ft of cover and will be about 3 ft wide. In some areas where the conductors from multiple strings converge to a single substation, several trenches may be placed side-by-side. As described in Exhibit W, in the event of Facility retirement, portions of underground electrical and communication cable buried below 3 ft will be left in place. These actions will allow agricultural use of the Facility site after decommissioning.

The specific number of junction boxes to serve the electrical collection system will vary depending on final turbine layout. It is estimated that up to 100 junction boxes will be constructed for the Facility.

B.2.2 Electrical Collector Substations

The electrical collector system will link each turbine in its respective string, and ultimately connect multiple turbine strings to up to 3 electrical collector substations. The collector substations will increase the voltage of the power being delivered at 34.5 kV by the electrical collection system to 230 kV for delivery through the 230-kV generator lead line to the proposed BPA Diamond Butte substation or PGE Cedar Spring substation. The locations of the collector substations, BPA Diamond Butte substation, and PGE Cedar Spring substation are also shown on Figures C2 and C3. However, as with other supporting facilities, the Applicant is requesting the flexibility to provide EFSC with the final location of these structures through the micrositing process in accordance with proposed Conditions 24 and 26, which are listed in Section B.7.

The collector substations will each permanently occupy an approximately 6-acre graveled area. Gravel will be approximately 12 inches in depth. Approximately 8 acres of land will be temporarily disturbed during construction. Transformers will be non-polychlorinated biphenyl (non-PCB), oil-filled types. Additional substation equipment will include circuit breakers, power transformer(s), bus and insulators, disconnect switches, surge arrestors, alternating current/direct current (AC/DC) supplies, grounding, and associated control wiring. A control house will contain relays, battery and charger, metering equipment, and SCADA equipment. Other proposed substation equipment includes backup power supply equipment. The collector substation areas will be surrounded by an 8-foot-high chain-link fence topped with barbed wire.

B.2.3 230-kV Generator Lead Line

A new overhead 230-kV generator lead line will connect the Facility to BPA's proposed Diamond Butte substation along the Ash-Marion 500-kV line or PGE's proposed Cedar Spring substation. Approximately 22.5 miles of generator lead line will be constructed for interconnection of the Facility with the Diamond Butte substation or Cedar Spring substation. The generator lead line structures will be wood or steel towers. Tower heights may vary from 80 to 135 ft above the ground surface, depending on terrain and type of structure. It is estimated that approximately 238 towers will be needed.

B.2.4 Interconnect Substation

The 230-kV generator lead line will terminate on private land at the proposed BPA Diamond Butte substation or proposed PGE Cedar Spring substation. The interconnect substation equipment may include circuit breakers, bus and insulators, disconnect switches, surge arrestors, AC/DC supplies, grounding, and associated control wiring. A control house will contain relays, battery and charger, metering equipment, and SCADA equipment. The transmission facilities will conform to all applicable Oregon electrical codes, as required.

B.2.5 SCADA System and Fiber Optic Communications

A SCADA system will be installed at the Facility to collect operating and performance data from each wind turbine and the Facility as a whole, and to provide remote operation of the wind turbines from the O&M building. The SCADA software consists of applications developed by the turbine vendor or a third-party SCADA vendor.

The wind turbines will be linked to a central computer in the O&M building by a fiber optic network. The fiber optic cables used for SCADA communication will be placed in the same trenches used for the electrical collection system. The SCADA cables will be installed a minimum of 3 ft below ground. As noted above, in some areas the electrical collector system may need to be located aboveground – in such cases the fiber optic cables will also be strung overhead on the same structures. An underground fiber optic cable will connect the O&M building to a substation; from there, the cable will be mounted near the top of the generator lead line tower structures to connect the substation to the interconnection point with the proposed Diamond Butte substation or PGE Cedar Spring substation.

B.2.6 Meteorological Towers

Depending on final turbine design and turbine manufacturer requirements, up to 7 permanent, freestanding (un-guyed) lattice-type steel met towers will be erected within the facility site boundary to monitor and document wind conditions during Facility operations. The towers will be up to approximately 328 ft (100 m) high with an equilateral triangle base measuring approximately 25 ft each side. The met towers will have a mat with raised pier foundation consisting of approximately 50 cubic yards of concrete in each foundation. All permanent met towers and their associated access roads will be located within the facility site boundary.

B.2.7 Operations and Maintenance Building

The permanent footprint of the O&M building (including parking area) will be approximately 3 acres, with a 1- or 2-story building of 30,000 square ft (sq ft) or less in area. It will be approximately 45 ft (14 m) in height. Approximately 5 acres of land will be temporarily disturbed during construction. The O&M building will include: offices, spare parts storage, restrooms, a kitchen, a storage area, a vehicle and equipment maintenance area, a shop area, and the SCADA equipment; outdoor parking and a turnaround area for large vehicles; outdoor security lighting; and full perimeter fencing with gated access. Limited maintenance or repair of turbine components will also be provided in conjunction with parts and equipment storage. Ambient conditions within the O&M building will be maintained to meet equipment operating requirements and support the presence of maintenance personnel.

The O&M building footprint will also be used for laydown and secure storage during Facility construction. Following construction, the parking area will be surfaced with gravel. The building will be painted to blend with the surrounding landscape, and the undeveloped area around the building will be landscaped with native grasses and shrubs. The O&M building area will be secured with fencing. Building security lighting will be directed downward to avoid nighttime glare.

B.2.8 Transportation and Access Roads

Transportation to and from the site will occur via interstate, state, and county roads, as further described in Exhibit U. Prior to construction, a final transportation plan will be developed in consultation with the Oregon Department of Transportation (ODOT) and Gilliam County Public Works Departments.

A network of roads will be established for access to operate and maintain the wind turbines. These roads will provide access during construction and long-term operation of the Facility. The network will consist of new private, Facility access roads, and existing public roads.

In areas where existing roads do not provide access to proposed wind turbine locations, and along the length of turbine strings, new permanent Facility access roads will be constructed. Some existing public roads will require widening and surface improvements, as necessary.

Approximately 56.9 miles of new Facility access roads and 6.4 miles of crane paths will be constructed and approximately 16.7 miles of existing, public roads will require widening and surface improvements (see Exhibit C, Figures C2 and C3 and Table C1). During construction, new Facility access roads will have a temporary width of up to 75 ft, and crane paths[1] will have a temporary width of up to 50 ft. When width improvements are needed, existing public roads will be improved to a width of up to 36 ft.

Following construction, the width of the Facility access roads will be reduced to a maximum of 17 feet, with road shoulders on either side being reseeded. Any temporary access roads developed to access the Facility during construction will be decommissioned and reseeded at the conclusion of construction. Crane paths will be decompacted, reseeded and restored to preconstruction conditions. Improvements of public roads will be retained unless requested to be returned to their pre-construction condition by the applicable road management agency.

Access roads, whether newly constructed or improved existing roads, will have a compacted base of native soil, and will be graveled to a depth of 6 to 12 inches. Roads will be designed under the direction of a licensed engineer and compacted to meet equipment load requirements.

B.2.9 Additional Laydown and Staging Areas

The Facility will include temporary laydown areas to be used to stage construction and store equipment and supplies. During construction, staging areas will be located at each turbine site. A 2.0-acre temporary staging area will be located within the 5.0-acre construction area at the O&M building location. Additionally, three, 10.0-acre staging areas will be located within the Facility site boundary. The staging areas will consist of 6 to 12 inches of crushed gravel surface. Following construction, the gravel will be removed, and the disturbed areas will be reseeded using seed mixes and techniques developed in consultation with the ODFW and Gilliam County Weed Control Board or returned to agricultural use, as applicable.

If a new batch plant is required for concrete mix, a qualified contractor will be responsible for obtaining all necessary permits to establish and operate the batch plant. If a new or use of an existing quarry is required for gravel and rock, a qualified contractor will be responsible for obtaining all necessary permits.

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, electrical collection system, substations, and O&M building are described in this section.

B.3.1 Turbines

As discussed in Section B.1.3, the turbine vendor and size have not yet been selected because the final selection of turbines will depend on market conditions and more detailed site suitability analyses. This ASC analyses two indicative turbine types to calculate the

[1] The cranes required to erect turbines will temporarily disturb a corridor up to 50 ft wide during transport between turbine locations. This 50-ft corridor will parallel the access road corridor where possible, and will allow for the irregular path made by the 30-ft-wide crane, and up to 10 ft on either side of the crane for support vehicles.

greatest potential temporary and permanent impacts for each resource subject to an EFSC standard. In this analysis, the turbine towers will be tubular structures up to 308.4 ft (94.0 m) high at hub height. Although depending on the actual turbine model, the hub height may be up to 100 m.

The total height of the wind turbine will be up to approximately 492.1 ft (150.0 m), from the tower base to the rotor blade tip. The diameter of the circle covered by the turbine blades will be up to approximately 367.5 ft (112.0 m) (i.e., each blade will be approximately 183.8 ft (56.0 m) long). The towers will be smooth, hollow, steel structures, up to 14.0 ft in diameter at the base. Each tower will be mounted on a reinforced concrete foundation of up to 71.0 ft (21.6 m) in width or up to 4,176 sq ft, depending on the turbine vendor selected. Figure B2 shows a schematic of the typical wind turbine and tower and Figure B3 shows the shape and layout of a typical pier and spread-foot type tower foundation.

The majority of the turbine foundation will be underground with the upper portion covered with gravel forming a nonflammable gravel apron up to 35 ft in radius for fire protection. The graveled area will contain the turbine pad and potentially the GSU transformer. Based on 3.0-MW turbine tower base radius of up to 6.8 ft (13.5 ft in diameter), the permanent surrounding gravel area will have an additional radius of up to 35.0 ft, or up to 3,850 sq ft.

During turbine assembly, a larger area will be used to laydown the rotors and operate cranes. Figure B4 shows the typical area of temporary disturbance.

The contractor building the tower foundations and gravel aprons will be responsible for locating sources of concrete, gravel, and rock and obtaining any permits related to a new batch plant or quarry, as discussed in Exhibit E.

B.3.2 Electrical Collector Substations

Figures C2 and C3 show the locations of up to three electrical collector substations. Each substation will be fenced within an approximately permanent 6-acre area and will consist of circuit-breakers, power transformer(s), bus and insulators, disconnect switches, surge arrestors, grounding, and associated control wiring. A control house will contain relays, battery and charger, metering equipment, and SCADA equipment. Approximately 8 acres of land will be temporarily disturbed at each site during construction.

B.3.3 Operations and Maintenance Building

As discussed in Section B.2.7, the Facility will have 1 O&M building. The O&M building will include a one- or two-story building of up to 30,000 sq ft located on approximately 3 acres. A 2.0-acre temporary staging area will be located within the 5.0-acre construction area at the O&M building location. The O&M building will include offices (including office space for several contractors), restrooms, kitchen, storage area, vehicle and equipment maintenance area, shop area, and the SCADA equipment. During construction, approximately 3 acres will be fenced and graveled for the O&M building, adjacent parking, and storage. The remaining 2 acres will be used for temporary laydown and staging during construction. The O&M building will use exempt groundwater well(s) to supply 5,000 gallons per day (gpd) or less for sanitary, kitchen, and some industrial purposes. The O&M building is located adjacent to Oregon Highway 19 (OR 19). Electric and telephone service for the O&M building will be provided by local utility providers and will likely be drawn from existing lines along the OR 19 corridor, which also provide service to nearby residences.

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:*

RESPONSE

OAR 345-021-0010(1)(b)(D) is not applicable as the generator lead line is not, by itself, an energy facility under the definition in ORS 469.300(11)(a).

B.5 Pipeline or 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

The Facility does not propose the construction of a pipeline.

As noted above, the Facility proposes construction of an electrical collection system and a 230-kV generator lead line. Under the worst-case scenario, approximately 151.8 miles of collector cable will be buried underground and up to approximately 45.5 miles of 34.5-kV collector line will be strung overhead on pole structures. The maximum length installed overhead 34.5-kV collector line under the worst-case scenario will be 30 percent of the collector system.

The length of overhead 230-kV generator lead line from collector substation to the Diamond Butte or Cedar Spring substation is approximately 22.5 miles.

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 a minimum of 3 ft below ground surface, except where overhead collector lines will be needed to cross streams, wetlands, canyons, or other rugged terrain. The collector system cables, overhead collector line, and the generator lead line will be located for the most part on private land pursuant to leases or easements with landowners. Some sections of the collector system and generator lead line may be located within existing public right-of-way, with the appropriate authorizations received from the respective right-of-way manager (e.g. Gilliam County or ODOT). No new private or public right-of-way will be established, or existing right-of-way widened for any of the above described facilities.

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 will 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 will support locating the facility outside the public right-of-way, based on those criteria.

RESPONSE

For the most part, the collector and generator lead line corridors will occupy private land pursuant to leases or easements with landowners, rather than public right-of-way. Due to constructability issues and restriction to turbine access in some areas, some of the proposed collector line and generator lead line corridors are anticipated to follow (and be adjacent to), or be located within, the public right-of-way along sections of Berthold Road, Bottemiller Road, OR 19 (also known as the John Day Highway), Baseline Road, and Ridge Road.

B.5.4 Pipeline Diameter and Location

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

RESPONSE

There is no pipeline associated with the Facility; therefore, OAR 345-021-0010(1)(b)(E)(iv) is 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 34.5-kV underground collector lines (approximately 151.8 miles) is shown in Figures C2 and C3. The underground collection system power cable between turbines in a turbine string will be a stranded metal conductor with a size in the range of .04 inch diameter to 0.6 inch diameter. The home runs from each string to the collector substations will use a stranded metal conductor with a size generally in the range of 0.8 inch diameter to 1.2 inch diameter.

Depending on construction constraints, up to 45.5 miles of 34.5-kV collector line will be strung overhead on pole structures. The overhead 34.5-kV collector line will be supported by wood or steel support structures. Figure B5 shows the typical dimensions of support structures. The structures will have a height of 40 to 60 ft above grade to the top of the poles. The overhead collection support poles will carry up to two collection circuits, with each circuit consisting of three conductors (six conductors total), and an overhead composite ground wire with fiber optic cable.

Approximately 22.5 miles of 230-kV generator lead line will be constructed for interconnection of the Facility with the Diamond Butte substation or Cedar Spring substation. The 230-kV generator lead line will be supported by wood or galvanized steel 2-pole H-frame or monopole support structures. Figure B5 shows the dimensions of the 230-kV monopole generator lead line support structure. The structures will have a height of 80 to 135 ft above grade.

Overhead lines will be constructed in accordance with the recommendations of the Avian Power Line Interaction Committee (APLIC) for raptor protection on power lines.

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

The Applicant requests a discussion with ODOE regarding the extent of flexibility permissible in selecting Facility construction start and end dates within time periods that can accommodate the evolving renewable energy supply market.

Engineering, environmental and geotechnical investigations may occur 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)).

B.7 Proposed Site Certificate Conditions

Since Conditions 1 through 23 are provided under EFSC rules; therefore, the Applicant's proposed conditions begin at Condition 24.

Similar to the conditions proposed by previously-approved wind energy facilities in the vicinity of the Facility, the Applicant proposes the following conditions:

Condition 24
The certificate holder shall construct the Facility substantially as described in the site certificate and may select turbines of any type, subject to the following restrictions and compliance with all other site certificate conditions. Before beginning construction, the certificate holder shall provide to the Department a description of the turbine types selected for the Facility demonstrating compliance with this condition.

(a) The combined peak generating capacity of the Facility must not exceed 500 MW and the peak generating capacity of any individual turbine must not exceed 3.0 MW.

(b) The turbine hub height must not exceed 100 m and the maximum blade tip height must not exceed 150 meters.
(c) The minimum blade tip clearance must be 30 meters above ground.
(d) The certificate holder shall request an amendment of the site certificate to increase the combined peak generating capacity of the Facility beyond 500 MW, to increase the number of wind turbines, to install wind turbines with a hub height greater than 100 meters, or to increase the blade tip height greater than 150 meters or a blade tip clearance less than 30 meters above ground.

Condition 25

Before beginning construction, the certificate holder shall notify the Department in advance of any work on the site that does not meet the definition of "construction" in ORS 469.300, excluding surveying, exploration or other activities to define or characterize the site, and shall provide to the Department a description of the work and evidence that its value is less than $250,000.

Condition 26

Before beginning construction and after considering all micrositing factors, the certificate holder shall provide to the Department, to the Oregon Department of Fish and Wildlife (ODFW), the State Historic Preservation Office (SHPO) and the Planning Director of Gilliam County detailed maps of the Facility site, showing the final locations where the certificate holder proposes to build Facility components, and a table showing the acres of temporary and permanent habitat impact by habitat category and subtype.

Condition 27

Before beginning construction, the certificate holder shall submit to the State of Oregon through the Council a bond or letter of credit in the amount described herein naming the State of Oregon, acting by and through the Council, as beneficiary or payee. The initial bond or letter of credit amount is either to be adjusted to the date of issuance as described in (b), or the amount determined as described in (a). The certificate holder shall adjust the amount of the bond or letter of credit on an annual basis thereafter as described in (b).

(a) The certificate holder may adjust the amount of the bond or letter of credit based on the final design configuration of the Facility and turbine types selected by applying the unit costs and general costs and calculating the financial assurance amount, adjusted to the date of issuance as described in (b) and subject to approval by the Department.

(b) The certificate holder shall adjust the amount of the bond or letter of credit, using the following calculation and subject to approval by the Department:

(i) Adjust the Subtotal component of the bond or letter of credit amount (expressed in mid-2010 dollars) to present value, using the U.S. Gross Domestic Product Implicit Price Deflator, Chain-Weight, as published in the Oregon Department of Administrative Services' "Oregon Economic and Revenue Forecast" or by any successor agency (the "Index") and the quarterly index value for the date of issuance of the new bond or letter of credit.

(ii) Add 1 percent of the adjusted Subtotal (i) for the adjusted performance bond amount to determine the adjusted Gross Cost.

(iii) Add 10 percent of the adjusted Gross Cost (ii) for the adjusted administration and project management costs and 10 percent of the adjusted Gross Cost (ii) for the adjusted future developments contingency.

(iv) Add the adjusted Gross Cost (ii) to the sum of the percentages (iii) and round the resulting total to the nearest $1,000 to determine the adjusted financial assurance amount.

(c) The certificate holder shall use a form of bond or letter of credit approved by the Council.

(d) The certificate holder shall use an issuer of the bond or letter of credit approved by the Council.

(e) The certificate holder shall describe the status of the bond or letter of credit in the annual report submitted to the Council under Condition 21.

(f) The bond or letter of credit shall not be subject to revocation or reduction before retirement of the Facility site.

Condition 28

If the certificate holder elects to use a bond to meet the requirements of Condition 27, then the certificate holder shall ensure that the surety is obligated to comply with the requirements of applicable statutes, Council rules and the site certificate when the surety exercises any legal or contractual right it may have to assume construction, operation or retirement of the Facility. The certificate holder shall also ensure that the surety is obligated to notify the Council that it is exercising such rights and to obtain any Council approvals required by applicable statutes and Council rules and this site certificate before the surety commences any activity to complete construction, operate, or retire the Facility.

Condition 29

The certificate holder shall contractually require all construction contractors and subcontractors involved in the construction of the Facility to comply with all applicable laws and regulations and with the terms and conditions of the site certificate. Such contractual provisions shall not operate to relieve the certificate holder of responsibility under the site certificate.

Condition 30

To ensure compliance with all site certificate conditions during construction, the certificate holder shall have a full-time, construction manager supported by qualified environmental professionals who will ensure all ongoing site certificate conditions. The certificate holder shall notify the Department of the name, telephone number, and e-mail address of this person and shall keep the Department informed of any change in this information.

Condition 31

Within 72 hours after discovery of conditions or circumstances that may violate the terms or conditions of the site certificate, the certificate holder shall report the conditions or circumstances to the Department.

Figures