Request for Amendment 4 to the Site Certificate for the Biglow Canyon Wind Farm

Submitted to:

Oregon Department of Energy

Prepared by:

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3WTC-0403

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December 2025

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Acronyms and Abbreviations

AC	alternating current
BESS	battery energy storage system
BCWF or Existing Facility	Biglow Canyon Wind Farm
BIGL or Project Developer	BIGL bn, LLC
Certificate Holder or PGE	Portland General Electric Company
CFR	Code of Federal Regulations
Council or EFSC	Energy Facility Siting Council
DC	direct current
EPA	U.S. Environmental Protection Agency
EPC	engineering, procurement, and construction
ESCP	Erosion and Sediment Control Plan
gen-tie	generation tie
GSU	generator step-up
HV	high-voltage
HVAC	heating, ventilation, and air conditioning
ISU	inverter step-up
kV	kilovolt
Li-ion	lithium-ion
MW	megawatt
MWh	megawatt-hour
NPDES	National Pollutant Discharge Elimination System
O&M	operations and maintenance
OAR	Oregon Administrative Rules
ODEQ	Oregon Department of Environmental Quality
ODOE	Oregon Department of Energy
ORS	Oregon Revised Statute
PCS	power conversion station
POI	point of interconnect
PV	photovoltaic
RFA	Request for Amendment
SCADA	supervisory control and data acquisition
Site Certificate	Site Certificate on Amendment 3

Solar Components	photovoltaic solar energy generation and battery storage
SPCC	Spill Prevention, Control, and Countermeasures
W	watt
WPCF	Water Pollution Control Facilities

1.0 Introduction

1.1 Project Summary and Request

The Portland General Electric Company (PGE or Certificate Holder) submits this Request for Amendment (RFA) 4 to the Site Certificate on Amendment 3, issued October 31, 2008 (Site Certificate) for the Biglow Canyon Wind Farm (BCWF or Existing Facility) to add photovoltaic (PV) solar energy generation and battery storage to the operating BCWF in Sherman County, Oregon.

BCWF, owned and operated by PGE, is located within an approved site boundary comprising approximately 25,000 acres, approximately 4.5 miles northeast of the town of Wasco in Sherman County, Oregon (Figure 1). The BCWF operates under the Site Certificate from the Oregon Energy Facility Siting Council (Council or EFSC) as administered by the Oregon Department of Energy (ODOE). BCWF currently consists of 217 wind turbines, with a maximum blade tip height of 445 feet, and a peak generating capacity of 450 megawatts (MW).

In RFA 4, PGE proposes to add up to 125 MW alternating current (AC) generating capacity from PV solar arrays and 125 MW in battery storage capacity (Solar Components) in approximately 1,445 acres of land (Solar Area) sited within the existing BCWF site boundary Solar Micrositing Area (RFA 4 Site Boundary;[1] see Figure 3).

The Solar Micrositing Area is approximately 1,924 acres and provides a conservative estimate of the maximum area needed for development, micrositing, and temporary disturbances from the Solar Components during construction, rather than the anticipated temporary and permanent disturbance footprint. Within the Solar Micrositing Area, the Certificate Holder has identified a reduced footprint where Solar Components will be concentrated (Solar Area; 1,445 acres). Solar Components will include solar arrays, inverters, battery energy storage system (BESS) facilities and their subcomponents (i.e., inverters), a collector substation, approximately 600 feet of a new 230-kilovolt (kV) generation tie (gen-tie) transmission line, medium voltage collector lines, operations and maintenance (O&M) structures (containers and temperature-controlled modular building), site access roads, internal roads, perimeter fencing, facility entry gates, and temporary laydown areas. The maximum generating capacity from the Solar Components will be 125 MW AC, and the infrastructure will be fenced within the Solar Micrositing Area and will cover up to 1,445 acres (Solar Area).

PGE will own and operate the Solar Components as a part of the BCWF, which, to date, have been developed by BIGL bn, LLC (BIGL, or Project Developer). BIGL, in its capacity as the project developer, supports PGE in this RFA 4 and may construct and temporarily operate the Solar Components on behalf of PGE under a Build-Transfer Agreement.

[1] Note, as described in further detail below in Section 4.1.1.2, the Solar Micrositing Area is the equivalent of the Solar Micrositing Area/RFA 4 Site Boundary.

1.2 RFA 4 Layout

The proposed layout for the Solar Components includes a primary area of infrastructure improvements within the Solar Micrositing Area. The Solar Area will connect to the electrical grid through the existing point of interconnect (POI) at the Biglow Canyon Substation, which is situated within the Solar Micrositing Area and shown in Figure 2.

Solar Micrositing Area: The Solar Micrositing Area is a continuous area of land that covers approximately 1,924 acres, fully within the approved BCWF site boundary, within which construction of the infrastructure identified in Section 4.0 of this document may occur, subject to site certificate conditions. This area includes the Existing Facility's current POI and may be expanded to add a new 230-kV line terminal, all Solar Components, and the fenced area for where such components will be located (1,445 acres; Solar Area).

Solar Area: This area falls within both the approved BCWF site boundary and the Solar Micrositing Area. It will host new solar arrays using tracking systems, a new BESS, a new collector substation, a new O&M building, a temporary laydown yard for construction, new access roads, perimeter fencing, the Existing Facility's current POI, approximately 600 feet of new 230-kV gen-tie line, and other associated project components.

The Solar Components located within this area will add approximately 125 MW AC generating capacity on a total of up to 1,445 acres that would be fenced within the approved BCWF site boundary.[2] All Solar Components will be set back at least 520 feet from the existing wind turbines per PGE requirements.

1.3 Background and Procedural History

The Council originally issued a Site Certificate to Orion Sherman County Wind Farm LLC, a wholly owned subsidiary of Orion Energy LLC for the BCWF, effective June 30, 2006.[3] The BCWF, as originally approved, consisted of up to 225 wind turbines with an aggregate nameplate generating capacity of 337.5 MW of electricity or 150 wind turbines with an aggregate nameplate generating capacity of 450 MW and supporting facilities.

The Site Certificate has been amended three times as described below:

- The Council issued Amendment 1 to the Site Certificate on November 3, 2006, which approved a transfer of the Site Certificate from Orion to PGE.[4]
- The Council issued Amendment 2 to the Site Certificate on May 10, 2007, to accommodate new access roads and collector line segments, to increase the temporary area of

[2] Value provided reflects permanent disturbance. Permanent disturbance includes areas and infrastructure (trackers, inverters, internal roads, buildings, stormwater basins, and parking) inside the perimeter fence for the Northern Solar Area.
[3] Site Certificate for the Biglow Wind Facility (June 2006). Available at: https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/BCW_site_certificate_063006.pdf
[4] First Amended Site Certificate for the Biglow Canyon Wind Farm (November 2006). Available at: https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/BCW_final_order_amend_1_110306.pdf.

construction disturbance, to modify one micrositing corridor and to revise the requirements of several site certificate conditions.[5]

- The Council issued Amendment 3 to the Site Certificate on October 31, 2008, to increase total length of collector lines (up to 106 miles), authorize multiple structures within a 5-acre O&M facility, increase the total length of new access roads (to 44 miles), increase area of construction disturbance and length of temporary crane paths, and increase the area within the BCWF site boundary to accommodate Phase 2 construction layout.[6]

There have been six Change Requests or Amendment Determination Requests for the BCWF.

- Change Request Determination 1 – June 4, 2007: Request to modify access road and extend crane path. Modifications of the access road were determined to improve compatibility of the facility with underlying farm use and reduce the area of the facility's footprint impact. Site certificate amendment proceeding was deemed unnecessary and approval for the requested modifications was granted.
- Change Request Determination 2 – June 27, 2007: Request to eliminate portion of approved, but not yet constructed access road and construct a new temporary crane path. Site certificate amendment proceeding was deemed unnecessary and approval for the requested modifications was granted.
- Change Request Determination 3 – July 21, 2008: Request to modify three micrositing areas to accommodate three turbines outside of currently approved corridors. Site certificate amendment proceeding was deemed unnecessary and approval for the requested modifications were granted.
- Change Request Determination 4 – July 21, 2008: Request to construct additional buildings within the approved 5-acre footprint of the O&M facility. Site certificate amendment proceeding was deemed unnecessary and approval for the requested modifications was granted.
- Change Request Determination 5 – March 12, 2009: Request minor modifications to the approved facility that included changes to the routing for collector lines and adjustment to turbine access roads. Site certificate amendment proceeding was deemed unnecessary and approval for the requested modifications was granted.
- Change Request Determination 6 – January 12, 2017: Request construction of an additional storage structure of approximately 3,600 square feet as part of the approved O&M site. Site

[5] Second Amended Site Certificate for the Biglow Canyon Wind Farm (May 2007). Available at: https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/BCW_final_order_amend_2_051007.pdf.
[6] Third Amended Site Certificate for the Biglow Canyon Wind Farm (October 2008) Available at: https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/BCW_site_certificate_amend_3_103108.pdf.

certificate amendment proceeding was deemed unnecessary and approval for the requested modifications was granted.

- Amendment Determination Request 7 – March 14, 2019: Request to transition crane pads from a temporary disturbance to a permanent disturbance. Site certificate amendment proceeding was deemed unnecessary after receiving additional information.

2.0 Amendment Required under OAR 345-027-0350 and Review Process under OAR 345-027-0351

OAR 345-027-0350 – Changes Requiring an Amendment

Except for changes allowed under OAR 345-027-0353, an amendment to a site certificate is required to:

(1) Transfer ownership of the facility or the certificate holder as described in OAR 345-027-0400;

(2) Apply later-adopted law(s) as described in OAR 345-027-0390;

(3) Extend the construction beginning or completion deadline as described in OAR 345-027-0385;

(4) Design, construct or operate a facility in a manner different from the description in the site certificate, if the proposed change:

(a) Could result in a significant adverse impact that the Council has not addressed in an earlier order and the impact affects a resource or interest protected by an applicable law or Council standard;

(b) Could impair the certificate holder's ability to comply with a site certificate condition; or

(c) Could require a new condition or a change to a condition in the site certificate.

The proposed modifications to the BCWF require an amendment under Oregon Administrative Rules (OAR) 345-027-0350 (3), (4)(a) and (c). The Certificate Holder requests that ODOE process RFA 4 as a Type A amendment. Pursuant to OAR 345-027-0351(2), the Type A review process consists of rules OAR 345-027-0359, OAR 345-027-0360, OAR 345-027-0363, OAR 345-027-0365, OAR 345-027-0367, OAR 345-027-0371, and OAR 345-027-0375.

The requirements of OAR 345-027-0360 are addressed in the following sections and document attachments.

3.0 Certificate Holder Information – OAR 345-027-0360(1)(a)

OAR 345-027-0360 Preliminary Request for Amendment

(1) To request an amendment to the site certificate required by OAR 345-027-0050(3) or (4), the certificate holder must submit a written preliminary request for amendment to the Department that includes the following:

(a) The name of the facility, the name and mailing address of the certificate holder, and the name, mailing address, email address and phone number of the individual responsible for submitting the request;

3.1 Name of the Facility

The name of the facility is Biglow Canyon Wind Farm, and the Certificate Holder is Portland General Electric Company.

3.2 Name and Mailing Address of the Certificate Holder

Portland General Electric Company
121 SW Salmon Street, 3WTC0403
Portland, OR 97204

3.3 Name and Mailing Address of the Individuals Responsible for Submitting the Request

Chris Bozzini
Director Environmental Services
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503-464-7853
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3.4 Participating Entities

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4.0 Detailed Description of the Proposed Change – OAR 345-027-0360(1)(b)

OAR 345-027-0360 Preliminary Request for Amendment

(1) To request an amendment to the site certificate required by OAR 345-027-0350(3) or (4), the certificate holder shall submit a written preliminary request for amendment to the Department that includes the following:

*****

(b) A detailed description of the proposed change, including:

The Certificate Holder proposes to add the Solar Components to the BCWF as part of RFA 4. Table 1 provides a summary of the proposed changes, and a more detailed description of the changes follows below the table. Section 4.1 provides a detailed project description of the facility components, structures, systems, and related or supporting facilities included with RFA 4.

Table 1. Approved and Proposed Facility Components

Facility Component	Approved Facility[1]	Proposed Modifications[2]
Site Boundary	25,000 acres	The Solar Micrositing Area is entirely within the approved BCWF site boundary
Solar Micrositing Area	0 acres	1,924 acres, within the approved BCWF site boundary
Solar Photovoltaic Modules	None	264,836 modules total
Solar Inverter (quantity)	None	33 total
Solar Step-up Transformers (quantity)	None	33 total
Underground 34.5-kV collector cable	106 Miles	52 miles[3]
Aboveground 34.5-kV electrical line	Combined total of 15 miles	None
Substation	Biglow Canyon Substation	One new collector substation (Solar Area)
Battery energy storage system (BESS)	None	500 megawatt-hours total energy storage capacity in up to 153 battery storage units
BESS inverters	None	Up to 153 (integrated into battery enclosures)

Facility Component	Approved Facility[1]	Proposed Modifications[2]
BESS transformers	None	39
Access Roads	New Roads: 44 miles Existing Road Improvements: 0.7 mile to provide an all-weather surface, and in some cases, widening the roads to accommodate construction vehicles.	New Roads: 10.5 miles, limited to gravel roads inside the perimeter fence and array field. Existing Road Improvements: None planned. Any road improvements will be determined based on condition at the time of construction. Evaluation of current road conditions have indicated that existing roads are of sufficient quality and width to support construction and operation activities for the proposed Solar Components. If improvements are required, they would likely be in the form of road widening and/or improving the surface condition.
Operations and Maintenance (O&M) Building	Authorization of multiple structures within the 5-acre O&M facility, limiting the combined square footage of structures to 17,500 square feet.	One new O&M location on up to approximately 3.5 acres, including a total of five storage containers and one temperature-controlled modular building.
Temporary Construction Areas (Staging, Laydown, Parking, etc.)	16 miles of temporary crane paths	One temporary laydown area (approximately 9 acres)
Temporary and Permanent Impacts	Temporary: 497 acres Permanent: up to 178 acres	Temporary: 21 acres Permanent: 1,445 acres[4]

1. All values for the approved BCWF were approved in the Final Order on RFA 3 for the Biglow Canyon Wind Farm unless individually specified otherwise.

2. The Proposed Modifications (Solar Micrositing Area) design assumptions represented are intended to establish the maximum facility footprint and environmental impacts that will allow for flexibility in final selection, design specifications, and equipment layout.

3. Length of underground collector line between the transformers and proposed collector substation.

4. See Section 4.4.3 below.

1. **Add maximum peak generating capacity from the photovoltaic solar energy generation and for the total BCWF.** As part of integrating solar energy generation into the BCWF, the Certificate Holder proposes to add up to 125 MW to the approved nameplate 450-MW wind energy generation facility, for a total amended maximum generating capacity of combined solar and wind of up to 575 MW.
2. **Amend BCWF description to include Solar Components and define Solar Micrositing Area.** The Certificate Holder proposes to add up to 125 MW AC generating capacity from solar components and up to 500 megawatt-hours (MWh) in battery storage capacity, along with new related or supporting facilities, to the approved BCWF facility, located within the

defined Solar Micrositing Area. The Solar Micrositing Area is approximately 1,924 acres, within the approved BCWF site boundary. All temporary and permanent impacts from the proposed modifications in RFA 4 will be limited to the Solar Micrositing Area (i.e., Solar Micrositing Area/RFA 4 Site Boundary).

The Certificate Holder proposes to add one BESS capable of storing up to 500 MWh combined, for the purpose of improving dispatchability of the wind and solar power generated. The Certificate Holder proposes one AC-coupled BESS facilities adjacent to the proposed collector substation.

All areas within the Solar Micrositing Area/RFA 4 Site Boundary have been surveyed for biological and cultural resources. Section 4.4 provides a description of the anticipated worst-case scenario impacts associated with RFA 4.

3. **Make amendments to Site Certificate conditions**. The Certificate Holder proposes to amend the existing Site Certificate Conditions as described below in Section 6.0 and proposed in redline on the Fourth Amended Site Certificate (Attachment 1). The proposed edits provide more clarity regarding responsibility, timing, and implementation for compliance.

4.1 Project Description

The description of the proposed amended BCWF is included as required to meet the submittal requirements of OAR 345-021-0010(1)(b) paragraphs (A) through (F). OAR 345 Division 22 does not provide an approval standard specific to Exhibit B.

Note that the proposed components in RFA 4 are representative and technology advancements may alter their given specifications; however, these potential alterations are not anticipated to create an impact that has not already been addressed, mitigated through existing Site Certificate Conditions, or authorized by the Council with approval of RFA 4.

4.1.1 Overview of Amended Facility

As currently approved, the Existing Facility is an electrical generation facility capable of generating up to 450 MW of electrical power on 25,000 acres in Sherman County, Oregon. The Existing Facility consists of 217 operating wind turbines, operating up to 450 MW.

In RFA 4, the Certificate Holder proposes to amend the Site Certificate to include within the approved BCWF site boundary up to 125 MW AC of nominal and average generating capacity as defined in Oregon Revised Statutes (ORS) 469.300(4)(c) of solar energy generation and two BESS with the capability of storing up to 500 MWh.

The amended BCWF will generate electricity using the existing wind turbines and the new solar modules wired in series and in parallel to form an array, which in turn is connected to electrical infrastructure. Additionally, BESS will be included for the purpose of improving dispatchability of the wind and solar power generated. The Solar Micrositing Area will connect to the grid via the existing Biglow Canyon Substation. The Solar Micrositing Area will have one new collector

substation and transmission line infrastructure, which will then connect to the existing Biglow Canyon Substation. The electrical energy will be sent to the existing Biglow Canyon Substation through the addition of a 230-kV gen-tie transmission line (approximately 600 feet long). These components are all described in greater detail in Section 4.1.2.

This RFA 4 demonstrates that the BCWF, as amended, will be designed, constructed, and operated consistent with the relevant Council siting criteria and standards.

4.1.1.1 Definition of Solar Micrositing Area

The current approved BCWF site boundary is approximately 25,000 acres, which encompasses all existing, approved BCWF components. The Certificate Holder proposes to modify the use of approximately 1,924 acres within the approved BCWF site boundary (Figure 3) to accommodate the Solar Components. The 1,924 acres in the approved BCWF site boundary comprise the Solar Micrositing Area/RFA 4 Site Boundary within which construction of the Solar Components may occur.[7]

The Solar Micrositing Area provides a conservative estimate of the maximum area needed for development, micrositing, and temporary disturbances during construction, rather than the anticipated disturbance footprint.

4.1.1.2 Defined Study Areas for RFA 4

Consistent with OAR 345-027-0360(3), ODOE concurred[8] with the Certificate Holder's use of a defined portion of the approved BCWF site boundary (i.e., Solar Micrositing Area/RFA 4 Site Boundary) shown on Figure 3 to establish study area boundaries for RFA 4 under OAR 345-001-0010(35) and the boundary to develop the property owner list and map under OAR 345-027-0360(1)(f) for RFA 4. ODOE concurred with excluding the remaining BCWF site boundary that does not overlap with the defined area shown in Figure 3 from analysis in RFA 4 because no changes are proposed to any BCWF components in the remaining BCWF site boundary as part of RFA 4. Therefore, this defined area shown on Figure 3 is referred to for the remainder of RFA 4, including throughout the various exhibits in Attachment 4, as the "Solar Micrositing Area" or "RFA 4 Site Boundary." The RFA 4 Site Boundary reflects the Solar Micrositing Area, and all study areas within the meaning of ORS 345-001-0010(35) are measured from the RFA 4 Site Boundary.

4.1.1.3 Site Plan and General Arrangement

The layout for the amended BCWF with the general arrangement of buildings, equipment, and structures is shown on Figure 2. As noted above, this layout is provided for analysis purposes; although the final design may differ from the preliminary site plan provided, the actual solar equipment and layout selected will not exceed the impacts analyzed.

[7] OAR 345-001-0010(25).
[8] Sarah Esterson, Senior Policy Advisor at ODOE, pers. comm., e-mail message, May 5, 2024.

4.1.2 Major Components, Structures, and Systems

Solar energy will be generated by using multiple arrays of solar panels connected to electrical infrastructure. The term "array" refers to solar panels wired in series and in parallel. Solar panels generate electricity by means of a PV effect, whereby the materials in the panels absorb the sun's energy in the form of photons and release electrons. The capture of these free electrons produces an electrical current that can be collected and supplied to the electrical power grid. The solar panels, known in the industry as modules, will be installed to form module blocks.

The major components of the proposed solar energy generation system include the solar modules, racking systems, posts/piles, and related electrical equipment (i.e., inverters and transformers). These components are combined to form a solar array. The layout of the solar array can vary depending on project size, technology, topography, and other constraints. Therefore, PGE seeks to permit a range of technology to preserve design flexibility. The solar modules and associated equipment, as well as the precise layout of the solar array and related or supporting facilities, have not yet been finalized. During final design, PGE will consider all solar technologies available to ensure the most efficient and productive solar array layout. Although changes in the exact layout and technology could occur, the actual solar array equipment and layout selected will not exceed the impacts analyzed in RFA 4. Because technology is changing rapidly, this RFA 4 analyzes impacts associated with the largest anticipated footprint, and the actual solar equipment and layout selected will not exceed the impacts analyzed.

As described in Section 1.2 above, the Solar Micrositing Area may contain one or more separately fenced areas. The maximum solar array fence line area depicted for the Solar Area includes the solar energy generation system components (i.e., modules, inverters, transformers, tracking systems, posts, underground collector lines, and other associated equipment), BESS components, O&M building, substation, and temporary laydown area (see Figure 2). The area inside the solar fence line is considered permanent impact (see Section 4.4). The substrate on the ground inside the solar array fence line will be vegetated, or a mix of gravel where needed for maintenance and access roads or where gravel already exists.

The Solar Components as outlined in this RFA 4 are expected to be constructed over a period of approximately 17 to 19 months (see Section 4.1.5).

4.1.2.1 Solar Modules and Racking

Solar modules use mono- or poly-crystalline cells to generate electricity by converting sunlight into direct current (DC) electrical energy. The electrical energy generation from one module varies by module size and the number of cells per module. As technology evolves, final module specification can be in flux until late in the design and development process. The modules used in the current preliminary site design each have a nameplate rating of 590 watts (W) and measure 2.287 meters by 1.134 meters. The solar modules consist of N-type monocrystalline solar cells, an antireflective coating, a metal frame, and factory installed wire connectors. The modules will be connected in series to form rows or strings. The rows of strings are then collected via combiners, cables, and switchboards. The configuration of multiple rows (an array) can vary depending on the module

technology, topography, spacing, mounting equipment, and other design criteria, which are subject to change during detailed design by the engineering, procurement, and construction (EPC) contractor. The strings of panels will be mounted on single-axis tracking systems described below and are expected to be separated by approximately 25 feet of open space that will be either graveled (e.g., for access roads) or revegetated. The exact spacing between strings of panels will depend on the racking configuration and manufacturer's specifications, which will be determined during detailed design.

Figure 2 depicts the solar layout developed for purposes of analyzing impacts, using approximately 264,836 modules arranged in one-, two-, or three-string racks and 10,186 strings. The actual number of modules and their electrical configuration will vary depending on the module technology, energy output, spacing, mounting equipment, phase of the Solar Components, and other design criteria, which are subject to change during detailed design. The impact analysis throughout RFA 4 assumes all areas within the solar fence line for the Solar Area will be permanently impacted. See Section 4.4.3 for disturbance calculations.

4.1.2.2 Racking Systems

Strings of solar modules are expected to be mounted on single-axis tracker systems for all areas where panels are proposed as part of RFA 4 (see Figure 2). The single-axis tracker system optimizes electricity production by rotating the solar modules to follow the path of the sun throughout the day.

The length of each single-axis tracker string may vary by topography and the number of modules that the tracker can hold. The actual number of tracker systems and modules will depend on the racking system selected. The depicted layout in Figure 2 assumes 26 modules per string and 104 modules per rack. The drive unit for the tracking system can control a single row or multiple rows of modules through a series of mechanical linkages and gearboxes. As the solar modules tilt throughout the day, the height of their top edges will shift accordingly; due to varied terrain and equipment selection, the typical panel top edge height is expected to be 7.5 to 10 feet above the ground at maximum vertical rotation, with a maximum of 15 feet. Each set of modules is expected to be mounted approximately 5 feet off the ground on a single-axis tracker that rotates 60 degrees to the east and west. The tracker system and associated posts are expected to be specifically designed to withstand the wind, snow, and seismic loads anticipated at the site.

4.1.2.3 Foundations

Each single-axis tracking string will be supported by multiple steel posts, which could be hollow steel sections, screw piles, or pile-type posts. Post depth could vary depending on soil conditions, but the posts are typically installed 7 to 15 feet below the surface and extend approximately 5 feet above grade. Posts at the end of tracker rows (exterior) are usually installed to greater depth to withstand inclement weather including high wind conditions. In some soil conditions, concrete grouting may be used as backfill, as required. For the purposes of RFA 4, PGE assumes that approximately 32,621 posts will be installed for the single-axis tracker system and that all of the posts may require pre-drilling and/or concrete grouting as backfill. The actual number of posts and

foundation installation method may vary depending on the final tracker system, ground coverage ratio, topography, height of the solar modules, and site-specific geological conditions. Post locations will be determined during detailed design of the tracker system and future geotechnical investigations.

4.1.2.4 Cabling

The solar modules produce DC electrical current. Cables will collect and aggregate the DC before it is converted to AC by the inverters and sent to the proposed collector substation. As currently designed for RFA 4, the DC cables will connect to inverters via a centralized trunk bus system.

Using trunk bus technology simplifies wiring across the arrays and does not require combiner boxes, substituting an aboveground aluminum trunk system that combines the functionality of cable assemblies and combiner boxes, fusing into one system. If harnesses are used, the amount of cabling will be similar to the amount of cabling used with combiner box technology, but the cables would be above ground, attached in parallel to the panel racking. The buried cables associated with the solar array will be located within the solar array fence line area and are included in the estimated total permanent impact associated with the solar array (i.e., no temporary impacts are calculated for buried cable inside the solar array fence line area).

4.1.2.5 Inverters

The solar modules will be arranged into blocks, with each block connecting via collector lines to a modular inverter enclosure. In order to be sent to the electrical grid, the DC electrical current collected from the solar modules must be converted into AC electrical current before connecting to the proposed collector substation. Inverters convert DC to AC in accordance with electrical regulatory requirements. Inverters employ several advanced control systems, switching algorithms, and ancillary services for both the input and output stages. Low-voltage cabling will link each solar module to inverters. Each solar inverter will be positioned on a concrete pad and includes an integrated step-up transformer. The combination of the inverters and transformers is sometimes referred to as a power conversion station (PCS). Figures 2.1 and 2.2 depict a solar site plan with 33 PCS to convert the DC from the modules to AC. The final number of inverters will vary depending on the actual generation output of the solar array.

The inverter specification will comply with the applicable requirements and standards of the National Electric Code and Institute of Electrical and Electronics Engineers standards.

4.1.2.6 Inverter Step-Up Transformers

The AC power from the inverters will be routed to inverter step-up (ISU) transformers integrated into the housing skid of the inverters. The ISU transformers will increase the output voltage from the inverter (typically 660 volts) to the collector substation feed voltage (34.5-kV AC). For the purposes of analysis, the site plan in Figure 2 shows 33 PCS. Each ISU transformer will contain approximately 700 gallons of mineral oil. From the step-up transformers, the AC electricity is aggregated via underground 34.5-kV cables to the underground collector lines (see Section 4.1.3 below).

One generator step-up (GSU) transformer is expected to be located at the proposed collector substation to step up power from 34.5 kV to 230 kV. See Section 4.1.3.2 for additional information on the collector substation.

4.1.3 Related or Supporting Facilities

Related or supporting facilities consist of underground 34.5-kV electrical collector lines; one proposed collector substation; 230-kV gen-tie line connections from the proposed collector substation to the existing Biglow Canyon Substation; one BESS; one O&M building including communication and supervisory control and data acquisition (SCADA) systems; access roads, perimeter fencing, and gates; and temporary construction areas. As noted earlier, PGE is requesting flexibility for the solar modules and various associated equipment. Therefore, the following descriptions are based on the best available information at this time.

4.1.3.1 Collector Lines

The ISU transformers will connect the generation output of the solar modules to the high-capacity 34.5-kV collector lines, the majority of which will be within the solar perimeter fencing. The collector lines will carry power to the proposed collector substation.

The collector lines will be buried to a minimum of 3 feet, with junction splice boxes positioned intermittently along the lines for maintenance access. In this maximum footprint layout for analysis, approximately 52 miles of 34.5-kV collector line will be installed underground between the ISU transformers and collector substation (Figure 2).

The majority of the underground collector lines will be installed inside the Solar Micrositing Area fence lines. For the purposes of calculating impacts, the Certificate Holder assumes a temporary impact corridor of up to 50 feet wide (25 feet wide on average) for trench installation for underground collector line segments that are outside of the solar fence lines. Temporary impacts from collector line construction will be restored and revegetated following construction in accordance with the Comprehensive Solar Revegetation and Soil Management Plan (Exhibit I, Attachment I-2). Section 4.4.3 presents the temporary and permanent impacts of the collector lines where they are outside of the solar fence lines.

4.1.3.2 Collector Substation

High-voltage (HV) equipment, including a step-up transformer, HV circuit breaker, HV current transformers and voltage transformers, a packaged control building for the HV breaker and transformer equipment, HV towers, structures, and HV cabling if underground or conductors if overhead. Energy generated by the Solar Components will be sent via the 34.5-kV collection systems to the proposed collector substation. The new substation will step up the energy from 34.5 kV to 230 kV and then interconnect with the existing Biglow Canyon Substation (Figure 2). The collector substation will be located next to the BESS. The collector substation is entirely within the fence lines and will result in permanent impacts. See Section 4.4.3 for disturbance calculations.

One GSU transformer is expected to be located at the proposed collector substation to step up power from 34.5 kV to 230 kV. Additional substation equipment may include a 34.5-kV switch, 34.5-kV feeder breakers, 230-kV breaker, 230-kV switch, surge arrestors, control enclosure, metering equipment, grounding, and associated control wiring. The height of specific pieces of equipment within the substation fence line will range between approximately 8 and 25 feet above the ground surface.

4.1.3.3 Battery Energy Storage System

The precise scope of the BESS will be determined by the contractor during detailed design prior to the start of construction and is dependent on several factors, including, but not limited to, the availability and cost-effectiveness of suitable systems. As stated earlier, all technology described is preliminary and, while final design may differ, impacts will not exceed those analyzed in this RFA 4.

The BESS will be designed with the capability of storing up to 500 MWh over a duration to be determined based on final design and technology (see below for a detailed description of the proposed BESS equipment). The components associated with 500 MWh of BESS will include 153 battery units with enclosure-integrated inverters and 39 transformers. The batteries and associated equipment would be periodically augmented as needed to maintain 500 MWh of energy storage capability over the life of the BESS (20 years), taking into account natural degradation of the batteries over time. New batteries will be added to the facility to maintain output as older batteries degrade, and the degraded batteries will remain in place until decommissioning. Typical augmentation periods are every 4 years following the Commercial Operation Date. The location for the augmentation will be identified during the engineering phase of the project so that there is minimal disturbance to its operation. Ground disturbances like grading will take place with the initial construction of the facility. Foundations and slabs will need to be designed and constructed at the time of augmentation to account for changes in battery technology and enclosure specifications such as weight and dimensions.

Figure 2 shows the enclosures, inverters, and transformers associated with the BESS. The impact analyses and modeling included throughout RFA 4 assesses the total number of BESS enclosures, inverters, and transformers associated with full augmentation.

PGE proposes to construct the BESS as a concentrated AC-coupled BESS yard(see Figure 2). The systems will use a series of modular enclosures. Each enclosure will be placed on a concrete slab-on-grade foundation, and the BESS yard area is expected to be surfaced with stone aggregate. Each enclosure will be approximately 28 feet 11 inches in length, 5 feet 5 inches in width, and 10 feet in height. The enclosures are rated for outdoor environments and holds the batteries and a battery management system. The BESS includes a fire prevention system and cooling units within the enclosure. See Section 4.1.4 below and Exhibit V for fire prevention and control methods.

Figure 2 shows that the enclosures and associated components are grouped within the fence lines, adjacent to the collector substation. The total fenced area for the BESS yards is approximately 5 acres, which is considered permanent disturbance. See Section 4.4.3 for temporary and permanent disturbance calculations.

Battery Type – Lithium-ion Batteries

Currently, lithium-ion (Li-ion) batteries are the most common type of utility-scale BESS technology, although other technologies are used and are being developed. Li-ion batteries are a type of rechargeable battery where lithium ions, suspended in an electrolyte, move from negative to positive electrodes and back when recharging. A variety of chemistries fall under the "Li-ion" term, each with varying performance, cost, and safety characteristics (Energy Storage Association 2022). Li-ion batteries experience degradation of performance over their useful lifespan, which depends on several factors including battery technology, rate/number of charge and discharge cycles, and temperature. Li-ion batteries typically have an expected useful life of 20 years. Li-ion batteries are generally used in utility-scale applications when rapid, short-term (minute) deployments of power are needed. For example, Li-ion batteries can smooth the fluctuating generation from solar arrays, which can vary based on time of day and cloud cover, to deliver consistent and predictable power to the grid when needed.

Li-ion battery systems are modular systems in which each module contains multiple smaller battery cells. The cells are the primary containment for the gel or liquid electrolyte materials. The module containing the cells is relatively small, generally about the size of a desktop computer processer, and serves as leak-proof secondary containment. The cells are contained within a module, which is collected in a pack, and then wired into a string, and finally into the full modular unit. The quantities per modular unit could change based on the most current model procured for the Solar Components, but the general framework is typical for utility-scale Li-ion systems. Again, the BESS will be designed with the capability of storing up to 500 MWh over a duration to be determined based on final design and technology.

Battery Energy Storage System Equipment

The BESS design will include, but not be limited to, the following elements:

- BESS equipment, including batteries and racks or enclosures, inverters, isolation transformers, and switchboards;
- Balance of plant equipment, which may include medium-voltage and low-voltage electrical systems, HVAC (heating, ventilation, and air conditioning) or liquid cooling systems, building auxiliary electrical systems, and network/SCADA systems;
- Cooling system, which may include a separate chiller plant integrated into a purpose-built enclosure with the battery racks, chillers, pumps, and heat exchangers; and

The battery enclosures will be placed on slab-on-grade concrete foundations. Each enclosure holds the batteries, a battery management system, and a fire prevention system. Cooling units will be placed either on top of the enclosures or along the side. By connecting multiple enclosures, the BESS can be scaled to the desired capacity during detailed design by the EPC contractor.

The BESS will include up to153 inverters to convert DC power from each BESS to AC power. Additionally, the BESS will include 39 transformers to increase the output voltage from the BESS

inverters (typically 660 volts) to the substation feed voltage (34.5-kV AC). Both the inverters and transformers for the BESS are anticipated to also be approximately 8 to 10 feet in height.

Battery Energy Storage System Operations and Maintenance

The batteries and other materials for the BESS will be manufactured off-site and transported to the Solar Micrositing Area by truck. As applicable, defective or decommissioned parts will be disposed of or recycled in compliance with 49 Code of Federal Regulations (CFR) 173 Subpart E, which regulates the transportation of batteries.

The O&M activities typically consist of minimal procedures that do not require tampering with the battery cell components. For the purposes of analysis, it is assumed the Li-ion battery system will require augmentation of the batteries throughout its 20-year life.

The BESS will be stored in completely contained, leak-proof modules, which will be inspected monthly according to the manufacturer's recommendations.

4.1.3.4 Operations and Maintenance Building

One new O&M building is proposed and is shown in Figure 2. The O&M building will be a steel building and/or prefabricated structure and will include adjacent storage enclosures and parking areas. It will consist of one 60x12-foot office structure with electricity, internet, and water facilities. There will also be space for parking, service staging zone and clearance area, three 40x10-foot storage enclosures for housing spare parts and maintenance equipment, and one 40x15-foot control building inside the collector substation.

Potable water for the O&M building will be provided by purchased bottled water during facility operation. The sanitary sewer will be collected and treated by a new sanitary septic system. A septic system permit would be obtained from the County Public Health Department, which issues permits for septic systems in Sherman County.

4.1.3.5 Communication and SCADA System

A communication system consisting of fiber optic and copper communication lines will connect the solar area, BESS, and substation to the SCADA control rooms and to the internet service provider adhering to compliance requirements in place. Controls for the PV and BESS facilities will be integrated with those existing control facilities supporting the BCWF.

These communication lines will be buried or set overhead within a cable management system. Where buried, the communication lines are placed above the collector lines in the same trench. This communication system allows each solar PCS, BESS, and the substation to be monitored by a SCADA system, in the control rooms or PGE Portland offices. This system monitors these components for variables such as meteorological conditions, critical operating parameters, and power output. The solar array is controlled and monitored via the SCADA system, and can be controlled remotely. SCADA software is tuned specifically to the needs of each project by the SCADA integrator or a third-party SCADA vendor. This system will be monitored 24 hours per day, 7 days per week.

4.1.3.6 Internal Access Roads, Perimeter Fencing, and Gates

The Solar Components will use existing access roads to the extent practicable. The primary route for construction-related traffic will be Interstate 84 to south on U.S. Highway 97 to Wasco, southeast on Oregon Route 206, east on either Klondike Road or the Old Wasco Heppner Highway, and then onto various County roads. The secondary route for strictly construction-related commuter traffic will be I-84 to south on Scott Canyon Road to either Herin Lane or Medler Lane; this route is not suitable for oversize/overweight traffic. Once constructed, the Solar Micrositing Area will include new internal access roads. Approximately 10.5 miles of new access roads are expected to be constructed within the solar perimeter fencing to access infrastructure (see Figure 2). Existing roads outside the Solar Micrositing Area are not anticipated to require improvements or alterations.

All newly constructed roads within the Solar Micrositing Area will be graveled to meet load requirements for all equipment. These internal access roads are expected to be approximately 20 feet in width.

The locations of specific access points and gates will depend on the final configuration of the solar areas and related infrastructure. The perimeter fencing will have five lockable vehicle access gates. Additional gates may be included for emergency exits or for removal of wildlife. Chain-link perimeter fencing, up to 8 feet in height, will enclose the Solar Area as shown on Figure 2. The top of the fencing for the solar areas, BESS, and proposed substation will include one foot of razor or barbed wire in the total 8-foot height. The length of proposed fencing will total approximately 14.3 miles of fence.

4.1.3.7 Temporary Construction Area

During construction, one 8.7-acre temporary construction area (laydown area) within the perimeter fencing will be used to support construction, store supplies and equipment, and facilitate the delivery and assembly of materials and equipment (Figure 2). Depending on the pre-existing ground surface conditions, the construction area will consist of either a crushed gravel surface that will be removed following construction, crushed gravel surface that will remain following construction because that was the pre-existing surface condition, or vegetation that is left in place for which the need to revegetate would be evaluated following construction. Additional temporary construction areas may be used as determined by the construction contractor, but these would be within the solar areas considered permanent disturbance; therefore, maximum impact is evaluated in RFA 4.

4.1.4 Other Systems and Information

4.1.4.1 Fuel and Chemical Storage

The Solar Components will not require fuel or chemicals for the generation of electricity. During construction, small quantities of a few hazardous materials may be used or stored in the temporary construction yards. Such materials may include herbicides, insecticides, paint, cleaners, or solvents. None will be present in substantial, reportable quantities, and all materials will be handled in

accordance with state and federal standards. When not in use, these would be stored in a secure location within the temporary construction yards.

Fuels would be the only hazardous material that may be stored in substantial quantities on-site during construction. The Certificate Holder anticipates that up to 3,000 gallons of diesel fuel may be kept on-site for fueling of construction equipment. The diesel fuel will be stored in three 1,000-gallon temporary, aboveground tanks total near the main laydown area, typically near the substation and O&M building areas (two diesel and one gasoline), within an area that provides for secondary containment. Secondary containment and refueling procedures for on-site fuel storage will follow a Spill Prevention, Control, and Countermeasures (SPCC) Plan. Secondary containment will be compliant with requirements in 40 CFR §112.7(c), which requires secondary containment for all aboveground, buried, and partially buried containers. Fuels will be delivered to the temporary construction yards by a licensed specialized tanker vehicle. The fuel tanks are expected to be filled once a week.

There will be no substantial quantities of lubricating oils, hydraulic fluid for construction equipment, or other hazardous materials maintained on-site during construction. Lubricating oil or hydraulic fluids for construction equipment will be brought in on an as-needed basis for equipment maintenance by a licensed contractor using a specialized vehicle, and waste oils removed by the same maintenance contractor. Cooling oils for the transformers will similarly arrive on an as-needed basis and transferred into the receiving components, such that none would be stored on-site. Potentially hazardous substances will not be permanently present within the construction areas in quantities that exceed Oregon State Fire Marshal Reportable Quantities (see Exhibit G).[9]

During operations, equipment including the substation GSU transformer and ISU transformers will contain oil for cooling purposes.

The primary chemical storage during operations is expected to be the GSU transformer in the substation, which will use oil for cooling. The GSU transformer is expected to be a ground-mounted unit constructed on a concrete pad with secondary spill containment traps designed to minimize the possibility of accidental leakage on soil. The concrete catchment system is typically sized to contain the amount of oil inside the transformer plus deluge water and required freeboard. Transformers typically use mineral oil or seed oil that is considered nontoxic. Transformer coolant does not contain polychlorinated biphenyls or compounds listed as extremely hazardous by the U.S. Environmental Protection Agency (EPA). The small quantity and nontoxic nature of the oils combined with the fact that the transformer is expected to be included in secondary containment on a concrete pad will minimize risk effects of potential spills on soil. In the unlikely event of a spill, PGE will follow response measures outlined in its construction or operations SPCC Plan. As part of this plan, equipment containing oil or hazardous materials will be regularly monitored for leaks, and measures will be put in place if any are found to quickly control and remove spills. ISU

[9] "Reportable quantity" refers to the amount of hazardous substance that has to be released into the environment before the EPA requires notification of the release to the National Response Center pursuant to the Comprehensive Environmental Release, Compensation, and Liability Act, also known as Superfund. These numerical designations are listed under 49 Code of Federal Regulations 172.101 Appendix A, Table 1 and Table 2.

transformers will use smaller quantities of biodegradable oil and will not require secondary containment.

Small quantities of lubricants, degreasers, herbicides, or other chemicals may be stored in the proposed O&M building. Storage of these chemicals will follow label instructions. No underground storage tanks will be installed at the proposed O&M building. No extremely hazardous materials (as defined by 40 CFR 355) are anticipated to be produced, used, stored, transported, or disposed of for the Amended Facility during operations.

While not considered an extremely hazardous material, electrolyte solution will be contained within the BESS for the Li-ion battery technology. Li-ion battery systems are modular systems that contain multiple smaller battery cells. The cells are the primary containment for the gel or liquid electrolyte materials. The module containing the cells is relatively small, generally about the size of a desktop computer processer, and serves as leak-proof secondary containment. Modules are placed in anchored racks within the steel enclosures. The risk of leaking is very low because battery cells are hermetically sealed. Electrolyte can only escape (as vapor) in the unlikely case that a battery cell ruptures, though it would be contained in the BESS steel enclosure. Note that used Li-ion batteries can sometimes be considered hazardous waste by the EPA and will be disposed of according to the most current guidelines at end of life. See Section 4.1.3.3 for additional description and discussion of the BESS.

As further described in Exhibit G, PGE will prepare and maintain an SPCC Plan to outline preventative measures and practices to reduce the likelihood of an accidental spill, and to expedite the response to and remediation of a spill, should one occur.

4.1.4.2 Fire Prevention and Control

Exhibit V provides information on wildfire risks and prevention and describes the Certificate Holder's existing Wildfire Mitigation Plan. This section provides a summary of these topics.

Solar facilities do not pose a significant fire risk. The greatest risk of fire is during construction, when welding and metal cutting will take place, and vehicles and construction equipment may be used in areas of tall, dry grass. To prevent fires from occurring, the construction contractor will implement a number of systems and procedures. These will include requirements to conduct welding or metal cutting only in areas cleared of vegetation, and to keep emergency firefighting equipment on-site. Construction workers will keep vehicles on roads during the dry months of the year, unless offroad activities are required for emergency purposes, in which case fire precautions will be observed. Construction workers will be prohibited from parking vehicles in areas of tall, dry vegetation to prevent fires caused by contact with hot mufflers or catalytic converters. Fire extinguishers and shovels will be kept in all vehicles. In the event of a large fire, emergency responders will be dispatched.

Fire prevention specific to solar arrays is dependent on proper installation and maintenance of electrical equipment to prevent short-circuits and consequent sparking, and reduction in fuel to reduce the chance of fire spreading. Qualified staff will be employed to install and maintain electrical equipment. The solar array will have shielded electrical cabling, as required by applicable

code, to prevent electrical fires. All electrical equipment will meet National Electrical Code and Institute of Electrical and Electronics Engineers standards and will not pose a significant fire risk. With proper maintenance and safety checks, the electrical collection system and gen-tie line are unlikely to cause a fire. The substrate on the ground inside the solar array fence line will be gravel where needed for maintenance and access roads or where gravel already exists, and vegetation where gravel isn't needed or already present. Weeds will be managed in accordance with the weed management procedures described in the Comprehensive Solar Revegetation and Soil Management Plan (see Exhibit I, Attachment I-2). Additional fire prevention and response measures for the BCWF as a whole—including best management practices related to worker activities, maintenance of fire suppression equipment, and coordination with the local fire district—are described in Exhibit U.

The existing roads providing access to and throughout the Existing Facility, as well as new roads proposed within the Solar Micrositing Area, shall be sufficiently sized for emergency vehicle access in accordance with 2022 Oregon Fire Code requirements, including Section 503 and Appendix D - Fire Apparatus Access Roads. Specifically, the new roads proposed within the solar area fence lines will be 20 feet in width. The areas immediately around the O&M building, proposed substation, and BESS will be graveled, with no vegetation present. See Exhibit U for additional discussion of fire prevention measures and coordination with local emergency responders.

Smoke/fire detectors will be placed around the site and tied to the SCADA system and will contact local firefighting services. The proposed O&M building will have basic firefighting equipment for use on-site during maintenance activities, such as shovels, beaters, portable water for hand sprayers, fire extinguishers, and other equipment.

Battery Energy Storage System

The following paragraphs summarize the information pertinent to fire prevention and control for a BESS with Li-ion technology.

The chemicals used in Li-ion batteries are nontoxic but do present a flammability hazard. Li-ion batteries are susceptible to overheating and require cooling systems dedicated to each BESS enclosure, especially at the utility scale (LAZARD 2021). The gas released by an overheating Li-ion cell is mainly carbon dioxide. The electrolyte solution, usually consisting of ethylene or propylene, may also vaporize and vent if the cell overheats (Battery University 2022).

The Certificate Holder will implement the following fire prevention and control methods to minimize fire and safety risks for the Li-ion batteries proposed for the BESS:

- The batteries will be stored in completely contained, leak-proof modules.
- The Li-ion battery system will be kept in a temperature-controlled facility with individual battery modules isolated to prevent the spread of fire if it were to occur. The Underwriters Laboratories (UL) 9540A test reports and supplier recommendations show that the risk of fire propagation from one enclosure to another is very low.

- Ample working space will be provided around the BESS for maintenance and safety purposes.
- Twenty-four-hour monitoring of the BESS will be implemented and will include shutdown capabilities. Batteries will shut off if any issue with cooling is detected; under an idle state, they can remain without cooling until a service technician arrives.
- The feasibility and need for potential wind barriers will be assessed during preconstruction. The Certificate Holder will conduct a hazard mitigation analysis and plume analysis to determine how a fire/smoke plume might spread during a fire, then determine if a wind barrier is needed.
- Transportation of Li-ion batteries is subject to 49 CFR 173.185 – Department of Transportation Pipeline and Hazardous Material Administration. This regulation contains requirements for prevention of a dangerous evolution of heat, prevention of short circuits, prevention of damage to the terminals, and prevention of batteries coming into contact with other batteries or conductive materials. Adherence to the requirements and regulations, personnel training, safe interim storage, and segregation from other potential waste streams will minimize any public hazard related to transport, use, or disposal of batteries.
- Design of the BESS will be in accordance with applicable UL (UL 2023; specifically 1642, 1741, 1973, 9540A), National Electric Code, and National Fire Protection Association (specifically 855) standards, which require rigorous industry testing and certification related to fire safety and/or other regulatory requirements applicable to battery storage at the time of construction.
- Additionally, the Certificate Holder will employ the following design practices, as applicable to the available technology and design at time of construction:
    - Employment of an advanced and proven battery management system;
    - Qualification testing of battery systems in accordance with UL 9540A (Revision 4);
    - Installation of fire sensors, smoke and hydrogen and/or carbon monoxide detectors, alarms, emergency ventilation systems, cooling systems;
    - Employment of fire control panels with 24-hour battery backup;
    - Installation of doors that lock with restricted access to authorized personnel only;
    - Installation of thermal insulation sheets between each individual battery cell;
    - Implementation of locks and fencing to prevent entry of unauthorized personnel;
    - Installation of remote power disconnect switches; and
    - Clear and visible signs to identify remote power disconnect switches.

4.1.5 Construction Schedule

Construction is expected to begin in Q2 of 2026 and continue through Q4 of 2027 for a duration of approximately 17 to 19 months from mobilization to final completion. Additional engineering and geotechnical investigations may occur prior to issuance of the Amended Site Certificate. As defined in ORS 469.300(6), surveying and exploration activities (such as geotechnical investigations) are excluded from the definition of construction work. No other construction work is anticipated to begin prior to issuance of the Amended Site Certificate.

4.1.5.1 Construction Schedule Amendment Request

Existing Site Certificate Condition 11 requires that construction of the BCWF begin by June 30, 2009. PGE satisfied Condition 11 when it began construction on April 1, 2007. With RFA 4, the Certificate Holder proposes to expand the existing site boundary (i.e., Solar Micrositing Area/RFA 4 Site Boundary) and add Solar Components to the Existing Facility/BCWF. The Certificate Holder requests that, if the Council approves RFA 4, the construction commencement deadline be applied to the construction of the Solar Components. As is standard for initial construction commencement deadlines, the Certificate Holder requests 3 years from the effective date of the Fourth Amended Site Certificate, and a construction completion deadline 6 years from the effective date of the Fourth Amended Site Certificate to start and complete construction of the Solar Components.

4.2 Effect of Proposed Changes on the Facility – OAR 345-027-0360(1)(b)(A)

OAR 345-027-0360 Preliminary Request for Amendment

(1) To request an amendment to the site certificate required by OAR 345-027-0350(3) or (4), the certificate holder shall submit a written preliminary request for amendment to the Department that includes the following:

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(b) A detailed description of the proposed change, including:

(A) A description of how the proposed change affects the facility;

The BCWF, as approved, is a wind energy generation facility. RFA 4 proposes changes to accommodate a larger layout with increased capacity via solar energy and battery storage. This will allow the BCWF to respond to market needs, take advantage of available transmission capacity (namely, existing POI), and overcome the challenges posed by the intermittent nature of wind energy. The solar arrays will provide power to the same grid connection points and interconnect to an existing transmission line, which provides the opportunity for optimal utilization of power generation and transmission capacities. Adding solar to the BCWF will increase the maximum peak generating capacity for the Facility by up to 125 MW. This further supports Oregon's Clean Energy Targets bill (House Bill 2021[10]), which requires electricity providers to reduce the greenhouse gas

[10] https://olis.oregonlegislature.gov/liz/2021R1/Downloads/MeasureDocument/HB2021/Enrolled

emissions associated with electricity sold in Oregon to 100 percent below baseline emissions levels by 2040.

All Solar Components will be sited within the already-approved BCWF site boundary. No boundary expansion or modification is proposed. The areas proposed for development are consistent with land uses, topography, and habitat types already analyzed and approved under the current Site Certificate. Therefore, the proposed modifications do not alter the nature or scope of previously analyzed resource areas.

As detailed in the following sections and the attachments, the Certificate Holder can continue to comply with all Site Certificate Conditions previously adopted by the Council for the BCWF. Only minor edits to existing Site Certificate conditions may be required to reflect the addition of infrastructure (see Attachment 1). Ultimately, the proposed changes will maximize use of the latest technology to minimize impacts, increase reliability and customer value, and further support renewable energy production in the region, helping the state meet its clean energy goals.

4.2.1 Long-term Facility Maintenance Plan

Over the course of more than 15 years of operation at the Existing Facility, the Certificate Holder has encountered technical challenges that have offered valuable insights into both technical and procedural vulnerabilities and informed continuous improvement efforts. The Certificate Holder has implemented targeted improvements specific to the Existing Facility, including changes to internal management structure and personnel, a change in the turbine O&M provider with a newly negotiated contract to mitigate future technical challenges and better align with site-specific performance goals, and improved monitoring of contractor performance. Improved preventative maintenance, robust monitoring, and corrective action planning will be the result of these ongoing changes.

The specific types of technical challenges with the Existing Facility would be unlikely to occur with the Solar Components due to the difference in technology. Lessons learned from more than a decade of wind facility operations at BCWF are being directly integrated into the planning and management of the proposed Solar Components. Past challenges have informed the adoption of more robust preventative maintenance and corrective action protocols, improvements to vendor contracts to ensure the contracts use asset management and equipment health as the measure for vendor performance, stronger consequences for poor performance, and improved quality control and assurance oversight of vendors. All of these will be standard practice for the Solar Components infrastructure. Measures such as SCADA-integrated diagnostics, third-party commissioning, fire detection and suppression systems, and secondary containment features are being incorporated from the outset to reduce risk, support long-term reliability, and maintain full compliance with site certificate conditions.

The Certificate Holder has developed an O&M Plan Framework for the Solar Components that outlines the structure of operational responsibilities, long-term maintenance protocols, quality assurance processes, environmental compliance measures, and integration with emergency

response and monitoring systems (see Attachment 5). Prior to the start of operation, the Certificate Holder will develop an O&M Plan based on this framework to further detail the specific actions required to operate and maintain the Solar Components. Actions described in the O&M Plan Framework include:

- The integration of existing and new technical and site management plans into the solar facility O&M plan;
- Facility roles and responsibilities;
- Preventative maintenance and asset monitoring;
- Compliance, controls, and reporting;
- Emergency preparedness integration;
- Contractor and staff oversight;
- Design and equipment selection; and
- Long-term maintenance and operational continuity, including:
    - Personnel and quality assurance oversight,
    - Budget planning, and
    - Lifecycle management.

The final O&M Plan will be a living document that will be updated throughout the life of the Solar Components to ensure proactive and effective management of the site.

4.3 Applicable Laws and Council Rules – OAR 345-027-0360(1)(b)(B)

OAR 345-027-0360 Preliminary Request for Amendment

(1) To request an amendment to the site certificate required by OAR 345-027-0350(3) or (4), the certificate holder shall submit a written preliminary request for amendment to the Department that includes the following:

*****

(b) A detailed description of the proposed change, including:

(B) A description of how the proposed change affects those resources or interests protected by applicable laws and Council standards, and

The Certificate Holder has reviewed and considered current local, state, and federal law in developing the layout proposed with RFA 4. No laws were identified that would prohibit the proposed changes requested in RFA 4. Compliance with applicable laws is integrated into the existing and proposed modified Site Certificate Conditions, including conditions related to pre-construction biological and cultural surveys, preparation of an archaeological monitoring plan, the National Pollutant Discharge Elimination System (NPDES) 1200-C permit, and consultation with the

Oregon Department of Fish and Wildlife and Department of Geology and Mineral Industries, among others. The proposed changes do not alter the Certificate Holder's ability to comply with the Site Certificate Conditions for the BCWF except as noted in the exhibits (Attachment 4) and the proposed condition modifications and additions that address construction, operation, and retirement of the Solar Components (Attachment 1). Ultimately, although the amended BCWF may be operated in a different manner than previously approved by the Council as a result of RFA 4, substantial changes to the Third Amended Site Certificate are not necessary to incorporate and meet Council standards and other applicable laws. The exhibits provided in Attachment 4 further demonstrate how the proposed changes will continue to comply with Council standards and are consistent with the Council's previous findings for the BCWF.

4.4 Location of the Proposed Change – OAR 345-027-0360(1)(b)(C)

OAR 345-027-0360 Preliminary Request for Amendment

(1) To request an amendment to the site certificate required by OAR 345-027-0350(3) or (4), the certificate holder shall submit a written preliminary request for amendment to the Department that includes the following:

*****

(b) A detailed description of the proposed change, including:

(C) The specific location of the proposed change, and any updated maps and/or geospatial data layers relevant to the proposed change;

The description in Sections 4.4.1 through 4.4.3 below is included as required to meet the submittal requirements of OAR 345-021-0010(1)(c), paragraphs (A) through (C). OAR 345 Division 22 does not provide an approval standard specific to Exhibit C.

4.4.1 Facility Location

The Existing Facility is located within a site boundary comprising approximately 25,000 acres, approximately 4.5 miles northeast of the town of Wasco in Sherman County, Oregon (Figure 1).

4.4.2 Specific Location of Major and Supporting Facilities

The following figures show the specific location of the major and supporting facilities proposed with RFA 4.

- Figure 1 is a vicinity map showing the location of the Solar Micrositing Area/RFA 4 Site Boundary in relation to nearby cities and towns, county boundaries, public roads, and other geographic features.
- Figure 2 provides the preliminary site plan for RFA 4 and is the basis for the permanent and temporary disturbance calculations in Table 2.

- Figure 3 displays the proposed changes to the approved BCWF site boundary, which constitute the Solar Micrositing Area (RFA 4 Site Boundary), as well as the BCWF site boundary.
- Figure 4 shows the location of the Solar Micrositing Area/RFA 4 Site Boundary in relation to other energy generation facilities that are known to be permitted at the state or local level within 10 miles.

Updated geospatial data layers used to create the maps in RFA 4 will be provided to ODOE on request.

4.4.3 Permanent and Temporary Disturbance Areas

Table 2 provides a maximum impact scenario for permanent and temporary disturbances associated with RFA 4, as well as any assumptions used to calculate these impact amounts. The individual component disturbance areas (for solar areas, BESS, temporary construction area, etc.) were calculated using preliminary design data and represent the Certificate Holder's best estimate of preliminary impacts for each component. Because this analysis uses the largest anticipated footprint, the final equipment and layout selected will not exceed the impacts analyzed.

Table 2 presents the impact by disturbance type. However, some disturbance types may overlap by the nature of their development. Therefore, the last row in the table provides the disturbance area with any existing development overlap removed. For purposes of analysis, the Certificate Holder considered a total Solar Area that will occupy up to approximately 1,445 acres enclosed within the fenced area, using the proposed solar technology. This fenced area is considered permanently disturbed and includes all solar components (i.e., modules, inverters, transformers, tracking systems, posts, internal access roads, and other associated equipment). All other permanent impacts are listed as separate line items and include permanent impacts from the collector substation, BESS, and O&M building. The total acreage covered by Solar Components includes approximately 1,046 acres. Areas of temporary disturbance within the fenced area will then be used to locate the facility components. The remainder of the acreage within the fenced area includes undisturbed setbacks and avoidance areas. Any temporary disturbance impacts requiring restoration and revegetation will only occur outside of the perimeter fencing for the solar areas, BESS, and collector substation and include temporary impacts from the underground collector lines, laydown areas, installation of perimeter fencing, construction of the O&M building, gen-tie line, and use of any additional temporary construction areas. This layout represents the maximum scenario for purposes of analyzing land use and habitat impacts.

Table 2. Permanent and Temporary Disturbances in the Solar Micrositing Area

Disturbance Type	Permanent (Acres)	Temporary (Acres)
Solar Area [1]	1,445.0	9.6
Solar Area Gen-Tie Line (230 kV) [2]	<0.1	1.8
Solar Area Road Crossings[3]	0.3	0.8
Solar Area Underground Collector Lines[4]	-	315.2
Solar Area BESS[5]	5.0	-
Solar Area O&M Building[6]	0.01	0.04
Solar Area Laydown Area[7]	-	8.7
Solar Area Substation[8]	4.2	-
TOTAL	**1,445**	**21**

1. Permanent disturbance includes areas and infrastructure (trackers, inverters, internal roads, buildings, stormwater basins, and parking) inside the perimeter fence for the RFA4 Solar Area. Temporary disturbance is for laydown areas, collector lines, and fence line construction area. Assumes a 6-foot temporary disturbance corridor on the outer side of the fence, multiplied by the linear footage of fence for temporary workspace to install the fence. Assumes an approximate total of 14.3 miles feet of perimeter fence.
2. Overhead transmission line disturbance amounts include the poles. Assumes a 150-foot temporary disturbance corridor (final corridor pending design) plus 20x20-foot pulling/tensioning areas (temporary disturbance), and 2-foot-diameter permanent disturbance from the poles (steel monopoles). Assumes approximately 700-foot spans between poles.
3. Permanent disturbance for road crossings outside the solar area fenceline. Assumes a 16-foot road width, with additional 20-foot width temporary disturbance for construction.
4. Temporary disturbance includes a total of 52 miles of underground collector lines and a 50-foot-wide impact corridor.
5. Permanent disturbance includes the area of the BESS, which is within the solar area fenceline,
6. Permanent disturbance for parking area, three 40-foot storage containers for housing spare parts and maintenance equipment, one 40x15-foot control building inside the substation, and one 60x12-foot office structure with electricity, internet, water facilities. Temporary disturbance is for construction of the building and assumes a 25-foot temporary disturbance corridor located around the permanent disturbance footprint.
7. Temporary disturbance for the laydown area for construction. No permanent disturbance, the construction area will be reclaimed following construction. Additional temporary construction areas may be used as determined by the engineering, procurement, and construction (EPC) contractor, but these would be within the solar area fenceline and are already accounted for as permanent disturbance.
8. Permanent disturbance includes all areas for the proposed collector substation, which is within the Solar Area fenceline.

5.0 Division 21 Requirements – OAR 345-027-0360(1)(c)

OAR 345-027-0360 Preliminary Request for Amendment

(1) To request an amendment to the site certificate required by OAR 345-027-0350(3) or (4), the certificate holder shall submit a written preliminary request for amendment to the Department that includes the following:

*****

(c) References to any specific Division 21 information that may be required for the Department to make its findings;

The Certificate Holder has addressed applicable specific Division 21 information in response to Division 27 requirements and in exhibits included in Attachment 4. Exhibit labeling reflects the requirements of OAR 345-021-0010. However, in April 2025, the State of Oregon updated this OAR. The Certificate Holder submitted the majority of the BCWF pRFA prior to the OAR update, and the RFA does not reflect the changes in the OAR. Table 3 below outlines the updated OAR requirements and where the corresponding information can be found in the RFA. Not all exhibits apply to solar and BESS, so some are not included (see Table 3).[11]

Table 3. Crosswalk Between Current OARs and Biglow Canyon Wind Farm Final RFA

OAR[1]	Exhibit
OAR 345-021-0010(1)	Division 27 Sections 3.0-3.4 (Certificate Holder Information) and 5.1-5.2 (Other Participants and Affiliations), 4.1 (Project Description and Schedule), 4.4 (Location), 5.4 (Required Permits), 8.0 (Property Owners of Record) Exhibits CC (Applicable Rules), G (Materials Analysis)
OAR 345-022-0000 General Standard of Review	This Application
OAR 345-022-0010 Organizational Expertise	Division 27 Section 5.3 (Organizational Expertise)
OAR 345-022-0020 Structural Standard	Exhibit H (Geologic and Soil Stability)
OAR 345-022-0022 Soil Protection	Exhibit I (Soil Conditions)
OAR 345-022-0030 Land Use	Exhibit K (Land Use)
OAR 345-022-0040 Protected Areas	Exhibit L (Protected Areas)
OAR 345-022-0050 Retirement and Financial Assurance	Exhibits M (Financial Capability), X (Retirement)
OAR 345-022-0060 Fish and Wildlife Habitat	Exhibit P (Fish and Wildlife)
OAR 345-022-0070 Threatened and Endangered Species	Exhibit Q (T&E Species)
OAR 345-022-0080 Scenic Resources	Exhibit R (Scenic)
OAR 345-022-0090 Historic, Cultural and Archaeological Resources	Exhibit S (Historic, Cultural and Archaeological Resources)
OAR 345-022-0100 Recreation	Exhibit T (Recreation)
OAR 345-022-0110 Public Services	Exhibit U (Public Services)
OAR 345-022-0115 Wildfire Prevention and Risk Management	Exhibit V (Wildfire)
OAR 345-022-0120 Waste Minimization	Exhibit W (Waste Minimization)
OAR 345-022-0130 State and Local Laws and Regulations	Exhibits J (Wetlands), O (Water Requirements), Y (Noise)
OAR 345-024-0090 Siting Standards for Transmission Lines	Exhibits AA (EMF), DD (Specific Standards)
1. Updated April 2025; the Facility pRFA was submitted in February 2025.	

[11] Exhibits not applicable to RFA 4 are Exhibit N – Non-generating Facility Information, Exhibit Z – Cooling Towers, and Exhibit BB – Other Information.

Together, this document and the exhibits provide the necessary information for ODOE to make its findings, and based on those findings, that the Council can find that the BCWF, as proposed, continues to comply with the requirements of the Oregon Energy Facility Site Statutes, ORS 469.300 to 469.520.

5.1 Other Participants – OAR 345-021-0010(1)(a)(B)

PGE will rely on BIGL as the developer of the Solar Components, similar to how a certificate holder relies on an EPC contractor. The Project Developer will construct the Solar Components on behalf of PGE under a Build Transfer Agreement and will provide O&M services for the first 5 years of operations. Notwithstanding BIGL's role as the developer under the Build Transfer Agreement, PGE as the ultimate owner of the assets and the Certificate Holder will have oversight and control over the BCWF, as amended. BIGL is supporting PGE in the development and construction of the amended BCWF. PGE will be the owner of the assets associated with the amended BCWF. No other participants are anticipated at this time, with the exception of potential third-party permits that will be obtained by the construction firm for build-out of the Solar Components. These third-party permits include permits for construction materials, transporting materials to the site, and other building-related permits that are typically obtained immediately prior to construction activities. See Section 5.4.3 for all anticipated third-party permits.

5.2 Other Affiliations – OAR 345-021-0010(1)(a)(C) through (F)

PGE is a corporation and the information required by OAR 345-021-0010(1)(a)(C) is provided in Section 3.0. The information required by OAR 345-021-0010(1)(a)(D) through (F) is not applicable to PGE.

5.3 Organizational Expertise – OAR 345-021-0010(1)(d)

5.3.1 Portland General Electric

PGE is a fully integrated energy company based in Portland, Oregon, serving over 900,000 customers in 51 cities. PGE generates electricity from plants it owns, and purchases power on the wholesale market. PGE operates wholly and jointly owned hydroelectric, natural gas, wind, and solar generating plants. For over 130 years, PGE has been delivering energy to residents of the state of Oregon. PGE has significant experience in constructing, supervising the construction of, and operating generation projects.

The Council previously found that the Certificate Holder has the ability to design, construct, operate, and retire the BCWF, in compliance with all Council standards and conditions, as required by the Organizational Expertise standard.[12] The Certificate Holder provides the following to support findings of compliance with the ESFC Organizational Standard in OAR 345-022-0010.

[12] Biglow Canyon Wind Farm Final Order on Request for Amendment 3, p. 9 and 10 (October 2008).

The Certificate Holder currently owns and/or operates a combination of six natural gas facilities (2,102 MW), seven hydro-electric facilities (684 MW), four wind facilities (1,025 MW), and five small solar facilities (9 MW). Additionally, PGE has approximately 97 MW of BESS operational at three facilities (Coffee Creek, Constable, and Port Westward) and will have another 207.4 MW between six additional BESS that are expected to be operational between 2025 and 2026 (see Table 4 below). Since the Final Order on Amendment 3, PGE has successfully designed, constructed, and operated two additional natural gas plants, three wind farms, five small solar projects, and three BESS with an additional BESS currently under construction. PGE also has experience successfully retiring facilities as shown by the retirement of the Trojan Nuclear Plant and more recently the Boardman Coal Plant and the Salem Smart Power Center, which was a BESS facility.

Table 4. Portland General Electric Company's Generation Facilities

Project Name (Commercial Operation Date)	Technology	Maximum Generation Name Plate (MW)
Carty Generating Station Unit 1 (2016)	Natural Gas Combined-Cycle Combustion Turbine	503
Port Westward Generating Plant Unit 2 (2014)	Natural Gas Reciprocating Engines	225
Port Westward Generating Plant Unit 1 (2007)	Natural Gas Combined-Cycle Combustion Turbine	483
Beaver Generating Facility (1974, 1977)	Natural Gas and Distillate Oil Combined-Cycle Combustion Turbine	570
Beaver Unit 8 (2001)	Natural Gas Simple-Cycle Combustion Turbine	24.9
Coyote Springs Unit 1 (1995)	Natural Gas and Distillate Oil Combined-Cycle Combustion Turbine	296
Faraday (1907/1958)	Hydroelectric	50
North Fork (1958)	Hydroelectric	62
Oak Grove (1924)	Hydroelectric	51
River Mill (1911/1952)	Hydroelectric	21
Sullivan (1895)	Hydroelectric	17
Round Butte (1964)	Hydroelectric (jointly owned)	373
Pelton (1957)	Hydroelectric (jointly owned)	110
Wheatridge Renewable Energy Facility I (2018)[1]	Wind	100
Tucannon River Wind Farm (2014)	Wind	267
Biglow Canyon Wind Farm (2007, 2009, and 2010)	Wind (Phases I, II, and III)	450

Project Name (Commercial Operation Date)	Technology	Maximum Generation Name Plate (MW)
Clearwater Wind Energy Center (2024)	Wind	208
Portland Public Schools (2015)	Solar	9 (combined for these 5 facilities)
Baldock Solar Station (2012)	Solar	
Sunway 3 (2010)	Solar	
Sunway 2 (2009)	Solar	
Sunway 1 (2009)	Solar	
Coffee Creek (2024)	BESS	17
Constable (2024)	BESS	75
Port Westward BESS (2021)	BESS	5
Seaside (expected 2025)	BESS	200
IOC Battery (expected 2025)	BESS	2
Salem Smart Power Center (repower) (expected 2026)[13]	BESS	3.9
Three additional project less than 1 MW each	BESS	0.75/0.5/0.25
Retired, Decommissioned, and Demolished		
Boardman Coal Plant	Coal (jointly owned)	N/A
Trojan	Nuclear	N/A
Original Salem Smart Power Center	BESS	N/A

In the last 10 years PGE has been issued the following violations and citations for constructing or operating a facility, type of equipment, or process similar to the proposed facility. For each notice PGE responded promptly and immediately implemented corrective actions.

- On July 8, 2015, the EPA conducted a site inspection at the Beaver Generating Plant and identified deficiencies in spill prevention, control, and countermeasure compliance. On December 9, 2015, the signed Expedited Settlement Agreement and associated documentation was sent to the EPA. On December 11, the EPA notified PGE of their appreciation for the "forthright follow-up work, and quite significant effort PGE has been put forth to come into compliance." The financial penalty levied was $2,025. Corrective actions included permanent closure of unused tanks and piping in accordance with spill prevention, control, and countermeasure rules, in-service tanks were inspected and tested in accordance with American Petroleum Institute Standards 653 and 570, and plant procedures for inspecting and monitoring were modified. Although this violation was issued

[13] The Salem Smart Power Center was originally built as part of the Pacific Northwest Smart Grid Demonstration Project, a U.S. Department of Energy research effort. The Project ended in mid-2015 and PGE continued to operate the facility until its end of life. The original Salem Smart Power Center has been fully decommissioned and a new project will be in service approximately in 2026.

to a natural gas plant with an associated oil tank farm, it is included here because the Solar Components will fall under an SPCC plan.

- On February 15, 2016, a backhoe rolled into Lake Simtustus during a construction project at Pelton Park (there were no injuries). This incident was reported to both state and federal agencies by PGE on February 15, 2016, even though at the time no sheen was observed. A plan for removal of the backhoe was developed and the backhoe was removed on February 17, 2016; part of the removal plan included placement of oil containment booms around the work area. When the backhoe was removed, a sheen was observed. PGE was fined $1,600 for release of oil into waters of the State. Although construction of the Solar Components will not involve operating any equipment in proximity to water, this violation is listed here because it relates to construction.
- On April 15, 2019, a warning letter was issued by the Oregon Department of Environmental Quality (ODEQ) for nine missed pH samples required by Water Pollution Control Facilities (WPCF) permit No. 100189 for the Boardman Coal Plant and Carty Generating Station. The Certificate Holder identified the issue on February 8, 2019 and immediately self-reported the issue to ODEQ and implemented corrective actions in consultation with ODEQ. In the warning letter, ODEQ noted they did not intend to take enforcement action. Note that although this warning letter was not for a solar farm, it is listed here because the solar panel wash water disposal would be permitted through a general WPCF permit.
- On August 14, 2023, PGE received a pre-enforcement notice from ODEQ regarding oil and grease releases from the BCWF Phase 1 turbines. The pre-enforcement notice was the result of an inspection conducted by ODEQ on May 12, 2023, at the request of ODOE. PGE responded to ODEQ for the pre-enforcement notice on August 28, 2023, and documented that PGE has completed cleanup of affected soils including those specifically cited in the notice and outlined steps PGE would take to prevent and address future releases. On October 13, 2023, PGE provided a report to ODOE in the format required by OAR 345-029-0010(3) at ODOE's request. On April 12, 2024, PGE received an expedited enforcement offer from ODEQ, which PGE accepted and paid a fine of $2,400 for. PGE continues to work to address the failing components at the Phase 1 turbines which result in the oil and grease releases through implementation of a wind enhancement program to replace components and improved operational practices to address any releases that do occur while implementation of the wind enhancement program occurs.
- Per Conditions 37 and 81 of the BCWF site certificate, PGE continues to report incidents that occur at our facilities in accordance with guidance issued by ODOE on October 27, 2022. None of these incident reports have resulted in a violation or citation being issued to PGE; however, several of them have required PGE to implement corrective action plans to reduce the likelihood of recurrence. The incidents reported since the beginning of 2022 include a blade detachment, various broken fasteners, failed hatches, an open turbine door, and transformer failures. Corrective actions plans have been implemented to address these issues. PGE meets regularly with ODOE to ensure issues are adequately being addressed.

Despite the issues identified in the section above, the Existing Facility is currently operated in compliance with its respective Site Certificate Conditions and in a manner that protects public health and safety. Given the Certificate Holder's successful expansion of their renewable energy generation portfolio and ability to address issues if they arise, and their demonstrated ability to restore the BCWF to a useful, non-hazardous condition (see Conditions 107 through 109),[14] the Council may conclude that the BCWF, as amended by RFA 4, will continue to comply with OAR 345-022-0010.

5.3.2 BIGL bn, LLC

The BIGL team through its parent company, BrightNight, LLC, has more than 6 gigawatts of experience developing, designing, and constructing solar and storage projects across the United States. Currently, BIGL's global 30+ gigawatt development pipeline has converted to projects under or nearing construction in Arizona and Washington, and under current operations in India.

The Project Developer's selection and management of external vendors, including architects, engineers, major component suppliers, and prime contractors, will be guided by a team of experienced experts from BIGL. While the specific vendors and partners are yet to be determined, the BIGL's team of experienced professionals will be responsible for identifying, engaging, and overseeing these key external parties to ensure alignment with project goals and successful execution. The Project Developer's construction and operations will be overseen by a seasoned team of industry leaders.

5.4 Required Permits – OAR 345-021-0010(1)(e)

This section provides information about permits that the Certificate Holder will need for construction and operation of the Solar Components to meet the submittal requirements of OAR 345-021-0010(1)(e) paragraphs (A) through (G). While OAR 345 Division 22 does not provide an approval standard specific to Exhibit E, permits identified in Table 5 (OAR 345-021-0010(1)(e)(A) and (B)) are identified in each applicable exhibit included in Attachment 4. The changes proposed with RFA 4 do not require any new permits, or any new Site Certificate Conditions for permits, that were not previously considered by the Council.

Table 5. Permits

Permit	Agency Name and Contact	Authority	Description
Federal Permits			
Notice of Proposed Construction or Alteration (Form 7460-1)	Federal Aviation Administration (FAA) Attn: Dan Shoemaker, Airspace Specialist Seattle Obstruction Evaluation Group 1601 Lind Avenue SW Renton, WA 98057 (425) 227-2791 Dan.shoemaker@faa.gov	Federal Aviation Act of 1958 (14 U.S. Code [U.S.C.] § 44718); 14 Code of Federal Regulations (CFR) § 77	Description: Required for construction or alterations that may affect navigable airspace (e.g., pertaining to potential glare from the Solar Components' solar arrays), or for construction of structures within specified distances of runways or helipads. No permit is issued by the FAA. The Certificate Holder will use the FAA Notice Criteria Tool to confirm that the Solar Components do not exceed notice criteria for the FAA. The Certificate Holder will enter discussions with the FAA and Oregon Department of Aviation regarding the nearby Wasco State Airport and associated flight paths prior to construction of RFA 4, to ensure that there are no significant impacts related to potential glare that could result from construction and operation of the Solar Components. See Exhibit R for further discussion..
State Permits Not Federally Delegated			
Energy Facility Site Certificate	Oregon Department of Energy and Energy Facility Siting Council Attn: Sarah Esterson, Senior Policy Advisor 550 Capitol Street NE Salem, OR 97301 (800) 221-8035 sarah.esterson@energy.oregon.gov	Oregon Revised Statutes (ORS) 469.300 et seq.; Oregon Administrative Rules (OAR) Chapter 345, Divisions 1, 21-24	Description: This Site Certificate is the subject of this amendment request.
Archaeological Excavation Permit	Oregon Parks and Recreation Department, State Historic Preservation Office Attn: John Pouley, State Archaeologist 725 Summer Street NE, Suite C Salem, OR 97301 (503) 480-9164 John.Pouley@oprd.oregon.gov	ORS Chapters 97, 358, and 390; OAR Chapter 736, Division 51	Description: Ground-disturbing activity that may affect a known or unknown archaeological resource on public or private lands requires a permit issued by the Oregon Parks and Recreation Department. If the permit is needed, the Certificate Holder will obtain it from the State Historic Preservation Office and therefore this permit should not be included in and governed by the Site Certificate.
Oversize Load Movement Permit/Load Registration	Oregon Department of Transportation (ODOT) ODOT District 9 3313 Bret Clodfelter Way The Dalles, OR 97058 541-296-2215 Thomas.Lapp@odot.state.or.us	ORS 818.030; OAR Chapter 734, Division 82	Description: Authorization for oversized loads. Movement of construction cranes and other equipment and materials may require this permit. If needed, the Certificate Holder's third-party contractor will obtain this permit and load registration from ODOT and therefore this permit should not be included in and governed by the Site Certificate.
State Permits Federally Delegated			
National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Discharge General Permit 1200-C	ODEQ, Eastern Region Attn: Patty Isaak, Permit Coordinator for Eastern Region 800 SE Emigrant Avenue, Suite 330 Pendleton, OR 97801 (541) 278-4605 Patty.Isaak@state.or.us	Clean Water Act, Section 402 (33 U.S.C. § 1342); 40 CFR § 122; ORS 468 and 468B; OAR Chapter 340, Division 45	Description: An NPDES permit is required for construction activities that will disturb one or more acres of land and has a potential to impact Waters of the State. The Certificate Holder will obtain this permit for RFA 4 directly from ODEQ and it should not be included in and governed by the Site Certificate. A draft Erosion and Sediment Control Plan to be included in the application for the NPDES permit is included as Attachment I-1 to Exhibit I.

Permit	Agency Name and Contact		Authority	Description
Local Permits				
Conditional Use Permit and Zoning Permit	Sherman County Planning Department Attn: Georgia Macnab, Planning Director P.O. Box 381 Moro, OR 97039 (541) 565-3601		Sherman County Zoning Ordinance 3.1.3(q) – Commercial utility facilities	Description: The Certificate Holder elects to obtain a Council determination under ORS Chapter 469.504(1)(b). Under ORS 469.401(3), following issuance of the Site Certificate, the County, upon the Certificate Holder's submission of the proper application and fee, shall issue the permits addressed in the Site Certificate, subject only to the conditions set forth in the Site Certificate and without hearings or other proceedings. Because the Council will make the land use determination, this permit should be included in and governed by the Site Certificate.
Building Permit	Sherman County Planning Department Attn: Georgia Macnab Planning Director P.O. Box 381 Moro, OR 97039 (541) 565-3601	State of Oregon Building Codes Pendleton Field Office 800 SE Emigrant Ave., Suite 360 Pendleton, OR 97801 541-276-7814	ORS 455; OAR Chapter 734, Division 51	Description: A building permit is required prior to beginning construction. A building permit will be obtained by the third-party contractor prior to construction of each component for which a building permit will be required; therefore, this permit should not be included in and governed by the Site Certificate.
On-site Septic Permit	North Central Public Health District 419 7th St #100 The Dalles, OR 97058 541-506-2600		OAR 340-071-0120	Description: A permit would be obtained prior to conducting installation, repair, or alteration of a septic system and after site evaluation has been determined the site to be suitable for on-site wastewater disposal. The North Central Public Health District regulates the installation, repair, and maintenance of septic systems in Sherman County. If required, this permit will be obtained by the construction contractor prior to construction. Therefore, this permit should not be included in and governed by the Site Certificate.
Approach Road Permit	Sherman County Road Department Mark Coles 500 Court Street Moro, OR 97039 (541) 565-3271		Sherman County Ordinance 35-2007	Description: The Sherman County Road Department requires permits for activities that would impact county roads. A permit is required to construct an approach road to a Sherman County road. This permit would be obtained prior to the construction of an approach road from the Solar Components site to a Sherman County road.
Utility Permit	Sherman County Road Department Mark Coles 500 Court Street Moro, OR 97039 (541) 565-3271		Sherman County Road Department	Description: The Sherman County Road Department requires a permit for utilities in or crossing a Sherman County road right-of-way. A Utility Permit would be obtained prior to the construction of Solar Components transmission line that cross county road rights-of-way.

5.4.1 Permit Applications Not Federally Delegated – OAR 345-021-0010(1)(e)(C)

(i) In Exhibit J for permits related to wetlands; or

The Solar Components have been sited such that no impacts to wetlands and waters of the State or of the U.S. are anticipated. Therefore, no permits related to wetlands are required. Please see Exhibit J for further details, in accordance with OAR 345-021-0010(1)(e)(C)(i).

(ii) In Exhibit O for permits related to water rights.

During construction, the construction contractor will be responsible for identifying water sources and assuring that any needed permits or approvals are obtained for construction water use. Water for construction will either be obtained from the City of Wasco only, or from both City of Wasco and an on-site exempt well provided such use of well water would not cause the rate of extraction to exceed 5,000 gallons in any 1-day period.

Water for solar panel washing during operations will also be obtained from the City of Wasco under an existing water right. In addition, there is one irrigation water right within the Solar Micrositing Area (Oregon Certificate 57620; Scharf Water Right). The Certificate Holder is working with the participating landowner and exploring transferring the Scharf Water Right to industrial use for the life of the Solar Components. If successful, the transfer would allow Certificate Holder to use the available water for construction and operation activities, including fire suppression and panel washing. While the transfer of the Scharf Water Right would allow greater flexibility for operation of the Facility, it is not required for the Facility, as the City of Wasco confirmed it has sufficient supplies to serve the Facility. An exempt groundwater well will also provide water to the O&M building; Site Certificate Conditions 75 and 76 will continue to apply. Please see Exhibit O for further details.

The changes proposed with RFA 4 do not affect the Certificate Holder's ability to comply with the Site Certificate and OAR Chapter 690 Divisions 310 and 380. The Council may conclude that the BCWF, as amended in RFA 4, does not need a groundwater permit or surface water permit.

5.4.2 Permit Applications Federally Delegated – OAR 345-021-0010(1)(e)(D)

The EPA has delegated authority to the ODEQ to issue NPDES stormwater discharge permits for construction and operations activities. The Certificate Holder previously provided an application for NPDES 1200-C Construction Stormwater Discharge General Permit and an associated draft Erosion and Sediment Control Plan (ESCP) as Appendix I-1, Exhibit I, in RFA 1. The Certificate Holder will obtain an updated NPDES permit prior to construction via the ODEQ's "Your DEQ Online" platform.[15] The draft updated ESCP, which forms the basis for the updated ODEQ NPDES 1200-C Construction Stormwater Discharge General Permit, has been provided as Attachment I-1 to Exhibit I. The Certificate Holder anticipates that this permit will be pursued during preconstruction

[15] https://ordeq-edms-public.govonlinesaas.com/pub/login?web=1.

and that confirmation of permit receipt and a permit decision from ODEQ will be received prior to the start of construction. Construction work will be conducted in compliance with the ESCP approved under the NPDES 1200-C permit, which is consistent with Site Certificate Condition 9.1. In addition, the Certificate Holder will complete monitoring of the best management practices implemented under the NPDES 1200-C permit to ensure there are no significant potential adverse impacts to soil consistent with Site Certificate Condition 9.4.

5.4.3 Third-Party State or Local Permits – OAR 345-021-0010(1)(e)(E)

> *(i) Evidence that the applicant has, or has a reasonable likelihood of entering into, a contract or other agreement with the third party for access to the resource or service to be secured by that permit.*
>
> *(ii) Evidence that the third party has, or has a reasonable likelihood of obtaining, the necessary permit;*
>
> *(iii) An assessment of the impact of the proposed facility on any permits that a third party has obtained and on which the applicant relies to comply with any applicable Council standard;*

The Certificate Holder has experience working in various permitting regimes across Oregon and typically relies on its construction contractors to obtain third-party permits. The Certificate Holder maintains relationships with reputable construction firms with successful track records and reasonable likelihood of securing permits and completing compliant work. For each permit identified, the Certificate Holder has worked with contractors familiar with constructing or operating renewable energy facilities, and who are knowledgeable of the requirements for applications and activities under such permits. The Certificate Holder will select the same, or similar, contractors who have the necessary experience to likely obtain the necessary permits.

The Certificate Holder may rely on its third-party contractors to obtain the following permits as listed in Table 5 and summarized below in Table 6.

These permits are routine and common permits in Oregon and are not dependent on a unique resource or location. The contractors will be responsible for acquiring these permits prior to construction.

Table 6. Potential Third-Party State or Local Permits

Permit Name	Facility Phase	Description
Oregon Department of Transportation Oversized Load Movement Permit/Load Registration	Construction	Movement of construction cranes and other equipment and materials may require an oversize load movement permit/load registration.

Permit Name	Facility Phase	Description
Sherman County Building Permit	Construction	A building permit is required prior to beginning construction. Sherman County does not have its own building department, so relies on the City of Boardman Building Department for review and approval of all building permits in the county. A building permit will be obtained by the third-party contractor prior to construction of each component for which a building permit will be required.
Septic System Alteration Permit	Construction	If the existing septic system capacity is not sufficient, a septic system alteration permit will be obtained to increase the capacity of the existing septic system. If required, this permit will be obtained by the construction contractor prior to construction.

5.4.4 Third-Party Federally Delegated Permits – OAR 345-021-0010(1)(e)(F)

The Certificate Holder is not relying on any third-party federally delegated permits. BIGL (i.e., developer of the Solar Components) will directly obtain the NPDES 1200-C permit from ODEQ. Additionally, permits associated with temporary concrete batch plants (i.e., Basic Air Containment Discharge Permit; Clean Air Act [42 United States Code Section 7401 et seq.]; 40 CFR Parts 50, 51, and 52; ORS Chapters 468 and 468A; OAR Chapter 340, Division 216) are also common permits that are obtained by a third party, however, they will not be necessary for the Solar Components.

5.4.5 Monitoring – OAR 345-021-0010(1)(e)(G)

To the extent that monitoring may be required for any permit conditions, monitoring programs are discussed in the specific exhibit to which the permits pertain. The Certificate Holder will comply with monitoring requirements imposed by the Council and other jurisdictions responsible for granting permits or authorizations for the Solar Components.

6.0 Site Certificate Revisions – OAR 345-027-0360(1)(d)

OAR 345-027-0360 Preliminary Request for Amendment

(1) To request an amendment to the site certificate required by OAR 345-027-0350(3) or (4), the certificate holder shall submit a written preliminary request for amendment to the Department that includes the following:

*****

(d) The specific language of the site certificate, including conditions, that the certificate holder proposes to change, add or delete through the amendment;

A redlined Site Certificate is included as Attachment 1. Generally, the proposed changes to language in the Site Certificate include amending certain conditions to address updated information and adding new conditions specific to the addition of Solar Components. Proposed minor conditions are

discussed further in the appropriate exhibit (see Attachment 4). The proposed changes are presented in Attachment 1 and generally summarized below:

- Modifications to incorporate the Certificate Holder's proposed amendments to the Biglow Canyon Wind Farm in RFA 4. These changes include amending the BCWF description to incorporate the Solar Micrositing Area/RFA 4 Site Boundary, increasing the peak generating capacity for solar energy generation, increasing the area of solar photovoltaic energy generation, adding battery energy storage, and modifying the construction start and completion dates. Additionally, the BCWF description was modified to remove related or supporting facilities that were authorized by Amendment 2 but were not built by the construction start and completion timelines in the Second Amended Site Certificate, and therefore are no longer authorized to be constructed.
- Addition of new conditions to address wildfire prevention, and to specify requirements for other resources as they pertain directly to the addition of Solar Components and RFA 4 Site Boundary.
- Modifications requested by the Certificate Holder for clarity, scrivener error correction, or to reflect updated information.

7.0 Other Standards and Permits – OAR 345-027-0360(1)(e)

OAR 345-027-0360 Preliminary Request for Amendment

(1) To request an amendment to the site certificate required by OAR 345-027-0350(3) or (4), the certificate holder shall submit a written preliminary request for amendment to the Department that includes the following:

*****

(e) A list of all Council standards and other laws, including statutes, rules and ordinances, applicable to the proposed change, and an analysis of whether the facility, with the proposed change, would comply with those applicable laws and Council standards. For the purpose of this rule, a law or Council standard is "applicable" if the Council would apply or consider the law or Council standard under OAR 345-027-0375(2); and

A list of statutes, administrative rules, and local government ordinances relevant to amending the Site Certificate for the BCWF is provided in Attachment 4, Exhibit CC. No additional statutes, rules, or ordinances need to be added based on the proposed changes.

Council standards relevant to RFA 4 include Division 22 (General Standards for Siting Facilities) and Division 24 (Specific Standards for Siting Facilities). Division 23, which applies to non-generating facilities, does not apply to solar power generating facilities. Similarly, inapplicable provisions of Division 24 (e.g., standards applicable to gas plants, gas storage, non-generating facilities) are not discussed.

The BCWF as amended by RFA 4 would comply with applicable laws and Council standards. The proposed changes to the BCWF do not alter the basis for the Council's earlier findings for the BCWF. The primary purpose of RFA 4 is to increase the amount of non-emitting energy generation provided by the facility, and the addition of battery storage to maximize reliability and customer value and to help achieve Oregon's ambitious decarbonization targets. Table 7 identifies Council standards and other laws reviewed as part of RFA 4 and their applicability to RFA 4. The BCWF will comply with all existing applicable Site Certificate Conditions, with proposed modifications as identified in Attachment 1. The appended exhibits (see Attachment 4) contain the information necessary for the Council to find that the BCWF, with the proposed changes, continues to meet the standards of the relevant laws.

Table 7. Standards and Laws Relevant to Proposed Amendment

Standard	Applicability and Compliance
OAR 345-022-0000 General Standard of Review	Applicable and complies. The Council previously found that the BCWF complies with the General Standard of Review. The BCWF, as amended, continues to comply with the requirements of the EFSC siting statutes and standards. The changes proposed with RFA 4 will not result in any significant impacts to resources. In most cases, impacts to resources resulting from the proposed changes will be similar to what has already been approved for the BCWF. RFA 4 does not alter the Certificate Holder's ability to comply with the Site Certificate Conditions.
OAR 345-022-0010 Organizational Expertise	Applicable and complies. The Council has previously found that the Certificate Holder has the ability to construct, operate, and retire the BCWF. As part of RFA4 the Certificate Holder has described the violations or citations issued and demonstrated how those violations or citations were addressed to the satisfaction of the issuing agencies. RFA 4 does not alter the Certificate Holder's ability to comply with the Site Certificate Conditions. See Section 5.3 above for accompanying analysis.
OAR 345-022-0020 Structural Standard	Applicable and complies. As part of RFA 4 analysis was completed to incorporate and/or reference information, analysis, and findings from previous geotechnical investigations performed for the areas within the Solar Micrositing Area in addition to new geotechnical investigations completed in the Solar Micrositing Area to demonstrate that RFA 4 does not alter the Certificate Holder's ability to comply with applicable Site Certificate Conditions or applicable laws, standards, and rules. See Exhibit H in Attachment 4 for accompanying analysis.
OAR 345-022-0022 Soil Protection	Applicable and complies. Permanent and temporary disturbance will occur as a result of the components proposed in RFA 4 including the solar modules, BESS, and proposed substation. RFA 4 does not alter the Certificate Holder's ability to comply with the Site Certificate conditions. See Exhibit I in Attachment 4 for accompanying analysis and Section 4.4.3 for anticipated temporary and permanent disturbance impacts.
OAR 345-022-0030 Land Use	Applicable and complies with applicable substantive criteria from the Sherman County Zoning Ordinance. The BCWF, as amended, will not force a significant change in accepted farm practices, nor will it significantly increase the cost of farm practices. RFA 4 includes a request for a Goal 3 exception to allow inclusion of the solar energy generation facility on agricultural land but does not otherwise alter the Certificate Holder's ability to comply with the Site Certificate Conditions. See Exhibit K in Attachment 4 for accompanying analysis and Section 4.4.3 for anticipated temporary and permanent disturbance impacts.

Standard	Applicability and Compliance
OAR 345-022-0040 Protected Areas	Applicable and complies. Visual, noise, and traffic impacts were reviewed for the proposed changes. RFA 4 does not alter the Certificate Holder's ability to comply with the Site Certificate Conditions. See Exhibit L in Attachment 4 for accompanying analysis which identifies no significant impacts to protected areas.
OAR 345-022-0050 Retirement and Financial Assurance	Applicable and complies. With the proposed changes, the Certificate Holder is still able to restore the site to a useful, nonhazardous condition following permanent cessation of construction or operation of the amended BCWF. RFA 4 does not alter does not alter the Certificate Holder's ability to comply with the Site Certificate Conditions. See Exhibits M and X in Attachment 4 for accompanying analyses.
OAR 345-022-0060 Fish and Wildlife Habitat	Applicable and complies. The RFA 4 Site Boundary is in areas surveyed for fish and wildlife habitat as documented in Exhibit P. The Biglow Solar Habitat Mitigation Plan has been created to address the layout of the Solar Components and will be finalized after final design to account for impacts per Condition 61. RFA 4 does not alter the Certificate Holder's ability to comply with the Site Certificate Conditions. See Exhibit P in Attachment 4 for the accompanying analysis.
OAR 345-022-0070 Threatened and Endangered Species	Applicable and complies. The BWCF, as amended, will be constructed within the Solar Micrositing Area/RFA 4 Site Boundary where impacts to threatened and endangered species have been reviewed. RFA 4 will not cause a significant reduction in the likelihood of survival or recovery of state listed or endangered plant and animal species and does not alter the Certificate Holder's ability to comply with the Site Certificate Conditions. See Exhibit Q in Attachment 4 for the accompanying analysis.
OAR 345-022-0080 Scenic Resources	Applicable and complies. Scenic resources and associated visual impacts, as applicable, were reviewed for the Solar Components. The components proposed in RFA 4 including the solar modules, BESS, and related infrastructure have no adverse impacts on identified scenic resources and does not alter the Certificate Holder's ability to comply with the Site Certificate Conditions. See Exhibit R in Attachment 4 for accompanying analysis.
OAR 345-022-0090 Historic, Cultural and Archaeological Resources	Applicable and complies. A cultural resources survey was conducted in June and July 2024 for all areas where ground disturbance may occur as part of RFA 4. Some of these areas had previously been surveyed in 2016. Identified resources will be protected per Site Certificate Conditions and Inadvertent Discovery Plan. RFA 4 does not alter the Certificate Holder's ability to comply with the Site Certificate Conditions. See Exhibit S in Attachment 4 for accompanying analysis.
OAR 345-022-0100 Recreation	Applicable and complies. The components proposed in RFA including the solar modules, BESS, and related infrastructure have no adverse impacts on recreational opportunities and does not alter the Certificate Holder's ability to comply with the Site Certificate Conditions. See Exhibit T in Attachment 4 for accompanying analysis.
OAR 345-022-0110 Public Services	Applicable and complies. The proposed changes are not anticipated to substantially increase the demand of public services generated by the BCWF. RFA 4 does not alter the Certificate Holder's ability to comply with the Site Certificate Conditions. See Exhibit U in Attachment 4 for accompanying analysis.
OAR 345-022-0115 Wildfire Prevention and Risk Mitigation	OAR 345-022-0115 is a new standard adopted in 2022 and therefore was not previously addressed Third Amended Site Certificate. The design, construction, and operation of the amended BCWF, taking into account mitigation, is not likely to result in significant adverse impacts to areas subject to a heightened risk of wildfire or high-fire consequence areas addressed under OAR 345-022-0115. See Exhibit V in Attachment 4 for accompanying analysis.

Standard	Applicability and Compliance
OAR 345-022-0120 Waste Minimization	Applicable and complies. The Certificate Holder has plans to minimize the generation of solid waste and wastewater and to recycle or reuse solid waste and wastewater. RFA 4 does not alter the basis for the Council's prior findings regarding waste minimization and does not alter the Certificate Holder's ability to comply with the Site Certificate Conditions. See Exhibit W in Attachment 4 for accompanying analysis.
OAR 345-024-0010 Public Health and Safety Standards for Wind Energy Facilities	These standards do not apply.
OAR 345-024-0015 Siting Standards for Wind Energy Facilities	These standards do not apply.
OAR 345-024-0090 Transmission Lines	Applicable and complies. The components proposed in RFA including the solar modules, BESS, and related infrastructure will ensure public health and safety with respect to Electro Magnetic Frequencies and AC electric fields and induced currents comply with specific standards for transmission lines. RFA 4 does not alter the Certificate Holder's ability to comply with the Site Certificate Conditions. See Exhibits AA and DD in Attachment 4 for accompanying analysis.
OAR 340-035-0035 Noise Control Regulations	Applicable and complies. The Certificate Holder modeled noise generating components proposed with RFA 4, and the results show the Solar Components will comply with noise requirements in OAR 340-035-0035. RFA 4 does not alter the Certificate Holder's ability to comply with the Site Certificate conditions. See Exhibit Y in Attachment 4 for accompanying analysis.
Removal-Fill Law	Applicable and complies. A removal-fill permit is not needed for the Solar Components because the proposed changes will not temporarily or permanently impact waters of the State. RFA 4 does not alter the Certificate Holder's ability to comply with the Site Certificate conditions. See Exhibit J in Attachment 4 for accompanying analysis.
Water Rights	Applicable and complies. The anticipated construction water demand from the amended BCWF will be more than the amount previously anticipated for the existing BCWF as currently approved; however, the Certificate Holder provided information showing that municipal providers or other water sources can accommodate the additional water use. RFA 4 does not alter the basis for the Council's prior findings regarding water rights and does not alter the Certificate Holder's ability to comply with the Site Certificate Conditions. See Exhibit O in Attachment 4 for accompanying analysis.

8.0 Property Owners of Record – OAR 345-027-0360(1)(f))

OAR 345-027-0360 Preliminary Request for Amendment

(1) To request an amendment to the site certificate required by OAR 345-027-0350(3) or (4), the certificate holder shall submit a written preliminary request for amendment to the Department that includes the following:

*****

(f) A list of the names and mailing addresses of property owners, as described in this rule:

(A) The list must include all owners of record, as shown on the most recent property tax assessment roll, of property located:

(i) Within 100 feet of property which the subject of the request for amendment, where the subject property is wholly or in part within an urban growth boundary;

(ii) Within 250 feet of property which is the subject of the request for amendment, where the subject property is outside an urban growth boundary and not within a farm or forest zone; or

(iii) Within 500 feet of property which is the subject of the request for amendment, where the subject property is within a farm or forest zone; and

(B) In addition to incorporating the list in the request for amendment, the applicant must submit the list to the Department in an electronic format acceptable to the Department.

A property owner list and accompanying map are provided as part of Attachment 3. An updated list will be provided when requested by ODOE to represent most current property ownership details at the time the RFA is finalized.

9.0 Conclusion

As detailed above, the BWCF, as amended, will utilize the latest technology to improve grid reliability, while continuing to provide critical renewable energy for the state. Based on this submittal and attached exhibits (see Attachment 4), the Council may find that the amended BCWF continues to comply with the requirements of the Oregon Energy Facility Site Statutes, ORS 469.300 to 469.520, and all other applicable Oregon statutes and administrative rules within the Council's jurisdiction. Moreover, the existing and amended Site Certificate Conditions ensure that the amended BCWF will continue to comply with the applicable laws, standards, and rules. For these reasons, the Certificate Holder respectfully requests approval of RFA 4.

10.0 References

Battery University. 2022. BU-304a: Safety Concerns with Li-ion. February 2022. http://batteryuniversity.com/learn/article/safety_concerns_with_li_ion.

Energy Storage Association. 2022. Lithium Ion (LI-ION) Batteries. http://energystorage.org/energy-storage/technologies/lithium-ion-li-ion-batteries.

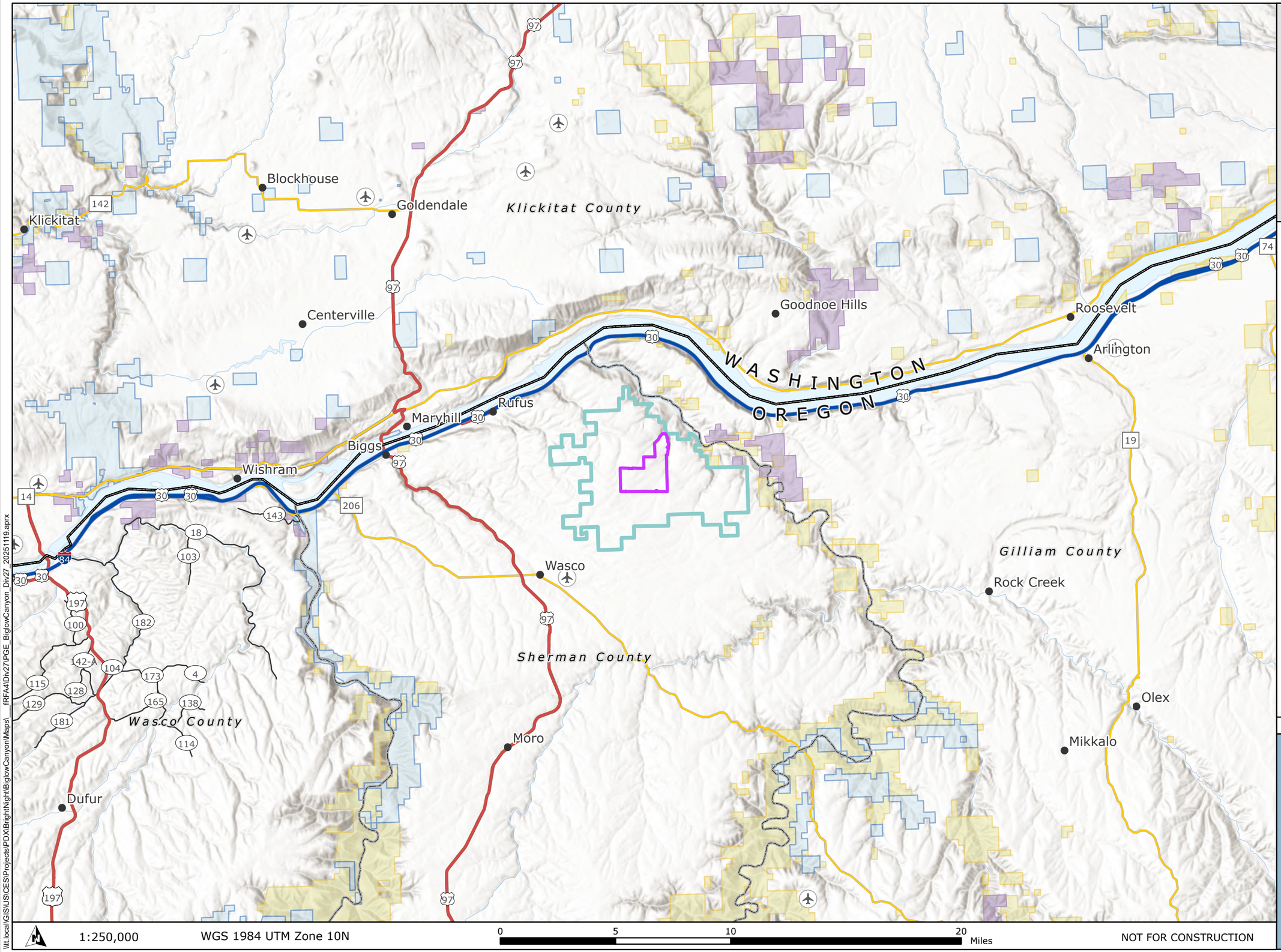
LAZARD. 2021. Lazard's Levelized Cost of Storage—Version 7.0. https://www.lazard.com/media/42dnsswd/lazards-levelized-cost-of-storage-version-70-vf.pdf.

Figures

Biglow Canyon Wind Farm Request for Amendment #4

Figure 1
Vicinity Map

SHERMAN COUNTY, OR



Solar Micrositing Area
Biglow Canyon Wind Farm Site Boundary
Airport
State Boundary
County Boundary
City/Town
Interstate Highway
US Highway
State Highway
County Highway
American Indian Reservation
Bureau of Land Management
State
Private

TETRA TECH

PGE

Reference Map

1:250,000

WGS 1984 UTM Zone 10N

0 5 10 20 Miles

NOT FOR CONSTRUCTION

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Biglow Canyon Wind Farm Request for Amendment #4

Figure 2
Preliminary Site Plan
Solar Micrositing Area

SHERMAN COUNTY, OR

Figure 2.1

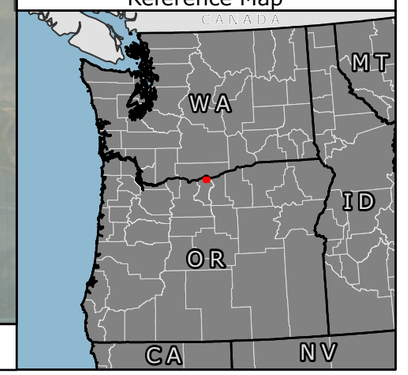
Figure 2.2

- Map Grid
- Solar Micrositing Area
- Existing Biglow Canyon Substation
- Gen-Tie Line (230 kV)
- Substation Access Road
- Access Roads
- Fenceline
- Inverter
- BESS
- Laydown Yard
- O&M Building
- Substation
- Solar Tracker

TETRA TECH

PGE

Reference Map



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WGS 1984 UTM Zone 10N

0 0.5 1 2 Mile

NOT FOR CONSTRUCTION

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Biglow Canyon Wind Farm Request for Amendment #4

Figure 2.1
Preliminary Site Plan
Northern Solar Area

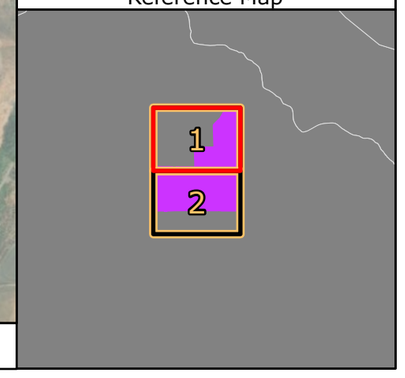
SHERMAN COUNTY, OR

- Solar Micrositing Area
- Access Roads
- Fenceline
- Inverter
- Solar Tracker

TETRA TECH

PGE

Reference Map



1:10,000

WGS 1984 UTM Zone 10N

1 inch equals 833 feet

0 0.25 0.5 Mile

NOT FOR CONSTRUCTION

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Biglow Canyon Wind Farm Request for Amendment #4

Figure 2.2
Preliminary Site Plan
Northern Solar Area

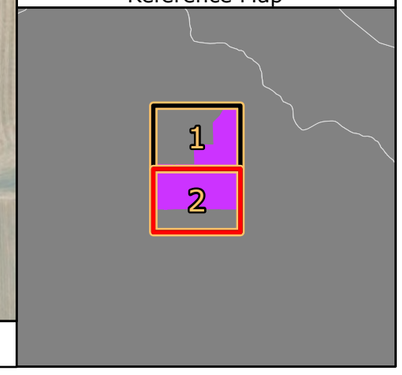
SHERMAN COUNTY, OR

- Solar Micrositing Area
- Existing Biglow Canyon Substation
- Gen-Tie Line (230 kV)
- Access Roads
- Substation Access Road
- Fenceline
- Inverter
- BESS
- Laydown Yard
- O&M Building
- Substation
- Solar Tracker

TETRA TECH

PGE

Reference Map



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WGS 1984 UTM Zone 10N

1 inch equals 833 feet

0 0.25 0.5 Mile

NOT FOR CONSTRUCTION

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Biglow Canyon Wind Farm Request for Amendment #4

Figure 3
Area Subject to Request for Amendment 4

SHERMAN COUNTY, OR

WASHINGTON
OREGON
Klickitat County
Gilliam County
Sherman County
Rufus

- Solar Micrositing Area
- State Boundary
- County Boundary
- City/Town
- Existing Transmission Lines (230-kV)
- Existing Biglow Canyon Wind Farm Turbine
- Existing Biglow Canyon Substation
- Site Boundary Subject to RFA 4

Oregon Energy Facility Council Facilities

- Biglow Canyon Wind Farm, Operating
- Golden Hills Wind Project, Operating
- Klondike III Wind Project, Operating

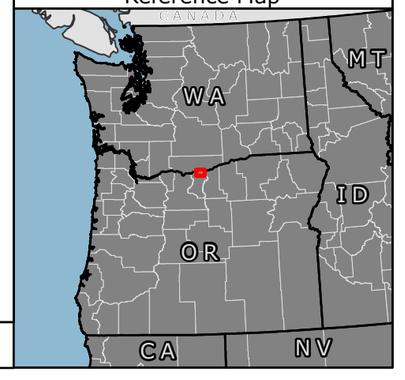
Land Status

- Bureau of Land Management

TETRA TECH

PGE

Reference Map



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WGS 1984 UTM Zone 10N

0 1 2 4 Miles

NOT FOR CONSTRUCTION

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Biglow Canyon Wind Farm Request for Amendment #4

Figure 4
Energy Facilities within 10 miles

SHERMAN COUNTY, OR

Blockhouse
Goldendale
Klickitat County
Centerville
Goodnoe Hills
Roosevelt
Arlington
WASHINGTON
OREGON
Maryhill
Rufus
Biggs
Wishram
Wasco
Sherman County
Gilliam County
Rock Creek
Wasco County
Moro

142 97 30 84 206 14 19

- Solar Micrositing Area
- Analysis Area (10-mile Buffer)
- Existing Biglow Canyon Substation
- State Boundary
- County Boundary
- City/Town
- Interstate Highway
- US Highway
- State Highway

Existing Transmission Lines
- Under 100 kV
- 101 - 230 kV
- Greater than 230 kV

Oregon Energy Facility Council Facilities
- Biglow Canyon Wind Farm, Operating
- Golden Hills Wind Project, Operating
- Klondike III Wind Project, Operating
- Leaning Juniper IIA Wind Power Facility, Operating
- Leaning Juniper IIB Wind Power Facility, Operating
- Oregon Trail Solar, Approved/Under Review
- Summit Ridge Renewable Energy Facility, Proposed

TETRA TECH PGE

Reference Map

CANADA MT WA ID OR CA NV

1:180,000 WGS 1984 UTM Zone 10N 0 5 10 20 Miles NOT FOR CONSTRUCTION

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Attachment 1. Redlined Site Certificate

ENERGY FACILITY SITING COUNCIL
OF THE
STATE OF OREGON

~~Third~~ Fourth Amended Site Certificate for the Biglow Canyon Wind Farm

~~October~~ December 10, 2025 ~~31, 2008~~

The Oregon Energy Facility Siting Council

~~THIRD~~ Fourth AMENDED SITE CERTIFICATE

FOR THE BIGLOW CANYON WIND FARM

I. INTRODUCTION

This site certificate for the Biglow Canyon Wind Farm ("Biglow" or the "facility") is issued and executed in the manner provided by ORS Chapter 469, by and between the State of Oregon ("State"), acting by and through its Energy Facility Siting Council (the "Council"), and Portland General Electric Company ("certificate holder"). This site certificate is a binding agreement between the State, acting by and through the Council, and the certificate holder. [Amendment #1]

The findings of fact, reasoning and conclusions of law underlying the terms and conditions of this site certificate are set forth in the following documents related to the facility, which are incorporated herein by this reference: (a) the Council's Final Order in the Matter of the Application for a Site Certificate for the Biglow Canyon Wind Farm (the "Final Order on the Application"); (b) the Council's Final Order on Amendment #1; (c) the Council's Final Order on Amendment #2; ~~and~~ (d) the Council's Final Order on Amendment #3; and (e) the Council's Final Order on Amendment #4. [Amendments #1, #2 ~~and~~ #3, and #4]

In interpreting this site certificate, any ambiguity shall be clarified by reference to the following, in order of priority: (1) this Fourth Amended Site Certificate; (2) the Final Order on Amendment #4~~Third Amended Site Certificate;~~ (~~2~~ 3) the Final Order on Amendment #3; (~~3~~ 4) the Final Order on Amendment #2; (~~4~~ 5) the Final Order on Amendment #1; (~~5~~ 6) the Final Order on the Application; and (~~6~~ 7) the record of the proceedings that led to the Final Orders on the Application, Amendment #1, Amendment #2 ~~and~~ Amendment #3, and Amendment #4. [Amendments #1, #2 ~~and~~ #3, and #4]

The terms used in this site certificate shall have the same meaning as set forth in ORS 469.300 and OAR 345-001-0010, except where otherwise stated or where the context clearly indicates otherwise.

II. SITE CERTIFICATION

A. To the extent authorized by state law and subject to the conditions set forth herein, the State authorizes the certificate holder to construct, operate and retire a wind and solar energy facility, together with certain related or supporting facilities, at the site in Sherman County, Oregon, as described in Section III of this site certificate. ORS 469.401(1)

B. This site certificate is effective until it is terminated under OAR 345-027-0110 or the rules in effect on the date that termination is sought or until the site certificate is revoked under ORS 469.440 and OAR 345-029-0100 or the statutes and rules in effect on the date that revocation is ordered. ORS 469.401(1)

C. This site certificate does not address, and is not binding with respect to, matters that were not addressed in the Council's Final Orders on the Application, Amendment #1, Amendment #2, ~~and~~ Amendment #3, and Amendment #4. These matters include, but are not limited to: building code compliance, wage, hour and other labor regulations, local government fees and charges, and other design or operational issues that do not relate to siting the facility (ORS

469.401(4)) and permits issued under statutes and rules for which the decision on compliance has been delegated by the federal government to a state agency other than the Council. ORS 469.503(3). [Amendments #1, #2, ~~and~~ #3, and #4]

D. Both the State and the certificate holder shall abide by local ordinances, state law, and the rules of the Council in effect on the date this site certificate is issued. In addition, upon a clear showing of a significant threat to public health, safety or the environment that requires application of later-adopted laws or rules, the Council may require compliance with such later-adopted laws or rules. ORS 469.401(2)

E. For a permit, license or other approval addressed in and governed by this site certificate, the certificate holder shall comply with applicable state and federal laws adopted in the future to the extent that such compliance is required under the respective state agency statutes and rules. ORS 469.401(2)

F. Subject to the conditions herein, this site certificate binds the State and all counties, cities and political subdivisions in Oregon as to the approval of the site and the construction, operation and retirement of the facility as to matters that are addressed in and governed by this site certificate. ORS 469.401(3)

G. Each affected state agency, county, city and political subdivision in Oregon with authority to issue a permit, license or other approval addressed in or governed by this site certificate shall, upon submission of the proper application and payment of the proper fees, but without hearings or other proceedings, issue such permit, license or other approval subject only to conditions set forth in this site certificate. ORS 469.401(3)

H. After issuance of this site certificate, each state agency or local government agency that issues a permit, license or other approval for the facility shall continue to exercise enforcement authority over such permit, license or other approval. ORS 469.401(3)

I. After issuance of this site certificate, the Council shall have continuing authority over the site and may inspect, or direct the Department to inspect, or request another state agency or local government to inspect, the site at any time in order to ensure that the facility is being operated consistently with the terms and conditions of this site certificate. ORS 469.430

III. DESCRIPTIONS

A. THE ENERGY FACILITY

In the site certificate application, the certificate holder defined the range of possible turbine vendors, sizes and numbers. Subject to specific conditions, this site certificate allows the certificate holder to construct wind turbines within defined 500-foot wide turbine corridors and to select turbine vendor, turbine size, number of turbines to be installed and precise turbine layout before beginning construction. This site certificate allows the certificate holder to construct the wind energy components (i.e., wind turbines, collector lines, access roads, meteorological towers) and Solar Components ~~other facility components~~ (defined below) ~~, collector lines, access roads, meteorological towers)~~ within micrositing areas. The facility is described further in the Final Order on Amendment #2 and Final Order on Amendment #4. [Amendment #2 and Amendment #4]

1. Major Structures. The Biglow Canyon Wind Farm ~~will~~ consists of ~~up to 225~~ 217 wind turbines (76 Vestas V82 1.65 MW and 141 Siemens 2.3 MW) with an aggregate nominal

nameplate generating capacity of up to 450 megawatts (MW) of electricity and an average electric generating capacity of up to 150 MW from wind energy and 125 MW from PV arrays and up to 125 MW in Battery Energy Storage System (BESS) capacity. [Amendment #4]

a. The Vestas V82 ~~T~~turbines ~~will be~~ are mounted on tubular steel towers ~~ranging in height from 265 to 280~~ with a height of 262 feet at the hub ~~with~~ and an overall height of ~~from 400 to 445~~ 397 feet including the turbine blades. The Siemens 2.3 MW turbines are mounted on tubular steel towers with a height of 262 feet at the hub and an overall height of 413 feet including the turbine blades. The turbines ~~will be~~ are erected within ~~up to 30~~ 19 corridors and spaced to optimize the facility's output.

b. The 125 MW solar PV power generating unit occupying up to 1,445 acres will be located in the Solar Micrositing Area. [Amendment #4]

c. The Solar Components will include solar arrays, inverters, battery energy storage system (BESS) facilities and their subcomponents (i.e., inverters), one collector substation, a total of approximately 600 feet of 230-kilovolt (kV) generation tie (gen-tie) transmission line, medium voltage collector lines, operations and maintenance (O&M) structures, site access roads, internal roads, perimeter fencing, facility entry gates, and temporary laydown areas. [Amendment #4]

d. The facility will be located on private ~~farm~~land that the certificate holder has leased from the affected landowners. [Amendments #1, ~~and~~ #2, and #4]

2. Related or Supporting Facilities for the Wind Energy Components. The facility includes the following related or supporting facilities: [Amendment #4]

a. Power Collection System. Each wind turbine will generate power at about 600 volts. The transformer sitting at the base of each wind turbine unit will increase the voltage to 34.5 kilovolts (kV). From the transformer, power will be transmitted to a central substation by means of electric cables. Most of the cables will be buried three feet or more below the surface in trenches about 3 feet wide. In areas where collector cables from several turbine strings follow the same alignment, e.g., on approach to the substation, multiple sets of cables may be installed within a single trench. ~~If the~~The facility ~~is fully developed, there will be~~contains about ~~106~~ 75 miles of 3-wire collector cables. Generally, these cables will be above, below or adjacent to the fiber optic cables comprising the supervisory control and data acquisition system. [Amendments #2 and #3]

In some locations, the collector cables may be constructed above ground on pole or tower structures. Aboveground structures would allow the collector cables to span terrain, such as canyons, native grasslands, wetlands, and intermittent streams, thereby reducing adverse environmental impacts, or to span cultivated areas, thereby reducing adverse impacts to farming operations. Poles or towers supporting aboveground segments of the power collection system will be about 23 to 28 feet tall. Pending final site design, the certificate holder states that the length of the aboveground segments of the power collection system will be up to but not exceeding 15 miles.

b. Substations and Interconnection System. The substation site will be a graveled, fenced area of up to 6 acres with transformers, switching equipment and a parking area. Transformers will be non-polychlorinated biphenyl (PCB) oil-filled types. The facility will interconnect with a new Bonneville Power Administration (BPA) system transmission line adjacent to the facility substation. [Amendment #2].

c. Meteorological Towers. The certificate holder will place up to 10 meteorological towers throughout the facility site to collect wind resource data. The towers would be up to 279 feet tall.

d. Operations and Maintenance Building. The site of the operations and maintenance buildings will comprise about 5 acres adjacent to the substation on Herin Lane. The O&M buildings will occupy about 17,500 square feet and will include office and workshop areas, control room, kitchen, bathroom, shower, utility sink, and other typical facilities. Water for the bathroom, shower and kitchen will be obtained from an onsite well constructed by a licensed contractor in accordance with local and state requirements. Water use will not be expected to exceed 1,000 gallons per day. Domestic wastewater generated at the O&M facility will drain into an onsite septic system. A graveled parking area for employees, visitors and equipment will be located adjacent to the O&M facility. [Amendments #2 and #3]

e. Control System. The certificate holder will install a supervisory control and data acquisition (SCADA) system to assist with the remote operation of the wind turbines, to collect data from each wind turbine, and to archive wind and performance data from various sources. The SCADA system will be linked by means of fiber optic cables or other means of communication to a central computer in the O&M facility.

f. Access Roads. The certificate holder will construct about ~~44~~ 41.7 miles of new roads to provide access to the wind turbine strings, together with turnaround areas at the end of each wind turbine string. The roads will be about 16 feet wide (possibly up to 28 feet wide in some locations) and will be composed of crushed gravel with shoulders (without gravel) about 3 feet wide. In addition, the certificate holder will improve about 0.7 mile of existing roads by providing an all-weather surface and, in some cases, widening the roads to accommodate construction vehicles. [Amendments #2 and #3]

g. Temporary Laydown and Staging Areas. Depending on whether it proceeds with the 150-turbine or 225-turbine configuration, the certificate holder will use a total of 186 or 261 laydown and staging areas to stage construction and store supplies and equipment during construction of the facility. The certificate holder will develop one 18,500 square-foot laydown area at the site of each wind turbine, a one-acre laydown area for each wind turbine string, and six additional 5-acre laydown areas at various locations throughout the facility site. The laydown areas will have a crushed gravel surface and will be returned to their pre-construction condition following completion of construction of the facility.

h. Temporary Crane Paths. The certificate holder will develop temporary crane paths, totaling approximately 16 miles, in order to move construction cranes between turbine corridors. The temporary crane paths will be returned to their

pre-construction condition following completion of construction of the facility. [Amendments #2 and #3]

3. Related or Supporting Facilities for the Solar Components. The facility includes the following related or supporting facilities:

   a. Collector Lines. In the maximum footprint layout, approximately 52 miles of 34.5-kV collector lines will be installed underground between the ISU transformers and collector substations. [Amendment #4]

   b. Power Collection System for the Solar PV Unit. The DC electricity generated from the PV solar panels is routed to inverters and step-up transformers to be converted to alternating current (AC) electricity and voltage increased to the appropriate collector circuit potential. The inverters and step-up transformers are located amongst the solar modules within the same perimeter fence for each solar area. Electrical power produced by the Solar Components would be aggregated and routed via a new 34.5-kV collection system to an interconnection with a new collector substation located in the Solar Micrositing Area. The new substation will step up the voltage from 34.5 kV to 230 kV and then interconnect with the existing Biglow Canyon Substation through a new 230-kV line terminal. [Amendment #4]

   c. Battery Energy Storage System (BESS). BESS capable of storing up to 500 megawatt-hours. The BESS will be AC-coupled and located adjacent to the collector substation in the Solar Area on a fenced 5-acre site. [Amendment #4]

   d. Operations and Maintenance Buildings. The O&M buildings will occupy approximately 1,800 square feet total and will include office and workshop areas, control room, kitchen, bathroom, shower, utility sink, and other typical facilities. Water for the bathroom, shower and kitchen will be obtained from either an existing or new exempt on-site well, constructed by a licensed contractor in accordance with local and state requirements. Water use will not be expected to exceed 1,000 gallons per day. Domestic wastewater generated at the O&M facility will drain into an onsite septic system. A graveled parking area for employees, visitors and equipment will be located adjacent to the O&M facility. [Amendment #4]

   e. Access Roads. The certificate holder plans to construct 10.5 miles of new gravel roads inside the perimeter fence and array field. The roads will be approximately 20 feet wide. [Amendment #4]

   f. Temporary Laydown and Staging Areas. The certificate holder will use a total of up to 18 acres of temporary construction areas. [Amendment #4]

4. Site Boundary, Micrositing Areas, and Estimated Disturbance

   a. The site boundary is approximately 25,000 acres. The Solar Micrositing Area is up to 1,924 acres, of which up to 1,445 acres will be permanently disturbed.

The maximum number and design/equipment specifications for the energy facility and related or supporting facilities authorized for construction and operation in this site certificate and the full description of facility components is presented in the Final Order on Amendment 4, Section [Placeholder], and is incorporated by reference. The facility

must be designed, constructed, and operated substantially as described in the site certificate. The Solar Components are intended to be completed in accordance with ORS 469.300(6), preconstruction conditions may be satisfied for the applicable phase, facility component or for the facility, as applicable, based on final design and configuration. [Amendment #4]

B. Location of the Facility

The facility is located about 2.5 miles northeast of Wasco in Townships 1 and 2 North, Ranges 17 and 18 East, Willamette Meridian, Sherman County, Oregon.

IV. SPECIFIC FACILITY CONDITIONS

The conditions listed in this section include conditions based on representations in the site certificate application and supporting record. The Council deems these representations to be binding commitments made by the applicant. These conditions are required under OAR 345-027-0020(10).

This section includes other specific facility conditions the Council finds necessary to ensure compliance with the siting standards of OAR Chapter 345, Divisions 22 and 24, and to protect the public health and safety.

A. Organizational Expertise, OAR 345-022-0010

(1) Before beginning construction of the facility or any phase of the facility, the certificate holder shall notify the Department of the identity and qualifications of the engineering, procurement and construction (EPC) contractor(s) for specific portions of the work. The certificate holder shall select EPC contractors that have substantial experience in the design and construction of similar facilities. The certificate holder shall report to the Department any change of major construction contractors. [Amendment #4]

(2) 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.

(3) During construction of the facility or any phase of the facility, the certificate holder shall have an on-site assistant construction manager who is qualified in environmental compliance to ensure compliance with all construction-related site certificate conditions. During operation, the certificate holder shall have a project manager who is qualified in environmental compliance to ensure compliance with all ongoing site certificate conditions. The certificate holder shall notify the Department of the name, telephone number, fax number and e-mail address of these managers and shall keep the Department informed of any change in this information. [Amendment #4]

(4) 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.

B. RETIREMENT AND FINANCIAL ASSURANCE, OAR 345-022-0050

(5) [Condition removed by Amendment #2]

(6) [Condition removed by Amendment #2]

(7) [Condition removed by Amendment #2]

(8) [Condition removed by Amendment #4] ~~If the certificate holder elects to build the facility in more than one phase using any turbines other than the GE 1.5-MW turbines or GE 3.0-MW turbines, before beginning construction of any phase of the facility and after considering all micrositing factors, the certificate holder shall provide to the Department a detailed map of that phase of the facility showing the final locations where facility components are proposed to be built in relation to the features and micrositing corridors shown on Figures 2, 2a, 2b and 2c as identified in the Final Order on Amendment #3, shall identify on this map the facilities that would constitute that phase of construction, and shall provide documentation defining the quantities of each of the following components that would constitute that phase of construction: turbines, pad transformers, meteorological towers, substation, O&M facility, miles of aboveground 34.5-kV collector system, miles of access road, acres of turnarounds and access road intersections, acres of temporary laydown area and miles of temporary crane paths. For each turbine, the certificate shall define the turbine manufacturer, turbine capacity, weight of steel, height of tower, sweep of blade, and size of concrete foundation.~~ ~~[Amendments #2 and #3]~~

(9) In February 2007, in accordance with the terms and conditions of the First Amended Site Certificate, the certificate holder submitted to the State of Oregon through the Council a letter of credit in the amount of $1.608 million before beginning construction of Phase 1 of the facility. The calculation of the amount of the letter of credit included a deduction from the estimated cost of site restoration for Phase 1 for the estimated value of scrap steel. In the Final Order on Amendment #2, the Council found that there should be no deduction of scrap or salvage value in calculating the amount of financial assurance required for site restoration.

In June 2007, in accordance with the terms and conditions of the Second Amended Site Certificate, the certificate holder submitted an amended letter of credit for Phase 1 in the amount of $5.001 million (3rd Quarter 2007 dollars). In January 2008, in accordance with the terms and conditions of the Second Amended Site Certificate, the certificate holder submitted an amended letter of credit for Phase 1 in the amount of $5.058 million (1st Quarter 2008 dollars).

Before beginning construction of any future phase of the facility, the certificate holder shall submit a bond or letter of credit for that phase in an amount approved by the Department and based on the costs shown in Table 1 of the Final Order on Amendment #3 and Table [Placeholder] of the Final Order on Amendment #4.

(a) The certificate holder shall adjust the amounts of all bonds or letters of credit submitted in compliance with this condition to present value as of the date of issuance, using the following calculation and subject to approval by the Department:

(i) Adjust the Subtotal (in 2005 for wind components and 2025 dollars for solar components) 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"). If at any time the Index is no longer published, the Council shall select a comparable calculation to adjust 2005 or 2025 dollars to present value.

(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 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.

(b) The certificate holder shall annually adjust all bonds or letters of credit submitted in compliance with this condition to present value as of the date of issuance as described in (a).

(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 all bonds or letters of credit for the facility in the annual report submitted to the Council under Condition (122).

(f) The bond or letter of credit shall not be subject to revocation or reduction before retirement of the facility. [Amendments #2, ~~and~~ #3, and #4]

(10) If the certificate holder elects to use a bond to meet the requirements of Condition (9), the certificate holder shall ensure that the surety is obligated to comply with the requirements of applicable statutes, Council rules and this 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, Council rules and this site certificate before the surety commences any activity to complete construction, operate or retire the facility.

(11) [Condition removed by Amendment #4] ~~The certificate holder shall begin construction of the facility by June 30, 2009. Under OAR 345-015-0085(9), a site certificate is effective upon execution by the Council Chair and the applicant. The Council may grant an extension of the deadline to begin construction in accordance with OAR 345-027-0030 or any successor rule in effect at the time the request for extension is submitted. [Amendment #2]~~

(12) [Condition removed by Amendment #4] ~~The certificate holder shall complete construction of the facility by June 30, 2011. Construction is complete when: (1) the facility is substantially complete as defined by the certificate holder's construction contract documents; (2) acceptance testing has been satisfactorily completed; and (3) the energy facility is ready to begin continuous operation consistent with the site certificate. The certificate holder shall promptly notify the Department of the date of completion of construction. The Council may grant an extension of the deadline for completing construction in accordance with OAR~~

~~345-027-0030 or any successor rule in effect at the time the request for extension is submitted.~~ ~~[Amendment #2]~~

(13) The certificate holder shall construct a facility substantially as described in the site certificate.

(14) Notwithstanding OAR 345-027-0050(2), an amendment of the site certificate is required if the proposed change would increase the electrical generation capacity of the facility and would increase the number of wind turbines or the dimensions of existing wind turbines.

(15) The certificate holder shall obtain all necessary state and local permits or approvals required for construction, operation and retirement of the facility or ensure that its contractors obtain necessary state and local permits or approvals.

(16) [Condition removed by Amendment #4] ~~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 OAR 345-001-0010 or ORS 469.300 and shall provide to the Department a description of the work and evidence that its value is less than $250,000.~~

C. LAND USE, OAR 345-022-0030

(17) The certificate holder shall construct the public road improvements described in the site certificate application to meet or exceed road standards for the road classifications in the County's Transportation System Plan and Zoning Ordinance because roads will require a more substantial section to bear the weight of the vehicles and turbine components than would usually be constructed by the County. [Amendment #4]

(18) The certificate holder shall ensure that no equipment or machinery is parked or stored on any county road except while in use.

(19) The site certificate holder shall design and construct private access roads to minimize the division of existing farm units.

(20) The certificate holder shall not locate any aboveground facility structure (including wind turbines, O&M buildings, substations, and meteorological towers, but not including aboveground transmission and collector lines and junction boxes) within 30 feet from any property line or within 50 feet from the right-of-way of any arterial or major collector road or street and shall not allow any architectural feature, as described in Sherman County Zoning Ordinance Section 4.2, to project into these required setbacks by more than 2 feet. [Amendment #3]

(21) The certificate holder shall locate access roads and temporary construction laydown and staging areas to minimize disturbance with farming practices and, wherever feasible, shall place turbines and transmission interconnection lines along the margins of cultivated areas to reduce the potential for conflict with farm operations. The certificate holder shall place aboveground collector lines and junction boxes along property lines and public road rights-of-way to the extent practicable. [Amendment #2]

(22) During operation of the facility, the certificate holder, in cooperation with landowners, shall avoid impact on cultivated land to the extent reasonably possible when performing facility repair and maintenance activities.

(23) Where necessary and feasible, the certificate holder shall provide access across construction trenches to fields within the facility site and otherwise provide adequate and timely access to properties during critical periods in the farming cycle, such as harvest.

(24) Before beginning construction of the facility or any phase of the facility, the certificate holder shall record a Farm Management Easement covering the properties on which the certificate holder locates wind power generation facilities or Solar Components. The certificate holder shall record the easements in the real property records of Sherman County and shall file a copy of the recorded easement with the Sherman County Planning Director. [Amendment #4]

(25) The certificate holder shall remove from Special Farm Assessment the portions of parcels on which facilities are located and shall pay all property taxes due and payable after the Special Farm Assessment is removed from such properties.

D. SOIL PROTECTION, OAR 345-022-0022

(26) The certificate holder shall conduct all construction work in compliance with an Erosion and Sediment Control Plan (ESCP) satisfactory to the Oregon Department of Environmental Quality and as required under the National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge General Permit #1200-C. The certificate holder shall include in the ESCP any procedures necessary to meet local erosion and sediment control requirements and storm water management requirements.

(27) During construction of the facility or any phase of the facility, the certificate holder shall limit truck traffic to designated existing and improved road surfaces to avoid soil compaction, to the extent possible. [Amendment #4]

(28) The certificate holder shall cover turbine pad areas with gravel or other non-erosive material immediately following exposure during construction and shall maintain the pad area covering during operation of the facility.

(29) During construction of the facility or any phase of the facility, the certificate holder shall restore areas that are temporarily disturbed in accordance with the methods, monitoring procedures and success criteria described in the Amended Revegetation Plan for wind energy components that is incorporated ~~in this order as~~ in the Final Order on Amendment 3 as Attachment B and as that Revegetation Plan may be amended from time to time. During operation of the facility, the certificate holder shall restore areas that are temporarily disturbed during facility maintenance or repairs according to the same methods and monitoring procedures. [Amendment #4]

(30) During operation of the facility or any phase of the facility, the certificate holder shall routinely inspect and maintain all roads, pads and trenched areas and, as necessary, maintain or repair erosion control measures. [Amendment #4]

(31) During construction of the underground collector system, the certificate holder shall open the smallest necessary sections of trench during each day of construction and backfill the trenches as soon as is practical after power lines have been set in the trenches.

(32) During construction of the facility or any phase of the facility, the certificate holder shall strip and stockpile soil from laydown areas only during the time of year when rainfall is lowest, minimizing erosion from precipitation. [Amendment #4]

(33) During construction of the facility or any phase of the facility, the certificate holder shall use straw bales or similar containment features to protect soil stockpiles from erosion, as needed. [Amendment #4]

(34) During construction of the facility or any phase of the facility, the certificate holder shall keep wind-borne erosion to a minimum by using water trucks for dust suppression, as necessary. [Amendment #4]

(35) During construction of the facility or any phase of the facility, the certificate holder shall restore staging locations by bringing them back to their original contours, covering them with topsoil, and revegetating or preparing them for planting of wheat or barley or use as range land.[Amendment #4]

E. PROTECTED AREAS, OAR 345-022-0040

(36) [Condition removed by Amendment #4] ~~Without Department approval, the certificate holder shall not move any turbines within its micrositing corridors such that a worst-case visual impact beyond that stated in the ASC and ASC Supplement would occur for the John Day Wildlife Refuge, the John Day Federal Wild and Scenic River, or the John Day State Scenic Waterway (Parrish Creek to Tumwater Falls). Before constructing any turbines in the northward extension of Corridor 3 shown on Figure 2a of the Request for Amendment #3, the certificate holder shall provide a visual impact analysis that includes the proposed turbines and demonstrates to the satisfaction of the Department that the requirements of this condition are met. [Amendment #3]~~

F. SCENIC AND AESTHETIC VALUES, OAR 345-022-0080

[No conditions]

G. RECREATION, OAR 345-022-0100

[No conditions]

H. PUBLIC HEALTH AND SAFETY STANDARDS FOR WIND ENERGY FACILITIES, OAR 345-024-0010

(37) During construction, operation or retirement of the facility, the certificate holder shall notify the Department within 72 hours of any accidents that may result in public health and safety concerns, including mechanical failures on the site associated with construction or operation of the facility.

(38) Before beginning construction of ~~any phase of~~ the facility, the certificate holder shall submit a Notice of Proposed Construction or Alteration to the Federal Aviation Administration (FAA) identifying the proposed final locations of the turbines and related or supporting facilities for that phase of the facility. The certificate holder shall notify the Department of the FAA's response as soon as it has been received. [Amendment #4]

(39) The certificate holder shall enclose the facility substation(s) with appropriate fencing and locked gates to protect the public from electrical hazards. [Amendment #4]

(40) The certificate holder shall not locate turbine towers within 450 feet of any residence. The certificate holder shall not locate turbine towers within 450 feet of any public road, unless

the certificate holder demonstrates to the Department's satisfaction that a lesser setback is consistent with the protection of public health and safety.

(41) The certificate holder shall construct turbine towers that are smooth steel structures with no exterior ladders or access to the turbine blades and shall install locked access doors accessible only to authorized personnel.

(42) During construction of the facility, the certificate holder shall follow manufacturers' recommended handling instructions and procedures to prevent damage to towers or blades that could lead to failure.

(43) During operation of the facility, the certificate holder shall have an operational safety-monitoring program and shall inspect turbine blades on a regular basis for signs of wear. The certificate holder shall repair turbine blades as necessary to protect public safety.

(44) During operation of the facility, the certificate holder shall install and maintain self-monitoring devices on each turbine, connected to a fault annunciation panel or supervisory control and data acquisition (SCADA) system at the O&M facility, to alert operators to potential dangerous conditions, and the certificate holder shall remedy any dangerous conditions immediately.

(45) During construction of the facility, the certificate holder shall install generator step-up transformers at the base of each turbine tower in locked cabinets designed to protect the public from electrical hazards and to avoid creation of artificial habitat for raptor prey.

(46) During construction of the facility, the certificate holder shall require that all on-site construction contractors develop and implement a site health and safety plan that informs on-site workers and others what to do in case of an emergency and that includes the locations of fire extinguishers and nearby hospitals, important telephone numbers, and first aid techniques.

(47) During operation of the facility, the certificate holder shall develop and implement a site health and safety plan that informs on-site employees and others what to do in case of an emergency and that includes the locations of fire extinguishers and nearby hospitals, important telephone numbers, and first aid techniques. [Amendment #4]

I. SITING STANDARDS FOR WIND ENERGY FACILITIES, OAR 345-024-0015

(48) The certificate holder shall construct turbines on concrete foundations and shall cover the ground within a minimum 10-foot radius with non-flammable material. The certificate holder shall maintain the non-flammable pad area covering throughout operation of the facility.

(49) During construction and operation of ~~the facility~~ wind energy components, the certificate holder shall implement a plan to control the introduction and spread of noxious weeds. The certificate holder shall develop the weed control plan in consultation with the Sherman County Weed Control District and the Department. [Amendment #4]

(50) During construction of the facility or any phase of the facility, to reduce the visual impact of the facility, the certificate holder shall:

(a) Paint turbine towers, nacelles, rotors, meteorological towers, and cabinets containing pad-mounted equipment with a low-reflectivity, neutral gray, white, off-white or earth tone finish to reduce contrast with the surrounding background.

(b) Apply a low-reflectivity finish to the exterior of the O&M buildings and substation equipment to control their visual integration into the surrounding background.

(c) With the exception of the turbine, BESS, and inverter equipment, where a manufacturer's logo ~~that~~ may appear on turbine nacelles, BESS enclosure, or modular inverter enclosure, not allow any advertising to be used on any part of the facility or on any signs posted at the facility. In addition, the certificate holder may place its logo on the nacelles of not more than 20 percent of the wind turbines.

(d) Use only those signs required by law or for facility safety or security, except that the certificate holder may erect a sign near the O&M facility or substation to identify the wind energy facility. [Amendments #2 ~~and~~ #3 and #4]

(51) The certificate holder shall design and construct the O&M buildings to be generally consistent with the character of similar buildings used by commercial farmers or ranchers in the area and shall paint the building in a neutral color to blend with the surrounding background. [Amendment #3]

(52) The certificate holder shall not use exterior nighttime lighting except:

(a) The minimum turbine tower lighting required by the Federal Aviation Administration.

(b) Security lighting at the O&M buildings and substation, provided that such lighting is shielded or directed downward to reduce glare.

(c) Minimum lighting necessary for repairs or emergencies.

(d) Minimum lighting necessary for nighttime construction. The certificate holder may use lighting only at the work location and only directed downward to illuminate the work area at the turbine base or upward from the base to illuminate the turbine tower; construction lighting shall not be directed outward. The certificate holder shall use nighttime lighting only with the approval of the owner of the property on which the work is conducted and shall provide notice of nighttime construction to occupants of all residences within one-half mile of the construction site.[Amendment #3]

J. Siting Standards for Transmission Lines, OAR 345-024-0090

(53) The certificate holder shall design the transmission lines so that alternating current electric fields shall not exceed 9 kV per meter at one meter above the ground surface in areas accessible to the public.

(54) The certificate holder shall design the transmission lines so that induced voltages resulting from the transmission lines are as low as reasonably achievable. [Amendment #4]

K. Threatened and Endangered Species, OAR 345-022-0070

(55) [Condition removed by Amendment #4] ~~Before beginning construction of the facility or any phase of the facility, the certificate holder shall deliver to the Department surveys for threatened and endangered plant and wildlife species in newly affected areas as identified in the ASC Supplement.~~

(56) [Condition removed by Amendment #4] ~~If construction of the facility begins after 2006, the certificate holder shall review the ONHIC and USFWS databases and consult with an expert designated by ODFW on an annual basis before beginning construction to determine whether nesting bald eagles or peregrine falcons have been documented to occur within two miles of the facility. The certificate holder shall report the results of the database review and consultation to the Department and to ODFW and, if there have been new documentations of nesting bald eagles or peregrine falcons within two miles of the facility, the certificate holder shall implement appropriate measures to protect the species from adverse impact, as approved by the Department and ODFW.~~

(57) The certificate holder shall implement measures to mitigate impacts to sensitive wildlife habitat during construction including, but not limited to, the following:

(a) Preparing maps to show sensitive areas, such as nesting or denning areas for sensitive wildlife species, that are off limits to construction personnel.

(b) Ensuring that a qualified person instructs construction personnel to be aware of wildlife in the area and to take precautions to avoid injuring or destroying wildlife or significant wildlife habitat.

(c) Avoiding unnecessary road construction, temporary disturbance and vehicle use.

L. FISH AND WILDLIFE HABITAT, OAR 345-022-0060

(58) The certificate holder shall design and construct all aboveground transmission line support structures following the practices suggested by the Avian Powerline Interaction Committee at the time of design. ~~APLIC 1996, referenced in the site certificate application, p. P-33) and shall install anti-perching devices on transmission pole tops and cross arms where the poles are located within one-half mile of any wind turbine.~~ [Amendment #4]

(59) The certificate holder may construct turbines and other ~~facility~~ wind energy components within the 500-foot turbine corridors shown on Figures P-1 through P-10 of the site certificate application and March 2006 supplement and within the "Permitted Areas" and "Amendment III Areas" as shown on Figures 2, 2a, 2b and 2c of the Request for Amendment #3, subject to the following requirements addressing potential habitat impact:

(a) The certificate holder shall not construct any facility components within areas of Category 1 or Category 2 habitat and shall avoid temporary disturbance of Category 1 or Category 2 habitat.

(b) The certificate holder shall design and construct facility components that are the minimum size needed for safe operation of the energy facility.

(c) Prior to constructing any turbines or permanent related or supporting facilities within the northward extension of Corridor 3 shown on Figure 2a of the Request for Amendment #3, the certificate holder shall provide the Department with maps and calculations documenting the additional permanent impacts, if any, to Category 3 and Category 4 habitat predicted to result from construction. If the construction would result in additional permanent impacts, the certificate holder shall increase the area of mitigation for permanent loss of Category 3 and Category 4 habitat as described in the Habitat Mitigation Plan incorporated herein by Condition 63.[Amendment #3 and #4]

(60) During construction of wind energy components, the certificate holder shall protect the area within a 1300-foot buffer around any active nests of the following species during the sensitive period, as provided in this condition:

Species	Sensitive Period	Early Release Date
Swainson's hawk	April 1 to August 15	May 31
Golden eagle	February 1 to August 31	May 31
Ferruginous hawk	March 15 to August 15	May 31
Burrowing owl	April 1 to August 15	July 15

The 1300-foot buffer may be reduced, with Department approval, if there is an adequate physical barrier between the nest site and the construction impacts such that a 1300-foot buffer proves to be excessive.

During the year in which construction of any phase occurs, the certificate holder shall use a protocol approved by the Oregon Department of Fish and Wildlife (ODFW) to determine whether there are any active nests of these species within a half-mile of any areas that would be disturbed during construction. If a nest is occupied by any of these species after the beginning of the sensitive period, the certificate holder shall not engage in high-impact construction activities (activities that involve blasting, grading or other major ground disturbance) or allow high levels of construction traffic within 1300 feet of the nest site, or such lesser distance as may be approved by the Department in the event there is an adequate physical barrier between the nest site and the construction impacts.

In addition, the certificate holder shall flag the boundaries of the 1300-foot buffer area, or such lesser distance as may be approved by the Department in the event there is an adequate physical barrier between the nest site and the construction impacts, and shall instruct construction personnel to avoid any unnecessary activity within the buffer area. The certificate holder shall direct a qualified biologist, approved by the Department, to observe the active nest sites during the sensitive period for signs of disturbance and to notify the Department of any non-compliance with this condition. The Department has approved the qualifications of the four biologists identified in the Final Order on Amendment #2. The certificate holder may select other qualified biologists to observe the nest sites, subject to Department approval. If the biologist observes nest site abandonment or other adverse impact to nesting activity, the certificate holder shall implement appropriate mitigation, in consultation with ODFW and subject to the approval of the Department, unless the adverse impact is clearly shown to have a cause other than construction activity. The certificate holder may begin or resume high impact construction activities before the ending day of the sensitive period if any known nest site is not occupied by the early release date. If a nest site is occupied, then the certificate holder may begin or resume high-impact construction before the ending day of the sensitive period with the approval of ODFW, after the young are fledged. The certificate holder shall use a protocol approved by ODFW to determine when the young are fledged (the young are independent of the core nest site). [Amendment #2 and #4]

(61) The certificate holder shall conduct wildlife monitoring and mitigation for the wind energy components in accordance with the Wildlife Monitoring and Mitigation Plan that is incorporated in the Final Order on Amendment #2 as Attachment A and as may be amended from time to time. [Amendments #2 and #4]

(62) The certificate holder shall restore areas that are temporarily disturbed during construction of the wind energy components in accordance with the methods, monitoring procedures and success criteria set forth in the Revegetation Plan that is incorporated in the Final Order on Amendment #2 as Attachment B and as may be amended from time to time. [Amendments #2 and #4]

(63) Before beginning construction of the wind energy components ~~facility~~, the certificate holder shall acquire the legal right to create, maintain and protect a habitat mitigation area for the life of the ~~facility~~ wind energy components by means of an outright purchase, conservation easement or similar conveyance and shall provide a copy of the documentation to the Department. Within the habitat mitigation area for the wind energy components, the certificate holder shall improve the habitat quality in accordance with the Habitat Mitigation Plan that is incorporated in the Final Order on Amendment #3 as Attachment C and as may be amended from time to time. [Amendments #2, ~~and~~ #3, and #4]

(64) For the life of the project, the certificate holder shall provide to the appropriate staff of the Confederated Tribes of the Warm Springs Reservation of Oregon the same annual mitigation and monitoring reports it submits to the Department.

(65) For the life of the project, the certificate holder shall consult annually with the appropriate staff of the Confederated Tribes of the Warm Springs Reservation of Oregon to discuss noxious weed or other issues that may arise from the close proximity of the facility site and tribal lands. The certificate holder shall provide a summary of that consultation in the annual report it provides to the Department.

M. STRUCTURAL STANDARD, OAR 345-022-0020

(66) Before beginning construction of the facility or any phase of the facility, the certificate holder shall conduct a site-specific geotechnical investigation and shall report its findings to the Oregon Department of Geology & Mineral Industries (DOGAMI). The certificate holder shall conduct the geotechnical investigation after consultation with DOGAMI and in accordance with the Oregon Board of Geologists Examiners guidelines entitled: Guidelines for Engineering Geology Reports and Site-Specific Seismic Hazard Report. [Amendment #4]

(67) The certificate holder shall design and construct the facility in accordance with requirements set forth by the State of Oregon's Building Code Division and any other applicable codes and design procedures.

(68) The certificate holder shall design, engineer and construct the facility to avoid dangers to human safety presented by non-seismic hazards. As used in this condition, "non-seismic hazards" include settlement, landslides, flooding and erosion.

N. HISTORIC, CULTURAL AND ARCHAEOLOGICAL RESOURCES, OAR 345-022-0090

(69) Before beginning construction of any phase of the facility, the certificate holder shall provide to the Department a map showing the final design locations of all components of that phase of the facility and areas that would be temporarily disturbed during construction and also showing the areas surveyed by CH2M Hill and Archaeological Investigations Northwest, Inc. (AINW) in preparing the Cultural Resources Surveys for Biglow Canyon Wind Farm included in the site certificate application as Attachment S-1 and in Request for Amendment #2 as Attachment 15. The certificate holder shall hire qualified personnel to

conduct field investigation of all areas of permanent or temporary disturbance that CH2M Hill and AINW did not previously survey and shall provide to the Department a written report of the field investigation. If any significant historic, cultural or archaeological resources are found during the field investigation, the certificate holder shall ensure that construction and operation of the facility will have no impact on the resources. The certificate holder shall instruct all construction personnel to avoid areas where the resources were found and shall implement other appropriate measures to protect the resources. [Amendment #2]

(70) The certificate holder shall ensure that ~~a~~an approved Inadvertent Discovery Plan (IDP) is in place during construction. The approved final IDP will be consulted upon with Tribes and SHPO and submitted to the Council. The IDP should stipulate that a tribal monitor or ~~qualified person~~ archaeologist qualified person instructs construction personnel in the identification of cultural resources. [Amendment #4]

(71) The certificate holder shall ensure that a qualified archaeologist is present on site during initial ~~any~~ ground-disturbing activities~~, including grading and graveling~~; or, the certificate holder shall implement an alternate monitoring ~~procedure~~plan~~, including a testing strategy~~, as agreed to in consultation with the Department, SHPO, and the tribes. [Amendment #4]

(72) The certificate holder shall ensure that construction personnel cease all ground-disturbing activities in the immediate area if any archaeological or cultural resources are found during construction of the facility in compliance with the approved IDP. ~~until a qualified archaeologist can evaluate the significance of the find. The certificate holder shall notify the Department and the State Historic Preservation Office (SHPO) of the find. If the archaeologist determines that the resource is significant, the certificate holder shall make recommendations to the Council for mitigation, including avoidance or data recovery, in consultation with the Department, SHPO, and other appropriate parties. The certificate holder shall not restart work in the affected area until the certificate holder has demonstrated to the Department that it has complied with the archaeological permit requirements administered by SHPO.~~ [Amendment #4]

(73) The certificate holder shall ensure that construction personnel proceed carefully in the vicinity of the mapped alignment of the Oregon Trail. If any intact physical evidence of the trail is discovered, the certificate holder shall avoid any disturbance to the intact segments, by redesign, re-engineering or restricting the area of construction activity. The certificate holder shall promptly notify the Department and SHPO of the discovery, in compliance with the approved IDP. ~~The certificate holder shall consult with the Department and with SHPO to determine appropriate mitigation measures.~~ [Amendment #4]

O. PUBLIC SERVICES, OAR 345-022-0110

(74) During construction of the facility or any phase of the facility, the certificate holder and its contractors shall obtain all water required for construction activities from off-site sources previously permitted for such uses, and/or from an on-site exempt well, provided such use of well water would not cause the rate of extraction to exceed 5,000 gallons in any one-day period, and/or from an on-site well in accordance with a water right granted by the Oregon Water Resources Department. [Amendment #4]

(75) Before beginning operation of the facility, the certificate holder shall have in operation a well suitable for delivering water, not exceeding 5,000 gallons per day, for domestic use at the facility's O&M buildings and, provided the rate of extraction would not exceed 5,000 gallons per day, blade and solar panel-washing activities. The certificate holder shall not change the source of water for the facility's domestic use without prior Council approval. [Amendment #3 and #4]

(76) During operation of the facility, the certificate holder and its contractors shall obtain all water required for blade and solar panel-washing activities from off-site sources previously permitted for such uses and/or from the on-site well, provided such use of well water would not cause the rate of extraction to exceed 5,000 gallons in any one-day period and/or from an on-site well in accordance with a water right granted by the Oregon Water Resources Department. [Amendment #4]

(77) Before beginning construction of the facility or any phase of the facility, the certificate holder shall develop a system for monitoring state highways and local roads that would serve as transporter routes for delivering equipment to the facility site for degradation, *e.g.*, major potholes, so that safe travel paths may be maintained. The monitoring system shall include site inspection and photographic cataloguing of existing road conditions so that pre-construction conditions can be compared with conditions after construction has been completed. The certificate holder shall coordinate monitoring methods and preferred mitigation efforts with Sherman County Public Works and the Oregon Department of Transportation. [Amendment #1 and #4]

(78) After completing construction of the facility or any phase of the facility, the certificate holder shall restore state highways and county roads affected by facility construction activities to at least their pre-construction conditions, to the satisfaction of Sherman County Public Works and the Oregon Department of Transportation. [Amendment #4]

(79) During construction of the facility or any phase of the facility, the certificate holder shall implement the following measures to reduce traffic delays on county roads serving as transporter routes for delivery of equipment to the facility site:

(a) Provide notice to adjacent landowners when construction takes place to help minimize access disruptions;

(b) Provide proper road signage and warnings of "Equipment on Road," "Truck Access," or "Road Crossings;"

(c) Implement traffic diversion equipment, such as advance signage and pilot cars, whenever possible when slow or oversized loads are being hauled;

(d) Encourage carpooling for the construction workforce to reduce traffic volume;

(e) Employ flaggers, as necessary, to direct traffic when large equipment is entering or exiting public roads to minimize risk of accidents; and

(f) Maintain at least one travel lane at all times so that roadways will not be closed to traffic as a result of construction vehicles entering or exiting public roads. [Amendment #4]

P. WASTE MINIMIZATION, OAR 345-022-0120

(80) The certificate holder shall use hazardous materials in a manner that protects public health, safety and the environment and shall comply with applicable local, state and federal environmental laws and regulations.

(81) If a spill or release of hazardous materials occurs during construction or operation of the facility or any phase of the facility, the certificate holder shall notify the Department within 72 hours and shall clean up the spill or release and dispose of any contaminated soil or other materials according to applicable regulations. The certificate holder shall ensure that spill kits containing items such as absorbent pads are located on equipment and storage facilities to respond to accidental spills and shall instruct employees handling hazardous materials in the proper handling, storage and cleanup of these materials. [Amendment #4]

(82) During construction of the facility or any phase of the facility, the certificate holder shall provide portable toilets for on-site sewage handling and shall ensure that the portable toilets are pumped and cleaned regularly by a licensed contractor that is qualified to pump and clean portable toilet facilities. [Amendment #4]

(83) During operation of the facility or any phase of the facility, the certificate holder shall discharge sanitary wastewater generated at the O&M buildings to ~~a~~ licensed on-site septic systems in compliance with county permit requirements. The certificate holder shall design the individual septic systems with a capacity that is less than 2,500 gallons per day. [Amendments #3 and #4]

(84) During construction of the facility, the certificate holder shall implement a waste management plan that includes but is not limited to the following measures:

(a) Training employees to minimize and recycle solid waste;

(b) Minimizing the generation of wastes from construction through detailed estimating of materials needs and through efficient construction practices;

(c) Recycling steel and other metal scrap;

(d) Recycling wood waste;

(e) Recycling packaging wastes, such as paper and cardboard;

(f) Collecting non-recyclable waste for transport to a landfill by a licensed waste hauler; and

(g) Segregating all hazardous wastes, such as used oil, oily rags and oil-absorbent materials, mercury-containing lights and lead-acid and nickel-cadmium batteries for disposal by a licensed firm specializing in the proper recycling or disposal of hazardous wastes.

(85) The certificate holder may dispose of waste concrete on site with the permission of the landowner and in accordance with OAR 340-093-0080 and other applicable regulations. The certificate holder shall dispose of waste concrete on site by placing the material in an excavated hole, covering the concrete with at least 3 feet of topsoil, and grading the area to match existing contours. If the waste concrete is not disposed of on site, the certificate holder shall arrange for proper disposal in a licensed landfill.

(86) During construction of the facility or any phase of the facility, the certificate holder shall ensure that the wash down of concrete trucks occurs only at a contractor-owned batch plant, tower foundation locations, or at a designated location within the Solar Micrositing Area. If such wash down occurs at tower foundation locations or within the Solar Micrositing Area, then the certificate holder shall ensure that wash down wastewater does not run off the construction site into otherwise undisturbed areas and that the wastewater is disposed of on backfill piles and buried underground with the backfill over the tower foundation. [Amendment #4]

(87) During operation of the facility or any phase of the facility, the certificate holder shall implement a waste management plan that includes but is not limited to the following measures:

(a) Training employees to minimize and recycle solid waste;

(b) Recycling paper products, metals, glass and plastics;

(c) Collecting non-recyclable waste for transport to a landfill by a licensed waste hauler; and

(d) Segregating all hazardous wastes, such as used oil, oily rags and oil-absorbent materials, mercury-containing lights and lead-acid and nickel-cadmium batteries for disposal by a licensed firm specializing in the proper recycling or disposal of hazardous wastes. [Amendment #4]

(88) During operation of the facility, the certificate holder may engage in solar panel and blade-washing activities but shall ensure that these activities do not cause runoff of washwater from the site or discharges to surface waters, storm sewers or dry wells. The certificate holder shall not use acids, bases or metal brighteners with the wash water. The certificate may use biodegradable, phosphate-free cleaners sparingly. [Amendments #2 and #4]

Q. Noise Control Regulations, OAR 340-035-0035

(89) To reduce noise impacts at nearby residential areas, the certificate holder shall:

(a) Confine the noisiest operation of heavy construction equipment to the daylight hours;

(b) Require contractors to install and maintain exhaust mufflers on all combustion engine-powered equipment; and

(c) Establish a complaint response system at the construction manager's office to address noise complaints.

(90) [Condition removed by Amendment #4] ~~If the GE 1.5-MW turbines (for which the certificate holder states the maximum sound power level warranted by the manufacturer is 104 dBA) or the GE 3.0-MW turbines (provided the certificate holder is able to demonstrate, by means of the manufacturer's warranty or other means acceptable to the Department, that the maximum sound power level of the GE 3.0-MW turbine is 106 dBA) will be used at the facility, before beginning construction, the certificate holder shall present information demonstrating to the satisfaction of the Department that the following requirements have been met at the 24 identified noise sensitive properties. The identified noise sensitive properties are the properties listed in Table 12 of the Final Order on the Application and further identified in the Final Order on Amendment #2, except for property R14:~~

~~(a) For any identified noise sensitive property where the previously-predicted maximum hourly L_{50} noise level caused by the facility would equal or exceed 50 dBA, the certificate holder shall identify the final design locations of all turbines to be built and perform a noise analysis demonstrating, in accordance with OAR 340-035-0035(1)(b)(B)(iii)(IV), that the total hourly L_{50} noise level generated by the facility would not exceed 50 dBA at the appropriate measurement point. The certificate holder shall perform the noise analysis using the noise model, CADNA/A by DataKustik GmbH of Munich, Germany, and shall assume the following input parameters:~~

- ~~The maximum sound power level of turbines and substation transformers based on the manufacturers' warranty or confirmed by other means acceptable to the Department~~
- ~~The exact locations of the proposed turbines~~
- ~~The environmental factors included in the original noise analysis, *i.e.*, the temperature, relative humidity, barrier effects and ground effects used in the original analysis. If the certificate holder has cause to believe the environmental factors included in the original noise analysis are no longer valid for a particular receiver, the certificate holder shall perform the noise analysis for that receiver using both the environmental factors included in the original noise analysis and the environmental factors the certificate holder now believes to be applicable to that receiver.~~

~~(b) Where the previously-predicted hourly L50 noise levels caused by the facility would exceed 36 dBA but not exceed 50 dBA at any identified noise sensitive property, the certificate holder has obtained a legally effective easement or real covenant pursuant to which the owner of the property authorizes the certificate holder's operation of the facility to increase ambient statistical noise levels L10 and L50 by more than 10 dBA at the appropriate measurement point. A legally effective easement or real covenant shall: (i) include a legal description of the burdened property (the noise sensitive property); (ii) be recorded in the real property records of the county; (iii) expressly benefit the certificate holder; (iv) expressly run with the land and bind all future owners, lessees or holders of any interest in the burdened property; and (v) not be subject to revocation without the certificate holder's written approval.~~

~~(c) If, for any identified noise sensitive property where the previously-predicted hourly L_{50} noise levels caused by the facility would exceed 36 dBA but not exceed 50 dBA, the certificate holder has not obtained a legally effective easement or real covenant as described in (b) above, the certificate holder shall identify the final design locations of all turbines to be built and perform a noise analysis demonstrating, in accordance with OAR 340-035-0035(1)(b)(B)(iii)(IV), that the total noise generated by the facility (including the noise from turbines and substation transformers) would meet the ambient noise degradation test at the appropriate measurement point on those noise sensitive properties. The certificate holder shall perform the noise analysis using the noise model, CADNA/A by DataKustik GmbH of Munich, Germany, and shall assume the following input parameters:~~

- ~~The maximum sound power level of turbines and substation transformers based on the manufacturers' warranty or confirmed by other means acceptable to the Department~~
- ~~The exact locations of the proposed turbines~~

- ~~The environmental factors included in the original noise analysis, *i.e.*, the temperature, relative humidity, barrier effects and ground effects used in the original analysis. If the certificate holder has cause to believe the environmental factors included in the original noise analysis are no longer valid for a particular receiver, the certificate holder shall perform the noise analysis for that receiver using both the environmental factors included in the original noise analysis and the environmental factors the certificate holder now believes to be applicable to that receiver.[Amendment #2]~~

(91) Before beginning construction using turbines other than GE 1.5-MW or GE 3.0-MW turbines, the certificate holder shall:

(a) Identify the final design locations of all turbines to be built, perform a noise analysis for all turbines and substation transformers, and generate a new table listing each noise sensitive property, as defined in OAR 340-035-0015(38), and the predicted maximum hourly L_{50} noise level at each noise sensitive property. The certificate holder shall perform the noise analysis using the noise model, CADNA/A by DataKustik GmbH of Munich, Germany, and shall assume the following input parameters:

- The maximum sound power level of turbines and substation transformers based on the manufacturers' warranty or confirmed by other means acceptable to the Department
- The exact locations of the proposed turbines
- The environmental factors included in the original noise analysis, i.e., the temperature, relative humidity, barrier effects and ground effects used in the original analysis. If the certificate holder has cause to believe the environmental factors included in the original noise analysis are no longer valid for a particular receiver, the certificate holder shall perform the noise analysis for that receiver using both the environmental factors included in the original noise analysis and the environmental factors the certificate holder now believes to be applicable to that receiver.

(b) Demonstrate to the satisfaction of the Department that the requirements of paragraphs (a), (b) and (c) of Condition~~s~~ (90) have been met for each noise sensitive property listed on the new table generated under paragraph (a) of this condition, except for any new development of noise sensitive property that occurs after the effective date of the Second Amended Site Certificate.
[Amendment #2]

R. REMOVAL-FILL LAW

[No conditions]

S. GROUND WATER ACT

[No conditions]

T. PUBLIC HEALTH AND SAFETY

(92) During operation of the facility, the certificate holder shall maintain built-in fire prevention measures in each turbine that would shut down the turbine automatically before mechanical problems create excess heat or sparks.

(93) During construction and operation of the facility or any phase of the facility, the certificate holder shall develop and implement fire management plans in consultation with local fire control authorities to minimize the risk of fire and to respond appropriately to any fires that occur on the facility site. In developing the fire management plans, the certificate holder should take into account the dry nature of the region and should address risks on a seasonal basis. [Amendment #4]

(94) During construction and operation of the facility, the certificate holder shall ensure that each on-site company vehicle contains a fire extinguisher, water spray can, shovel, emergency response procedures book, and two-way radio for immediate communication with the O&M facility.

(95) During construction of the facility or any phase of the facility, the certificate holder shall clear vegetation from a laydown area adjacent to each wind turbine or solar components where welding, cutting, grinding, or other flame- or spark-producing operations are likely to occur. [Amendment #4]

(96) Upon beginning operation of the facility, the certificate holder shall provide to all local fire departments maps of the facility site. During operation of the facility, the certificate holder shall provide to all local fire departments 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.

(97) During operation of the facility, the certificate holder shall ensure that all on-site employees receive annual fire prevention and response training by qualified instructors or members of the local fire department and that all employees are instructed to keep vehicles on roads and off dry grassland, except when off-road operation is required for emergency purposes.

(98) During operation of the facility, the certificate holder shall comply with the written fire protection recommendations of the Fire Chief of the applicable Rural Fire Protection District and shall promptly provide to the Department any correspondence from the Fire Chief regarding those recommendations. [Amendment #3]

(99) The certificate holder shall take reasonable steps to reduce or manage exposure to electromagnetic fields (EMF), consistent with Council findings presented in the "Report of EMF Committee to the Energy Facility Siting Council," March 30, 1993, and subsequent findings. Effective on the date of this site certificate, the certificate holder shall provide information to the public, upon request, about EMF levels associated with the energy facility and related transmission lines.

(100) At least 30 days before beginning preparation of detailed design and specifications for the electrical transmission lines, the certificate holder shall consult with the Oregon Public Utility Commission staff to ensure that its designs and specifications are consistent with applicable codes and standards.

V. CONDITIONS REQUIRED BY COUNCIL RULES

This section lists conditions specifically required by OAR 345-027-0020 (Mandatory Conditions in Site Certificates), OAR 345-027-0028 (Monitoring Conditions), and OAR Chapter 345, Division 26 (Construction and Operation Rules for Facilities). All references to the Office of Energy or Office shall be construed to refer to the Department of Energy. These conditions

should be read together with the specific facility conditions included in Sections IV, VI and VII to ensure compliance with the siting standards of OAR Chapter 345, Divisions 22 and 24, and to protect the public health and safety. The certificate holder shall comply with all site certificate conditions. [Amendment #3]

The Council recognizes that many specific tasks related to the design, construction, operation and retirement of the facility will be undertaken by the certificate holder's agents or contractors. Nevertheless, the certificate holder is responsible for ensuring compliance with all provisions of the site certificate.

(101) OAR 345-027-0020(1): The Council shall not change the conditions of the site certificate except as provided for in OAR Chapter 345, Division 27.

(102) OAR 345-027-0020(2): The certificate holder shall submit a legal description of the site to the Department of Energy within 90 days after beginning operation of the facility. The legal description required by this rule means a description of metes and bounds or a description of the site by reference to a map and geographic data that clearly and specifically identifies the outer boundaries that contain all parts of the facility. [Amendment #3]

(103) OAR 345-027-0020(3): The certificate holder shall design, construct, operate and retire the facility:

(a) Substantially as described in the site certificate;

(b) In compliance with the requirements of ORS Chapter 469, applicable Council rules, and applicable state and local laws, rules and ordinances in effect at the time the site certificate is issued; and

(c) In compliance with all applicable permit requirements of other state agencies.

(104) OAR 345-027-0020(4): The certificate holder shall begin and complete construction of the facility by the dates specified in the site certificate.

(105) OAR 345-027-0020(5): Except as necessary for the initial survey or as otherwise allowed for wind energy facilities, transmission lines or pipelines under this section, the certificate holder shall not begin construction, as defined in OAR 345-001-0010, or create a clearing on any part of the site until the certificate holder has construction rights on all parts of the site. For the purpose of this rule, "construction rights" means the legal right to engage in construction activities. For wind energy facilities, transmission lines or pipelines, if the certificate holder does not have construction rights on all parts of the site, the certificate holder may nevertheless begin construction, as defined in OAR 345-001-0010, or create a clearing on a part of the site if the certificate holder has construction rights on that part of the site and:

(a) The certificate holder would construct and operate part of the facility on that part of the site even if a change in the planned route of a transmission line or pipeline occurs during the certificate holder's negotiations to acquire construction rights on another part of the site; or

(b) The certificate holder would construct and operate part of a wind energy facility on that part of the site even if other parts of the facility were modified by amendment of the site certificate or were not built.

[Amendment #3]

(106) OAR 345-027-0020(6): If the Council requires mitigation based on an affirmative finding under any standards of Division 22 or Division 24 of OAR Chapter 345, the certificate holder shall consult with affected state agencies and local governments designated by the Council and shall develop specific mitigation plans consistent with Council findings under the relevant standards. The certificate holder must submit the mitigation plans to the Office and receive Office approval before beginning construction or, as appropriate, operation of the facility. [Amendment #3]

(107) OAR 345-027-0020(7): The certificate holder shall prevent the development of any conditions on the site that would preclude restoration of the site to a useful, non-hazardous condition to the extent that prevention of such site conditions is within the control of the certificate holder.

(108) OAR 345-027-0020(8): Before beginning construction of the facility, the certificate holder shall submit to the State of Oregon, through the Council, a bond or letter of credit in a form and amount satisfactory to the Council to restore the site to a useful, non-hazardous condition. The certificate holder shall maintain a bond or letter of credit in effect at all times until the facility has been retired. The Council may specify different amounts for the bond or letter of credit during construction and during operation of the facility. [Amendment #3]

(109) OAR 345-027-0020(9): The certificate holder shall retire the facility if the certificate holder permanently ceases construction or operation of the facility. The certificate holder shall retire the facility according to a final retirement plan approved by the Council, as described in OAR 345-027-0110. The certificate holder shall pay the actual cost to restore the site to a useful, non-hazardous condition at the time of retirement, notwithstanding the Council's approval in the site certificate of an estimated amount required to restore the site.

(110) OAR 345-027-0020(10): The Council shall include as conditions in the site certificate all representations in the site certificate application and supporting record the Council deems to be binding commitments made by the applicant.

(111) OAR 345-027-0020(11): Upon completion of construction, the certificate holder shall restore vegetation to the extent practicable and shall landscape all areas disturbed by construction in a manner compatible with the surroundings and proposed use. Upon completion of construction, the certificate holder shall remove all temporary structures not required for facility operation and dispose of all timber, brush, refuse and flammable or combustible material resulting from clearing of land and construction of the facility. [Amendment #3]

(112) OAR 345-027-0020(12): The certificate holder shall design, engineer and construct the facility to avoid dangers to human safety presented by seismic hazards affecting the site that are expected to result from all maximum probable seismic events. As used in this rule "seismic hazard" includes ground shaking, landslide, liquefaction, lateral spreading, tsunami inundation, fault displacement and subsidence.

(113) OAR 345-027-0020(13): The certificate holder shall notify the Department, the State Building Codes Division and the Department of Geology and Mineral Industries promptly if site investigations or trenching reveal that conditions in the foundation rocks differ significantly from those described in the application for a site certificate. After the

Department receives the notice, the Council may require the certificate holder to consult with the Department of Geology and Mineral Industries and the Building Codes Division and to propose mitigation actions. [Amendment #3]

(114) OAR 345-027-0020(14): The certificate holder shall notify the Department, the State Building Codes Division and the Department of Geology and Mineral Industries promptly if shear zones, artesian aquifers, deformations or clastic dikes are found at or in the vicinity of the site. [Amendment #3]

(115) OAR 345-027-0020(15): Before any transfer of ownership of the facility or ownership of the site certificate holder, the certificate holder shall inform the Department of the proposed new owners. The requirements of OAR 345-027-0100 apply to any transfer of ownership that requires a transfer of the site certificate. [Amendment #3]

(116) OAR 345-027-0020(16): If the Council finds that the certificate holder has permanently ceased construction or operation of the facility without retiring the facility according to a final retirement plan approved by the Council, as described in OAR 345-027-0110, the Council shall notify the certificate holder and request that the certificate holder submit a proposed final retirement plan to the Office within a reasonable time not to exceed 90 days. If the certificate holder does not submit a proposed final retirement plan by the specified date, the Council may direct the Department to prepare a proposed a final retirement plan for the Council's approval. Upon the Council's approval of the final retirement plan, the Council may draw on the bond or letter of credit described in OAR 345-027-0020(8) to restore the site to a useful, non-hazardous condition according to the final retirement plan, in addition to any penalties the Council may impose under OAR Chapter 345, Division 29. If the amount of the bond or letter of credit is insufficient to pay the actual cost of retirement, the certificate holder shall pay any additional cost necessary to restore the site to a useful, non-hazardous condition. After completion of site restoration, the Council shall issue an order to terminate the site certificate if the Council finds that the facility has been retired according to the approved final retirement plan. [Amendment #3]

(117) [Condition removed by Amendment #3]

(118) OAR 345-027-0023(4): If the facility includes any transmission line under Council jurisdiction:

(a) The certificate holder shall design, construct and operate the transmission line in accordance with the 2012 edition ~~requirements~~ of the National Electrical Safety Code approved June 3, 2011, by the ~~(~~American National Standards Institute~~, Section C2, 1997 Edition)~~; and

(b) The certificate holder shall develop and implement a program that provides reasonable assurance that all fences, gates, cattle guards, trailers, or other objects or structures of a permanent nature that could become inadvertently charged with electricity are grounded or bonded throughout the life of the line.

[Amendment #3 and #4]

(119) OAR 345-027-0023(5): If the proposed energy facility is a pipeline or a transmission line or has, as a related or supporting facility, a pipeline or transmission line, the Council shall specify an approved corridor in the site certificate and shall allow the certificate holder to construct the pipeline or transmission line anywhere within the corridor, subject to the

conditions of the site certificate. If the applicant has analyzed more than one corridor in its application for a site certificate, the Council may, subject to the Council's standards, approve more than one corridor. [Amendment #3]

(120) OAR 345-027-0028: The following general monitoring conditions apply:

(a) The certificate holder shall consult with affected state agencies, local governments and tribes and shall develop specific monitoring programs for impacts to resources protected by the standards of Divisions 22 and 24 of OAR Chapter 345 and resources addressed by applicable statutes, administrative rules and local ordinances. The certificate holder must submit the monitoring programs to the Department of Energy and receive Department approval before beginning construction or, as appropriate, operation of the facility.

(b) The certificate holder shall implement the approved monitoring programs described in section (a) and monitoring programs required by permitting agencies and local governments.

(c) For each monitoring program described in sections (a) and (b), the certificate holder shall have quality assurance measures approved by the Department before beginning construction or, as appropriate, before beginning commercial operation.

(d) If the certificate holder becomes aware of a significant environmental change or impact attributable to the facility, the certificate holder shall, as soon as possible, submit a written report to the Department describing the impact on the facility and any affected site certificate conditions. [Amendment #3]

(121) OAR 345-026-0048: Following receipt of the site certificate or an amended site certificate, the certificate holder shall implement a plan that verifies compliance with all site certificate terms and conditions and applicable statutes and rules. As a part of the compliance plan, to verify compliance with the requirement to begin construction by the date specified in the site certificate, the certificate holder shall report promptly to the Department of Energy when construction begins. Construction is defined in OAR 345-001-0010. In reporting the beginning of construction, the certificate holder shall describe all work on the site performed before beginning construction, including work performed before the Council issued the site certificate, and shall state 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. The certificate holder shall document the compliance plan and maintain it for inspection by the Department or the Council. [Amendment #3]

(122) OAR 345-026-0080: The certificate holder shall report according to the following requirements:

(a) General reporting obligation for energy facilities under construction or operating:

(i) Within six months after beginning construction, and every six months thereafter during construction of the energy facility and related or supporting facilities, the certificate holder shall submit a semiannual construction progress report to the Department of Energy. In each construction progress report, the certificate holder shall describe any significant changes to major milestones for construction. The certificate holder shall include such information related to construction as specified in the site certificate. When the reporting date coincides, the certificate holder may include the construction progress report within the annual report described in this Condition.

(ii) By April 30 of each year after beginning construction, the certificate holder shall submit an annual report to the Department addressing the subjects listed in this Condition. The Council Secretary and the certificate holder may, by mutual agreement, change the reporting date.

(iii) To the extent that information required by this rule is contained in reports the certificate holder submits to other state, federal or local agencies, the certificate holder may submit excerpts from such other reports to satisfy this rule. The Council reserves the right to request full copies of such excerpted reports.

(b) In the annual report, the certificate holder shall include the following information for the calendar year preceding the date of the report:

(i) Facility Status: An overview of site conditions, the status of facilities under construction, and a summary of the operating experience of facilities that are in operation. In this section of the annual report, the certificate holder shall describe any unusual events, such as earthquakes, extraordinary windstorms, major accidents or the like that occurred during the year and that had a significant adverse impact on the facility.

(ii) Reliability and Efficiency of Power Production: For electric power plants, the plant availability and capacity factors for the reporting year. The certificate holder shall describe any equipment failures or plant breakdowns that had a significant impact on those factors and shall describe any actions taken to prevent recurrence of such problems;

(iii) Fuel Use: For thermal power plants:

(A) The efficiency with which the power plant converts fuel into electric energy. If the fuel chargeable to power heat rate was evaluated when the facility was sited, the certificate holder shall calculate efficiency using the same formula and assumptions, but using actual data; and

(B) The facility's annual hours of operation by fuel type and, every five years after beginning operation, a summary of the annual hours of operation by fuel type as described in OAR 345-024-0590(5).

(iv) Status of Surety Information: Documentation demonstrating that bonds or letters of credit as described in the site certificate are in full force and effect and will remain in full force and effect for the term of the next reporting period;

(v) Monitoring Report: A list and description of all significant monitoring and mitigation activities performed during the previous year in accordance with site certificate terms and conditions, a summary of the results of those activities, and a discussion of any significant changes to any monitoring or mitigation program, including the reason for any such changes.

(vi) Compliance Report: A description of all instances of noncompliance with a site certificate condition. For ease of review, the certificate holder shall, in this section of the report, use numbered subparagraphs corresponding to the applicable sections of the site certificate.

(vii) Facility Modification Report: A summary of changes to the facility that the certificate holder has determined do not require a site certificate amendment in accordance with OAR 345-027-0050.

(viii) Nongenerating Facility Carbon Dioxide Emissions: For nongenerating facilities that emit carbon dioxide, a report of the annual fuel use by fuel type and annual hours of operation of the carbon dioxide emitting equipment as described in OAR 345-024-0630(4).

[Amendment #3]

(123) [Condition removed by Amendment #3]

(124) OAR 345-026-0105: The certificate holder and the Department of Energy shall exchange copies of all correspondence or summaries of correspondence related to compliance with statutes, rules and local ordinances on which the Council determined compliance, except for material withheld from public disclosure under state or federal law or under Council rules. The certificate holder may submit abstracts of reports in place of full reports; however, the certificate holder shall provide full copies of abstracted reports and any summarized correspondence at the request of the Department. [Amendment #3]

(125) OAR 345-026-0170: The certificate holder shall notify the Department of Energy within 72 hours of any occurrence involving the facility if:

(a) There is an attempt by anyone to interfere with its safe operation;

(b) A natural event such as an earthquake, flood, tsunami or tornado, or a human-caused event such as a fire or explosion affects or threatens to affect the public health and safety or the environment; or

(c) There is any fatal injury at the facility.

[Amendment #3]

VI. CONDITIONS RELATING TO AMENDMENT #2

(126) Prior to any disturbance in the areas of the site added in the Final Order for Amendment #2, the certificate holder shall deliver to the Department the results of a spring survey of Crossing G, conducted during the appropriate bloom time for Northern wormwood and Henderson's ricegrass. If Northern wormwood or any other protected rare plant species are observed during the spring survey, the certificate holder shall ensure that construction and operation of the facility will have no impact on the rare plant habitat. [Amendment #2]

(127) The certificate holder shall avoid any disturbance, including the placement of poles for the collector line, within 25 feet of the stream channel in the area identified as Crossing G in the Request for Amendment #2 and within a wetland area identified as "POWHX" on Figure J-1 of the site certificate application. [Amendment #2]

VII. CONDITIONS RELATING TO AMENDMENT #3

(128) With respect to any turbine constructed within a micrositing corridor approved by the Council after November 21, 2007, the certificate holder shall not locate such turbine within the setback prescribed by Section 4 of the Sherman County Wind Power Set Back Ordinance (Ordinance No. 39-2007) unless the Council has approved a variance to such setback for the turbine or the certificate holder has negotiated a setback agreement with the affected adjacent property owner and wind project developer. [Amendment #3]

(129) The certificate holder shall avoid any disturbance within 25 feet of the stream channel in the area identified as "Stream Crossing H" in the Request for Amendment #3 and shall install any collector line through the area by tunneling or drilling beneath the stream channel. [Amendment #3]

VIII. CONDITIONS RELATING TO AMENDMENT #4

The conditions in Section VIII in this Site Certificate are applicable to the addition of Solar Components. In accordance with ORS 469.300(6), preconstruction conditions may be satisfied

for the facility component or for the facility, as applicable, based on final design and configuration.

A. CONSTRUCTION/PRECONSTRUCTION CONDITIONS

(130) The certificate holder must prepare and implement a Hazardous Materials Management and Monitoring plan approved by the Department. The plan(s) must address the handling of potentially hazardous substances (as defined by ORS 465.200) during construction and operation of the facility, measures to prevent on- and off-site contamination and documentation of plan implementation. Separate plans for the construction and operation phases are acceptable. The certificate holder must use hazardous materials in a manner that protects public health, safety and the environment and must comply with all applicable local, state and federal environmental laws and regulations. [Amendment #4]

(131) The Hazardous Materials Management and Monitoring Plan shall contain the same information required for a Spill Prevention, Control and Countermeasure Plan (40 CFR 112). Whereas the SPCC Plan addresses spill prevention for oil products, the materials management and monitoring plan shall address hazardous substances. The Plan shall include operating procedures to prevent hazardous substances releases, control measures to contain hazardous substance releases, countermeasures to contain, cleanup, and mitigate hazardous substance releases, and procedures for required inspections and testing. This Plan must be submitted to the Department for review and approval prior to respective construction or operation phase of the facility. [Amendment #4]

(132) The certificate holder shall develop and implement a Spill Prevention, Control and Countermeasure (SPCC) Plan in accordance with 40 Code of Federal Regulations (CFR) 112. A copy of this plan shall be provided to the Department prior to the commencement of operation of the Biglow Solar Project and shall be updated according to the timelines provided in 40 CFR112. [Amendment #4]

(133) During construction of the solar components, the certificate holder shall follow the raptor nest buffers and disturbance-free dates recommended in the Oregon Department of Fish and Wildlife Solar Siting Guidance of March 2024, which include:

Species	Spatial Buffer	Seasonal Restriction	Early Release Date if Unoccupied
Golden eagle	0.5 – 1 mile	Feb 1 – Aug 15	May 15
Bald eagle	0.5 mile	Jan 1 – Aug 15	May 31
Ferruginous hawk**	0.5 mile	Mar 15 – Aug 15	May 31
Northern goshawk**	0.5 mile	May 1 – Aug 15	June 30
Peregrine falcon**	0.25 mile	Jan 1 – Jul 1	May 15
Swainson's hawk**	0.25 mile	Apr 1 – Aug 15	May 31
White-tailed kite	0.25 mile	Jan 1 – Aug 15	
Osprey	0.25 mile	Mar 1 – Sep 15	
Burrowing owl**	0.25 mile	Apr 1 – Aug 15	May 31
Flammulated owl**	0.25 mile	May 1 – Jul 31	June 15
Great gray owl**	0.25 mile	Apr 1 – Jul 31	May 31
Red-tailed hawk	0.10 mile	Mar 1 – Aug 15	May 31

Species	Spatial Buffer	Seasonal Restriction	Early Release Date if Unoccupied
Other hawks and owls	0.25 mile	Mar 1 – Aug 15	May 31
Dates cover territory establishment through fledging. Release dates can be used for unoccupied or failed nests. Some geographic variation exists in seasonal restriction dates, please consult with local ODFW staff. ** Indicates Oregon Conservation Strategy Species.			

The buffer and restriction dates may be modified, with Department approval, if there is an adequate physical barrier between the nest site and the construction impacts such that recommended buffer proves to be excessive.

During the year in which construction occurs, the certificate holder shall use a protocol approved by the Oregon Department of Fish and Wildlife (ODFW) to determine whether there are any active nests of these species within a half-mile of any areas that would be disturbed during construction. If a nest is occupied by any of these species after the beginning of the seasonal restriction, the certificate holder shall not engage in high-impact construction activities (activities that involve blasting, grading or other major ground disturbance) or allow high levels of construction traffic within the recommended buffer of the nest site, or such lesser distance as may be approved by the Department in the event there is an adequate physical barrier between the nest site and the construction impacts. In addition, the certificate holder shall flag the boundaries of the recommended nest buffer area and shall instruct construction personnel to avoid any unnecessary activity within the buffer area.

The certificate holder may begin or resume high impact construction activities before the ending day of the seasonal restriction if any known nest site is not occupied by the early release date. If a nest site is occupied, then the certificate holder may begin or resume high-impact construction before the ending day of the sensitive period with the approval of ODFW, after the young are fledged. The certificate holder shall use a protocol approved by ODFW to determine when the young are fledged (the young are independent of the core nest site).

Upon request by the certificate holder, the Department in consultation with ODFW may provide exceptions to this restriction. The certificate holder's request must include a justification of the request, including any actions the certificate holder will take to avoid, minimize, or mitigate impacts to the raptor and its nest.[Amendment #4]

(134) The certificate holder shall begin construction of the facility within three years after the effective date of the amended site certificate, or by MONTH DAY, 20XX. Under OAR 345-027-0037(11), the amended site certificate is effective upon execution by the Council Chair and the certificate holder. [Amendment #4]

(135) The certificate holder shall complete construction of the facility within six years of the effective date of the amended site certificate, or MONTH DAY, 20XX. The certificate holder shall promptly notify the Department of the date of completion of construction solar components and supporting facilities. [Amendment #4]

(136) Prior to the construction of solar components, the certificate holder shall submit a Final Construction Wildfire Mitigation Plan (WMP) and prior to operations of the solar components a Final Operations WMP or an Oregon PUC compliant WMP to the Department for review and approval. The WMPs shall include requirements for weather

monitoring, personnel training and emergency response and communication procedures. [Amendment #4]

(137) Prior to the construction of solar components, as applicable, the certificate holder shall identify any necessary permits normally governed by the site certificate which it plans to obtain via a third-party contractor. Certificate holder shall demonstrate that the third-party permits are obtained prior to actions regulated under the associated permit(s). [Amendment #4]

(138) Prior to construction of solar components, the certificate holder shall prepare and implement a final Comprehensive Revegetation and Soil Management Plan in consultation with the Sherman County Weed Control District and the Department. [Amendment #4]

(139) The certificate holder shall conduct all work in compliance with the NPDES 1200-C General Construction Permit, ESCP or revised ESCP, if applicable. The ESCP shall be revised if determined necessary by the certificate holder, certificate holder's contractor(s) or the Department. Any Department-required ESCP revisions shall be implemented within 14 days, unless otherwise agreed to by the Department based on a good faith effort to address erosion issues. [Amendment #4]

(140) During construction of the Solar Components, the certificate holder shall restore areas that are temporarily disturbed in accordance with the methods, monitoring procedures and success criteria described in the Comprehensive Solar Revegetation and Soil Management Plan for the Solar Components that is incorporated as Final Order on Amendment 4 as Attachment [Place Holder] and as may be amended from time to time.

(141) The certificate holder shall conduct wildlife monitoring and mitigation for the Solar Components in accordance with the Biglow Solar Project Habitat Mitigation Plan that is incorporated in the Final Order on Amendment #4 as Attachment [Placeholder] and as may be amended from time to time. [Amendment #4]

(142) Before beginning construction of the Solar Components or any phase of the facility, the certificate holder shall mitigate for impacted habitat by establishing a conservation easement for the habitat mitigation area for the life of the Solar Components. Within the habitat mitigation area for the Solar Components, the certificate holder shall improve the habitat quality in accordance with the Biglow Solar Habitat Mitigation Plan that is incorporated in the Final Order on Amendment #4 as Attachment [Placeholder] and as may be amended from time to time. [Amendment #4]

B. OPERATION CONDITIONS

(143) The certificate holder shall require onsite contractors and employees to adhere to the Construction Wildfire WMP and Operations WMP as finalized under Condition 136. The Construction WMP and Operations WMP shall be updated, as needed, to address changes in site conditions or wildfire risk at the site. [Amendment #4]

(144) During operation of the Solar Components, the certificate holder shall develop and implement a site Emergency Response Plan that informs on-site employees and others what to do in case of an emergency and that includes the locations of fire extinguishers and nearby hospitals, important telephone numbers, and first aid techniques. [Amendment #4]

(145) Prior to operation of the Solar Components, the certificate holder shall develop and implement an Operations and Maintenance Plan that outlines proper management of the

facility, including facility roles and responsibilities; preventative maintenance and asset monitoring; compliance, controls, and reporting; emergency preparedness; and long-term maintenance and operational continuity. This plan shall be reviewed and updated regularly. [Amendment #4]

(146) During operation of the Solar Components, the certificate holder shall restore areas that are temporarily disturbed during facility maintenance or repairs in accordance with the methods, monitoring procedures and success criteria described in the Comprehensive Solar Revegetation and Soil Management Plan for the Solar Components that is incorporated in Final Order on Amendment 4 as Attachment [Place Holder] and as may be amended from time to time. [Amendment #4]

IX. SUCCESSORS AND ASSIGNS

To transfer this site certificate, or any portion thereof, or to assign or dispose of it in any other manner, directly or indirectly, the certificate holder shall comply with OAR 345-027-0100.

X. SEVERABILITY AND CONSTRUCTION

If any provision of this agreement and certificate is declared by a court to be illegal or in conflict with any law, the validity of the remaining terms and conditions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the agreement and certificate did not contain the particular provision held to be invalid. In the event of a conflict between the conditions contained in this site certificate and the Council's final order, the conditions contained in this site certificate shall control.

XI. GOVERNING LAW AND FORUMF

This site certificate shall be governed by the laws of the State of Oregon. Any litigation or arbitration arising out of this agreement shall be conducted in an appropriate forum in Oregon.

XII. EXECUTION

This site certificate may be executed in counterparts and will become effective upon signature by the Chair of the Energy Facility Siting Council and the authorized representative of the certificate holder. [Amendment #1]

IN WITNESS WHEREOF, this site certificate has been executed by the State of Oregon, acting by and through its Energy Facility Siting Council, and by Portland General Electric Company. [Amendment #1]

ENERGY FACILITY SITING COUNCIL	PORTLAND GENERAL ELECTRIC COMPANY
By: _____	By: _____
~~Robert Shiprack~~ Kent Howe, Chair Oregon Energy Facility Siting Council	Print: _____
Date: _____	Date: _____

Attachment 2. Articles of Incorporation

State of Oregon

OFFICE OF THE SECRETARY OF STATE
Corporation Division

Certified Copy 729U304B7

I, LAVONNE GRIFFIN-VALADE, Secretary of State of Oregon, and Custodian of the Seal of said State, do hereby certify:

That the attached

Copy of the

Restated

Articles of Incorporation

for

PORTLAND GENERAL ELECTRIC COMPANY

is a true copy of the original document(s).

In Testimony Whereof, I have hereunto set my hand and affixed hereto the Seal of the State of Oregon.

Lavonne Griffin-Valade

LAVONNE GRIFFIN-VALADE, SECRETARY OF STATE

7/31/2023

Restated Articles of Incorporation - Business/Professional

Secretary of State - Corporation Division - 255 Capitol St. NE, Suite 151 - Salem, OR 97310-1327 - http://www.FilingInOregon.com - Phone: (503) 986-2200

FILED

MAY 07 2014

OREGON SECRETARY OF STATE

REGISTRY NUMBER: 034142-16

For office use only

In accordance with Oregon Revised Statute 192.410-192.490, the information on this application is public record. We must release this information to all parties upon request and it will be posted on our website.

Please Type or Print Legibly in Black Ink. Attach Additional Sheet if Necessary.

1) **NAME OF CORPORATION:** PORTLAND GENERAL ELECTRIC COMPANY

2) **NEW NAME OF THE CORPORATION:** (If changed) _____

3) **A COPY OF THE RESTATED ARTICLES MUST BE ATTACHED:** ☐

4) **CHECK THE APPROPRIATE STATEMENT:**

☐ The restated articles contain amendments which do not require shareholder approval. The date of the adoption of the amendments and restated articles was _____. These amendments were duly adopted by the board of directors.

■ The restated articles contain amendments which require shareholder approval. The date of the adoption of the amendments and restated articles was 05/07/14.

The vote of the shareholders was as follows:

Class or series of shares	Number of shares outstanding	Number of votes entitled to be cast	Number of votes cast FOR	Number of votes cast AGAINST
Common Stock	78,174,686	78,174,686	63,602,823	651,910

☐ The corporation has not issued any shares of stock. Shareholder action was not required to adopt the restated articles. The restated articles were adopted by the Incorporators or by the board of directors.

5) **EXECUTION:** (Must be signed by at least one officer or director.)
By my signature, I declare as an authorized authority, that this filing has been examined by me and is, to the best of my knowledge and belief, true, correct, and complete. Making false statements in this document is against the law and may be penalized by fines, imprisonment or both.

Signature: Marc S. Bocci | Printed Name: Marc S. Bocci | Title: Corporate Secretary

CONTACT NAME: (To resolve questions with this filing.)

Marc S. Bocci

PORTLAND GENERAL ELECTRIC COMPA

3414216-15184168 RSTART

FEES

Required Processing Fee $100

Processing Fees are nonrefundable. Please make check payable to "Corporation Division."

Free copies are available at FilingInOregon.com, using the Business Name Search program.

THIRD AMENDED AND RESTATED ARTICLES OF INCORPORATION OF PORTLAND GENERAL ELECTRIC COMPANY

The Articles of Incorporation, as amended, of Portland General Electric Company (the "Corporation") are hereby amended and restated under 60.451 of the Oregon Business Corporation Act (the "Act"). The date of filing of the Corporation's Articles of Incorporation was July 25, 1930.

ARTICLE I.
Name

The name of the Corporation is:

Portland General Electric Company

ARTICLE II.
Duration

The Corporation shall exist perpetually.

ARTICLE III.
Purposes

The Corporation is organized for the following purposes:

1. To construct, purchase, lease, and otherwise acquire ownership of and improve, maintain, use and operate every type and kind of real and personal property for the generation, manufacture, production and furnishing of electric energy, and to use, furnish and sell to the public, including other corporations, towns, cities and municipalities, at wholesale and retail, electric energy.

2. To engage in any lawful activity for which corporations may be organized under the Act and any amendment thereto.

3. To engage in any lawful activity and to do anything in the operation of the Corporation or for the accomplishment of any of its purposes or for the exercise of any of its powers which shall appear necessary for or beneficial to the Corporation.

The authority conferred in this Article III shall be exercised consistently with the requirements of applicable state and federal laws and regulations governing the activities of a public utility.

ARTICLE IV.
Classes of Capital Stock

The amount of the capital stock of the Corporation is:

COMMON STOCK. Common Stock of the Corporation shall consist of a class without par value consisting of 160,000,000 shares.

PREFERRED STOCK. Preferred Stock of the Corporation shall consist of a class without par value consisting of 30,000,000 shares issuable in series as hereinafter provided.

A statement of the preferences, limitations, and relative rights of each class of the capital stock of the Corporation, namely, the Preferred Stock without par value and the Common Stock, of the variations and relative rights and preferences as between series of the Preferred Stock insofar as the same are fixed by these Amended and Restated Articles of Incorporation (these "Articles") and of the authority vested in the Board of Directors of the Corporation to establish series of Preferred Stock, and to fix and determine the variations in the relative rights and preferences as between series insofar as the same are not fixed by these Articles is as follows:

PREFERRED STOCK

(a) As used in these Articles, the term "Preferred Stock" shall mean the Preferred Stock without par value. The Preferred Stock may be divided into and issued in series. Each series shall be so designated as to distinguish the shares thereof from the shares of all other series of the Preferred Stock and all other classes of capital stock of the Corporation. To the extent that these Articles shall not have established series of the Preferred Stock and fixed and determined the variations in the relative rights and preferences as between series, the Board of Directors shall have authority, and is hereby expressly vested with authority, to divide the Preferred Stock into series and, with the limitations set forth in these Articles and such limitations as may be provided by law, to fix and determine the relative rights and preferences of any series of the Preferred Stock so established. Such action by the Board of Directors shall be expressed in a resolution or resolutions adopted by it prior to the issuance of shares of each series, which resolution or resolutions shall also set forth the distinguishing designation of the particular series of the Preferred Stock established thereby. Without limiting the generality of the foregoing, authority is hereby expressly vested in the Board of Directors to fix and determine with respect to any series of the Preferred Stock:

(1) The rate of dividend;

(2) The price at which and the terms and conditions on which shares may be sold or redeemed;

(3) The amount payable upon shares in the event of voluntary liquidation and the amount payable in the event of involuntary liquidation, but such involuntary liquidation amount shall not exceed the price at which the shares may be sold as fixed in the resolution or resolutions creating the series;

(4) Sinking fund provisions for the redemption or purchase of shares; and

(5) The terms and conditions on which shares may be converted.

All shares of the Preferred Stock of the same series shall be identical except that shares of the same series issued at different times may vary as to the dates from which dividends thereon shall be cumulative; and all shares of the Preferred Stock, irrespective of series, shall constitute one and the same class of stock, shall be of equal rank, and shall be identical except as to the designation thereof, the date or dates from which dividends on shares thereof shall be cumulative, and the relative rights and preferences set forth above in clauses (1) through (5) of this subdivision (a), as to which there may be variations between different series. Except as may be otherwise provided by law, by subdivision (g) of this Article IV, or by the resolutions establishing any series of Preferred Stock in accordance with the foregoing provisions of this subdivision (a), whenever the presence, written consent, affirmative vote, or other action on the part of the holders of the Preferred Stock may be required for any purpose, such consent, vote or other action shall be taken by the holders of the Preferred Stock as a single body irrespective of series and shall be determined by weighing the vote cast for each share so as to reflect the involuntary liquidation amount fixed in the resolution or resolutions creating the series, such that each share shall have one vote per $100 of involuntary liquidation value.

(b) The holders of shares of the Preferred Stock of each series shall be entitled to receive dividends, when and as declared by the Board of Directors, out of any funds legally available for the payment of dividends, at the annual rate fixed and determined with respect to each series in accordance with subdivision (a) of this Article IV, and no more, payable quarterly on the first days of January, April, July and October in each year or on such other date or dates as the Board of Directors shall determine. Such dividends shall be cumulative in the case of shares of each series either from the date of issuance of shares of such series or from the first day of the current dividend period within which shares of such series shall be issued, as the Board of Directors shall determine, so that if dividends on all outstanding shares of each particular series of the Preferred Stock, at the annual dividend rates fixed and determined by the Board of Directors for the respective series, shall not have been paid or declared and set apart for payment for all past dividend periods and for the then current dividend periods, the deficiency shall be fully paid or dividends equal thereto declared and set apart for payment at said rates before any dividends on the Common Stock shall be paid or declared and set apart for payment. In the event more than one series of the Preferred Stock shall be outstanding, the Corporation, in making any dividend payment on the Preferred Stock, shall make payments ratably upon all outstanding shares of the Preferred Stock in proportion to the amount of dividends accumulated thereon to the date of such dividend payment. No interest, or sum of money in lieu of interest, shall be payable in respect of any dividend payment or payments which may be in arrears.

(c) In the event of any dissolution, liquidation or winding up of the Corporation, before any distribution or payment shall be made to the holders of the Common Stock, the holders of the Preferred Stock of each series then outstanding shall be entitled to be paid out of the net assets of the Corporation available for distribution to its shareholders the respective involuntary liquidation amount for each share as fixed and determined with respect to each series in accordance with subdivision (a) of this Article IV, plus in all cases unpaid accumulated dividends thereon, if any, to the date of payment, and no more, unless such dissolution, liquidation or winding up shall be voluntary, in which event the amount which such holders shall be entitled so to be paid shall be the respective voluntary liquidation amounts per share fixed and determined with respect to each series in accordance with subdivision (a) of this Article IV, and no more. If upon any dissolution, liquidation or winding up of the Corporation, whether

voluntary or involuntary, the net assets of the Corporation available for distribution to its shareholders shall be insufficient to pay the holders of all outstanding shares of Preferred Stock of all series the full amounts to which they shall be respectively entitled as aforesaid, the entire net assets of the Corporation available for distribution shall be distributed ratably to the holders of all outstanding shares of Preferred Stock of all series in proportion to the amounts to which they shall be respectively so entitled. For the purposes of this subdivision (c), any dissolution, liquidation or winding up which may arise out of or result from the condemnation or purchase of all or a major portion of the properties of the Corporation by (1) the United States Government or any authority, agency or instrumentality thereof, (2) a State of the United States or any political subdivision, authority, agency or instrumentality thereof, or (3) a district, cooperative or other association or entity not organized for profit, shall be deemed to be an involuntary dissolution, liquidation or winding up; and a consolidation, merger or amalgamation of the Corporation with or into any other corporation or corporations shall not be deemed to be a dissolution, liquidation or winding up of the Corporation, whether voluntary or involuntary.

(d) Subject to the limitations set forth in subdivision (c) of Article V, the Preferred Stock of all series, or of any series thereof, or any part of any series thereof, at any time outstanding, may be redeemed by the Corporation, at its election expressed by resolution of the Board of Directors, at any time or from time to time, at the then applicable redemption price fixed and determined with respect to each series in accordance with subdivision (a) of this Article IV. If less than all of the shares of any series are to be redeemed, the redemption shall be made either pro rata or by lot in such manner as the Board of Directors shall determine.

In the event the Corporation shall so elect to redeem shares of the Preferred Stock, notice of the intention of the Corporation to do so and of the date and place fixed for redemption shall be mailed not less than thirty days before the date fixed for redemption to each holder of shares of the Preferred Stock to be redeemed at his address as it shall appear on the books of the Corporation, and on and after the date fixed for redemption and specified in such notice (unless the Corporation shall default in making payment of the redemption price), such holders shall cease to be shareholders of the Corporation with respect to such shares and shall have no interest in or claim against the Corporation with respect to such shares, excepting only the right to receive the redemption price therefor from the Corporation on the date fixed for redemption, without interest, upon endorsement, if required, and surrender of their certificates for such shares.

Contemporaneously with the mailing of notice of redemption of any shares of the Preferred Stock as aforesaid or at any time thereafter on or before the date fixed for redemption, the Corporation may, if it so elects, deposit the aggregate redemption price of the shares to be redeemed with any bank or trust company doing business in the City of New York, N. Y., the City of Chicago, Illinois, the City of San Francisco, California, or the City of Portland, Oregon, having a capital and surplus of at least $5,000,000, named in such notice, payable on the date fixed for redemption in the proper amounts to the respective holders of the shares to be redeemed, upon endorsement, if required, and surrender of their certificates for such shares, and on and after the making of such deposit such holders shall cease to be shareholders of the Corporation with respect to such shares and shall have no interest in or claim against the Corporation with respect to such shares, excepting only the right to exercise such redemption or exchange rights, if any, on or before the date fixed for redemption as may

have been provided with respect to such shares or the right to receive the redemption price of their shares from such bank or trust company on the date fixed for redemption, without interest, upon endorsement, if required, and surrender of their certificates for such shares.

If the Corporation shall have elected to deposit the redemption moneys with a bank or trust company as permitted by this subdivision (d), any moneys so deposited which shall remain unclaimed at the end of six years after the redemption date shall be repaid to the Corporation, and upon such repayment holders of Preferred Stock who shall not have made claim against such moneys prior to such repayment shall be deemed to be unsecured creditors of the Corporation for an amount, without interest, equal to the amount they would theretofore have been entitled to receive from such bank or trust company. Any redemption moneys so deposited which shall not be required for such redemption because of the exercise, after the date of such deposit, of any right of conversion or exchange or otherwise, shall be returned to the Corporation forthwith. The Corporation shall be entitled to receive any interest allowed by any bank or trust company on any moneys deposited with such bank or trust company as herein provided, and the holders of any shares called for redemption shall have no claim against any such interest.

Except as set forth in subdivision (c) of Article V, nothing herein contained shall limit any legal right of the Corporation to purchase or otherwise acquire any shares of the Preferred Stock.

(e) The holders of shares of the Preferred Stock shall have no right to vote in the election of directors or for any other purpose except as may be otherwise provided by law, by subdivisions (f), (g) and (h) of this Article IV, or by resolutions establishing any series of Preferred Stock in accordance with subdivision (a) of this Article IV. Holders of Preferred Stock shall be entitled to notice of each meeting of shareholders at which they shall have any right to vote, but shall not be entitled to notice of any other meeting of shareholders.

(f) If at any time dividends payable on any share or shares of Preferred Stock shall be in arrears in an amount equal to four full quarterly dividends or more per share, a default in preferred dividends for the purpose of this subdivision (f) shall be deemed to have occurred, and, having so occurred, such default shall be deemed to exist thereafter until, but only until, all unpaid accumulated dividends on all shares of Preferred Stock shall have been paid to the last preceding dividend period. If and whenever a default in preferred dividends shall occur, a special meeting of shareholders of the Corporation shall be held for the purpose of electing directors upon the written request of the holders of at least 10% of the Preferred Stock then outstanding. Such meeting shall be called by the secretary of the Corporation upon such written request and shall be held at the earliest practicable date upon like notice as that required for the annual meeting of shareholders of the Corporation and at the place for the holding of such annual meeting. If notice of such special meeting shall not be mailed by the secretary within thirty days after personal service of such written request upon the secretary of the Corporation or within thirty days of mailing the same in the United States of America by registered mail addressed to the secretary at the principal office of the Corporation, then the holders of at least 10% of the Preferred Stock then outstanding may designate in writing one of their number to call such meeting and the person so designated may call such meeting upon like notice as that required for the annual meeting of shareholders and to be held at the place for the holding of such annual

meeting. Any holder of Preferred Stock so designated shall have access to the stock books of the Corporation for the purpose of causing a meeting of shareholders to be called pursuant to the foregoing provisions of this paragraph.

At any such special meeting, or at the next annual meeting of shareholders of the Corporation for the election of directors and at each other meeting, annual or special, for the election of directors held thereafter (unless at the time of any such meeting such default in preferred dividends shall no longer exist), the holders of the outstanding Preferred Stock, voting separately as herein provided, shall have the right to elect the smallest number of directors which shall constitute at least one-fourth of the total number of directors of the Corporation, or two directors, whichever shall be the greater, and the holders of the outstanding shares of Common Stock, voting as a class, shall have the right to elect all other members of the Board of Directors, anything herein or in the Bylaws of the Corporation to the contrary notwithstanding. The terms of office, as directors, of all persons who may be directors of the Corporation at any time when such special right to elect directors shall become vested in the holders of the Preferred Stock shall terminate upon the election of any new directors to succeed them as aforesaid.

At any meeting, annual or special, of the Corporation, at which the holders of Preferred Stock shall have the special right to elect directors as aforesaid, the presence in person or by proxy of the holders of a majority of the Preferred Stock then outstanding shall be required to constitute a quorum of such stock for the election of directors, and the presence in person or by proxy of the holders of a majority of the Common Stock then outstanding shall be required to constitute a quorum of such stock for the election of directors; provided, however, that the absence of a quorum of the holders of either stock shall not prevent the election at any such meeting or adjournment thereof of directors by the other stock if the necessary quorum of the holders of such other stock shall be present at such meeting or any adjournment thereof; and, provided further, that in the absence of a quorum of holders of either stock a majority of the holders of such stock who are present in person or by proxy shall have power to adjourn the election of the directors to be elected by such stock from time to time, without notice other than announcement at the meeting, until the requisite quorum of holders of such stock shall be present in person or by proxy, but no such adjournment shall be made to a date beyond the date for the mailing of the notice of the next annual meeting of shareholders of the Corporation or special meeting in lieu thereof.

So long as a default in preferred dividends shall exist, any vacancy in the office of a director elected by the holders of the Preferred Stock may be filled at any meeting of shareholders, annual or special, for the election of directors held thereafter, and a special meeting of shareholders, or of the holders of shares of the Preferred Stock, may be called for the purpose of filling any such vacancy. So long as a default in preferred dividends shall exist, any vacancy in the office of a director elected by the holders of the Common Stock may be filled by majority vote of the remaining directors elected by the holders of Common Stock.

If and when the default in preferred dividends which permitted the election of directors by the holders of the Preferred Stock shall cease to exist, the holders of the Preferred Stock shall be divested of any special right with respect to the election of directors, and the voting power of the holders of the Preferred Stock and of the holders of the Common Stock shall revert to the status existing before the first dividend payment date on which dividends on the Preferred Stock were not paid in full, subject to

revesting in the event of each and every subsequent like default in preferred dividends. Upon the termination of any such special right, the terms of office of all persons who may have been elected directors by vote of the holders of the Preferred Stock pursuant to such special right shall forthwith terminate, and the resulting vacancies shall be filled by the majority vote of the remaining directors.

(g) So long as any shares of the Preferred Stock shall be outstanding, the Corporation shall not without the written consent or affirmative vote of the holders of at least two-thirds of the Preferred Stock then outstanding, (1) create or authorize any new stock ranking prior to the Preferred Stock as to dividends or upon dissolution, liquidation or winding up, or (2) amend, alter or repeal any of the express terms of the Preferred Stock then outstanding in a manner substantially prejudicial to the holders thereof. Notwithstanding the foregoing provisions of this subdivision (g), if any proposed amendment, alteration or repeal of any of the express terms of any outstanding shares of the Preferred Stock would be substantially prejudicial to the holders of shares of one or more, but not all, of the series of the Preferred Stock, only the written consent or affirmative vote of the holders of at least two-thirds of the total number of outstanding shares of all series so affected shall be required. Any affirmative vote of the holders of the Preferred Stock, or of any one or more series thereof, which may be required in accordance with the foregoing provisions of this subdivision (g), upon a proposal to create or authorize any stock ranking prior to the Preferred Stock or to amend, alter or repeal the express terms of outstanding shares of the Preferred Stock or of any one or more series thereof in a manner substantially prejudicial to the holders thereof may be taken at a special meeting of the holders of the Preferred Stock or of the holders of one or more series thereof called for the purpose, notice of the time, place and purposes of which shall have been given to the holders of the shares of the Preferred Stock entitled to vote upon any such proposal, or at any meeting, annual or special, of the shareholders of the Corporation, notice of the time, place and purposes of which shall have been given to holders of shares of the Preferred Stock entitled to vote on such a proposal.

(h) So long as any shares of the Preferred Stock shall be outstanding, the Corporation shall not, without the written consent or affirmative vote of the holders of at least a majority of the Preferred Stock then outstanding:

(1) issue any shares of Preferred Stock, or of any other class of stock ranking prior to or on a parity with the Preferred Stock as to dividends or upon dissolution, liquidation or winding up, unless (a) the net income of the Corporation available for the payment of dividends for a period of twelve consecutive calendar months within the fifteen calendar months immediately preceding the issuance of such shares (including, in any case in which such shares are to be issued in connection with the acquisition of new property, the net income of the property so to be acquired, computed on the same basis as the net income of the Corporation) is at least equal to two times the annual dividend requirements on all shares of the Preferred Stock, and on all shares of all other classes of stock ranking prior to or on a parity with the Preferred Stock as to dividends or upon dissolution, liquidation or winding up, which will be outstanding immediately after the issuance of such shares, including the shares proposed to be issued, and (b) the gross income (defined as the sum of net income and interest charges, to securities evidencing indebtedness deducted in arriving at such net income) of the Corporation available for the payment of interest for a period of twelve consecutive calendar months within the fifteen calendar months immediately preceding the issuance of such shares (including, in any case in

which such shares are to be issued in connection with the acquisition of new property, the gross income, as heretofore defined, of the property so to be acquired, computed on the same basis as the gross income, as heretofore defined, of the Corporation) is at least equal to one and one-half times the aggregate of the annual interest requirements on all securities evidencing indebtedness of the Corporation, and the annual dividend requirements on all shares of the Preferred Stock and on all shares of all other classes of stock ranking prior to or on a parity with the Preferred Stock as to dividends or upon dissolution, liquidation or winding up, which will be outstanding immediately after the issuance of such shares, including the shares proposed to be issued; or

(2) issue any shares of the Preferred Stock, or of any other class of stock ranking prior to or on a parity with the Preferred Stock as to dividends or upon dissolution, liquidation or winding up, unless the aggregate of the capital of the Corporation applicable to the Common Stock and the surplus of the Corporation (paid-in, earned or other, if any) shall be not less than the aggregate amount payable on the involuntary dissolution, liquidation, or winding up of the Corporation on all shares of the Preferred Stock, and on all shares of all other classes of stock ranking prior to or on a parity with the Preferred Stock as to dividends or upon dissolution, liquidation or winding up, which will be outstanding immediately after the issuance of such shares, including the shares proposed to be issued; provided, however, that if, for the purposes of meeting the requirements of this subparagraph (2), it shall become necessary to take into consideration any surplus of the Corporation, the Corporation shall not thereafter pay any dividends on shares of the Common Stock which would result in reducing the aggregate of the capital of the Corporation applicable to the Common Stock and the surplus of the Corporation to an amount less than the aggregate amount payable on involuntary dissolution, liquidation or winding up of the Corporation, on all shares of the Preferred Stock and of any stock ranking prior to or on a parity with the Preferred Stock, as to dividends or upon dissolution, liquidation or winding up, at the time outstanding.

In any case where it would be appropriate, under generally accepted accounting principles, to combine or consolidate the financial statements of any predecessor or subsidiary of the Corporation with those of the Corporation, the foregoing computations may be made on the basis of such combined or consolidated financial statements. Any affirmative vote of the holders of the Preferred Stock which may be required in accordance with the foregoing provisions of this subdivision (h) may be taken at a special meeting of the holders of the Preferred Stock called for the purpose, notice of the time, place and purposes of which shall have been given to the holders of the outstanding shares of the Preferred Stock, or at any meeting, regular or special, of the shareholders of the Corporation, notice of the time, place and purposes of which shall have been given to the holders of the outstanding shares of the Preferred Stock.

COMMON STOCK

(i) Subject to the limitations set forth in subdivision (b) of this Article IV (and subject to the rights of any class of stock hereafter authorized) dividends may be paid upon the Common Stock when and as declared by the Board of Directors of the Corporation out of any funds legally available for the payment of dividends.

(j) Subject to the limitations set forth in subdivision (c) of this Article IV (and subject to the rights of any other class of stock hereafter authorized), upon any dissolution, liquidation or winding up of the Corporation, whether voluntary or involuntary, the net assets of the Corporation shall be distributed ratably to the holders of the Common Stock.

(k) Subject to the limitations set forth in subdivisions (f), (g), and (h) of this Article IV (and subject to the rights of any class of stock hereafter created), and except as may be otherwise provided by law, the holders of the Common Stock shall have the exclusive right to vote for the election of directors and for all other purposes.

(l) Upon the issuance for money or other consideration of any shares of capital stock of the Corporation, or of any security convertible into capital stock of the Corporation, no holder of shares of the capital stock, irrespective of the class or kind thereof, shall have any preemptive or other right to subscribe for, purchase, or receive any proportionate or other amount of such shares of capital stock, or such security convertible into capital stock, proposed to be issued; and the Board of Directors may cause the Corporation to dispose of all or any of such shares of capital stock, or of any such security convertible into capital stock, as and when said Board may determine, free of any such right, either by offering the same to the Corporation's then shareholders or by otherwise selling or disposing of such shares or other securities, as the Board of Directors may deem advisable.

(m) The Corporation from time to time, with the approving vote of the holders of at least a majority of its then outstanding shares of Common Stock, may authorize additional shares of its capital stock, with or without nominal or par value, including shares of such other class or classes, and having such designations, preferences, rights, and voting powers, or restrictions or qualifications thereof, as may be approved by such vote and be stated in amended or restated articles of incorporation executed and filed in the manner provided by law.

(n) The provisions of subdivision (l) and of this subdivision (n) of this Article IV shall not be changed unless the holders of at least a majority of the outstanding shares of Common Stock shall consent thereto in writing, or by vote at a meeting in the notice of which action on the proposed change shall have been set forth.

ARTICLE V.
Designation of Series Preferred Stock

7.75% SERIES CUMULATIVE PREFERRED STOCK, WITHOUT PAR VALUE.

7.75% Series Cumulative Preferred Stock, Without Par Value of the Corporation shall consist of 300,000 shares. Such series of Preferred Stock is hereinafter referred to as "Preferred Stock of the First Series, Without Par Value." Shares of Preferred Stock of the First Series, Without Par Value shall have the following relative rights and preferences in addition to those fixed in Article IV above:

(a) The rate of dividend payable upon shares of Preferred Stock of the

First Series, Without Par Value shall be 7.75 percent per annum. Dividends upon shares of Preferred Stock of the First Series, Without Par Value shall be cumulative from the date of original issue and shall be payable on the 15th day of January, April, July and October of each year thereafter.

(b) Subject to the provisions of subdivision (d) of Article IV of the Articles, prior to June 15, 2002, and prior to June 15 in each year thereafter until June 15, 2006, so long as any of the Preferred Stock of the First Series, Without Par Value shall remain outstanding, the Corporation shall deposit with its Transfer Agent, as a Sinking Fund for the Preferred Stock of the First Series, Without Par Value, an amount sufficient to redeem a minimum of 15,000 shares of the Preferred Stock of the First Series, Without Par Value, plus an amount equal to dividends accrued thereon to each such June 15 and, in addition, the Corporation may, at its option, prior to each such June 15, deposit an amount sufficient to retire through the operation of the Sinking Fund not more than 15,000 additional shares of Preferred Stock of the First Series, Without Par Value, but the right to make such optional deposit shall not be cumulative and shall not reduce any subsequent mandatory Sinking Fund payment for the Preferred Stock of the First Series, Without Par Value, and prior to June 15, 2007 the Corporation shall deposit with its Transfer Agent, as the final Sinking Fund payment, an amount sufficient to redeem all shares of the Preferred Stock of the First Series, Without Par Value outstanding on June 15, 2007. The Corporation shall not declare or pay or set apart for, or make or order any other distribution in respect of, or purchase or otherwise acquire for value any shares of, the Common Stock of the Corporation, or any class of stock as to which the Preferred Stock of the Corporation has priority as to payments of dividends, unless all amounts required to be paid or set aside for any Sinking Fund payment to retire shares of the Preferred Stock of the First Series, Without Par Value, shall have been paid or set aside. The Corporation's Transfer Agent shall, in accordance with the provisions set forth herein, apply the moneys in the Sinking Fund to redeem (i) pro rata, or by lot if so determined by the Board of Directors, on June 15, 2002, and on June 15 in each year thereafter until June 15, 2006, shares of the Preferred Stock of the First Series, Without Par Value, and (ii) on June 15, 2007 all outstanding shares of Preferred Stock of the First Series, Without Par Value, in each case at One Hundred Dollars ($100.00) per share plus dividends accrued to the date of redemption. The Corporation may, upon notice to its Transfer Agent prior to a date 45 days prior to June 15 in any year, commencing with the year 2002 through and including the year 2006, in which the Corporation shall be obligated to redeem shares of the Preferred Stock of the First Series, Without Par Value through the operation of the Sinking Fund, elect to reduce its obligation in respect of the redemption of shares required to be redeemed pursuant to the Sinking Fund by directing that any shares of the Preferred Stock of the First Series, Without Par Value previously purchased by the Corporation (other than shares purchased pursuant to the operation of the Sinking Fund or previously applied as a credit against the Sinking Fund) shall be applied as a credit, in whole or in part, in an amount equal to the aggregate liquidation value of the shares so applied, against the aggregate liquidation value of the shares required to be redeemed in such year pursuant to the operation of the Sinking Fund.

(c) The Preferred Stock of the First Series, Without Par Value shall not be subject to redemption, except pursuant to the Sinking Fund established for such Series.

(d) In the event of (i) any voluntary dissolution, liquidation or winding up of the Corporation, holders of the Preferred Stock of the First Series, Without Par Value shall be entitled to be paid out of the net assets of the Corporation available for distribution to its shareholders One Hundred Dollars ($100.00) per share, plus unpaid

accumulated dividends thereon, if any, to the date of payment, and no more, and (ii) any involuntary dissolution, liquidation or winding up of the Corporation, holders of the Preferred Stock of the First Series, Without Par Value shall be entitled to be paid out of the net assets of the Corporation One Hundred Dollars ($100.00) per share, plus unpaid accumulated dividends thereon, if any, to the date of payment, and no more.

ARTICLE VI.
Vacancy on Board of Directors

Any vacancy occurring on the Board of Directors, including a vacancy created by reason of an increase in the number of directors, may be filled by the affirmative vote of a majority of directors then in office, although less than a quorum, provided that so long as a default in preferred dividends shall exist, any vacancy in the office of a director elected by the holders of the Preferred Stock may be filled only as provided in subdivision (f) of Article IV.

ARTICLE VII.
Limitation of Liability

To the fullest extent permitted by law, no director of the Corporation shall be personally liable to the Corporation or its shareholders for monetary damages for conduct as a director. No amendment or repeal of this provision shall adversely affect any right or protection of a director existing at the time of such amendment or repeal. No change in the law shall reduce or eliminate the right and protections applicable at the time this provision became effective unless the change in law shall specifically require such reduction or elimination. If the law is amended, after this Article VII shall become effective, to authorize corporate action further eliminating or limiting the personal liability of directors, officers, employees or agents of the Corporation, then the liability of directors, officers, employees or agents of the Corporation shall be eliminated or limited to the fullest extent permitted by the law, as so amended.

ARTICLE VIII.
Indemnification

The Corporation may indemnify to the fullest extent permitted by law any person who is made or threatened to be made a party to, witness in, or otherwise involved in, any action, suit, or proceeding, whether civil, criminal, administrative, investigative, or otherwise (including an action, suit, or proceeding by or in the right of the Corporation) by reason of the fact that the person is or was a director, officer, employee or agent of the Corporation or any of its subsidiaries, or a fiduciary within the meaning of the Employee Retirement Income Security Act of 1974, as amended, with respect to any employee benefit plan of the Corporation or any of its subsidiaries, or serves or served at the request of the Corporation as a director, officer, employee or agent, or as a fiduciary of an employee benefit plan, of another corporation, partnership, joint venture, trust or other enterprise. Any indemnification provided pursuant to this Article VIII shall not be exclusive of any rights to which the person indemnified may otherwise be entitled under any provision of articles of incorporation, bylaws, agreement, statute, policy of insurance, vote of shareholders or Board of Directors, or otherwise.

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ARTICLE IX.
Shareholder Action Without a Meeting

Except as otherwise provided under these Articles of Incorporation and applicable law, and subject to restrictions on the taking of shareholder action without a meeting under applicable law or rules of a national securities association or exchange, action required or permitted by the Act to be taken at a shareholders' meeting may be taken without a meeting if the action is taken by shareholders having not less than the minimum number of votes that would be necessary to take such action at a meeting at which all shareholders entitled to vote on the action were present and voted.

ARTICLE X.
Majority Voting in Uncontested Elections

Except as otherwise provided under these Articles of Incorporation and applicable law, in any election of directors of the Corporation at a meeting of shareholders at which a quorum is present, each director shall be elected if the number of votes cast "for" the director exceeds the number of votes cast "against" the director; provided, however, that directors shall be elected by a plurality of the votes cast at any meeting of shareholders for which the Secretary of the Corporation determines that the number of nominees exceeds the number of directors to be elected as of the date seven days prior to the scheduled mailing date of the Corporation's definitive proxy statement for such meeting.

Attachment 3. Property Owner List

Account	Map Taxlot	Owner	In Care Of	Mailing Address	City, State Zip
356	02N17E00003300	FIELDS, JOHN & NANCY		PO BOX 48	WASCO, OR 97065
357	02N17E00003400	SKILES, SHAWN		PO BOX 32	DUFUR, OR 97021
371	02N17E00004800	SKILES, SHAWN		PO BOX 32	DUFUR, OR 97021
380	02N17E00004900	MOORE, PATTI		PO BOX 191	MORO, OR 97039
395	02N18E00001000	R&B SVENSON SFR LIVING TRUST	MACNAB, HARRY	PO BOX 405	WASCO, OR 97065
400	02N18E00001400	MACNAB INC	MCCULLOUGH, J KEVIN ETAL	PO BOX 194	WASCO, OR 97065
413	02N18E00001500	FIELDS, JOHN & NANCY		PO BOX 48	WASCO, OR 97065
414	02N18E00001600	SCHARF, R & A LLC		7695 TUCKER ROAD	AMITY, OR 97101
415	02N18E00001700	SCHARF, R & A LLC		7695 TUCKER RD	AMITY, OR 97101
416	02N18E00001800	SCHARF, R & A LLC		7695 TUCKER RD	AMITY, OR 97101
417	02N18E00003600	WEIR, JAMES MEMORIAL TRUST	MCKINNEY, KIM	70542 MCKINNEY ROAD	WASCO, OR 97065
4016	02N18E00003700	THOMAS, REINE MARLENE	HAYES, CASEY THOMAS	9419 PAGODA TREE LANE	SAN DIEGO, CA 92127
419	02N18E00003800	SCHARF, R & A LLC		7695 TUCKER ROAD	AMITY, OR 97101
420	02N18E00003900	SCHARF, R & A LLC		7695 TUCKER ROAD	AMITY, OR 97101
421	02N18E00004000	SCHARF, R & A LLC		7695 TUCKER ROAD	AMITY, OR 97101
425	02N18E00004100	MACNAB, GARY J		PO BOX 251	WASCO, OR 97065
4017	02N18E00004200	THOMAS, REINE MARLENE	HAYES, CASEY THOMAS	9419 PAGODA TREE LANE	SAN DIEGO, CA 92127
434	02N18E00004300	SCHARF, R & A LLC		7695 TUCKER ROAD	AMITY, OR 97101
3939	02N18E00004302	PORTLAND GENERAL ELECTRIC	PROPERTY SERVICES MANAGER	121 SW SALMON ST 1WTC0404	PORTLAND, OR 97204
3940	02N18E00004303	PORTLAND GENERAL ELECTRIC	PROPERTY SERVICES MANAGER	121 SW SALMON ST 1WTC0404	PORTLAND, OR 97204
435	02N18E00004400	SCHARF, R & A LLC		7695 TUCKER ROAD	AMITY, OR 97101
436	02N18E00004500	SHERMAN COUNTY SCHOOL DISTRICT	EXEMPT	PO BOX 66	WASCO, OR 97065
438	02N18E00004600	DECKER, DIANE RENEE		4202 "L" CIRCLE	WASHOUGAL, WA 98671
439	02N18E00004700	GRAY, BRETT L & TRENA D		PO BOX 325	WASCO, OR 97065
440	02N18E00004800	GRAY, BRETT L & TRENA D		PO BOX 325	WASCO, OR 97065
441	02N18E00004900	FRIDLEY, BARBARA ANN TRUSTEE		435 #4 ROAD	GOLDENDALE, WA 98620
393	02N18E0000800	SCHARF, R & A LLC		7695 TUCKER RD	AMITY, OR 97101

Biglow Canyon Wind Farm Request for Amendment 4

Attachment 3
Figure 1
Taxlots

SHERMAN COUNTY, OR

02N18E00001000
02N18E0000800
02N18E00001800
02N18E00001800
02N18E00001500
02N18E00001700
02N18E00001600
02N18E00001700
02N17E00003300
02N18E00001400
02N18E00003800
02N18E00003700
02N18E00003700
02N17E00003300
02N18E00001400
02N18E00003600
02N18E00003900
02N17E00003400
02N18E00004000
02N18E00003600
02N18E00004000
02N18E00003900
02N18E00004303
02N18E00004302
02N18E00004400
02N18E00004900
02N18E00004300
02N18E00004400
02N17E00004800
02N18E00004500
02N17E00004900
02N18E00004100
02N18E00004200
02N18E00004700
02N18E00004800
02N18E00004600

Gilliam County
Sherman County

- Site Boundary Subject to RFA 4
- Sherman County Taxlot Boundary
- County Boundary
- City/Town

*Tax lot boundary data obtained from Sherman County on 11/19/2025

TETRA TECH

PGE

Reference Map

N

1:30,000

WGS 1984 UTM Zone 10N

0 0.5 1 2 Miles

NOT FOR CONSTRUCTION

\\tt.local\GIS\US\CES\Projects\PDX\BrightNight\BiglowCanyon\Maps___fRFA4\Taxlots\PGE_BiglowCanyon_Taxlots_11i7i_20251119.aprx

Attachment 4. Division 21 Exhibits

Exhibits G-DD are provided as individual files

Attachment 5. Operations and Maintenance Plan Framework for Solar Components

Operations and Maintenance Plan Framework for Solar Components

Biglow Canyon Wind Farm
Request for Amendment 4
December 2025

Prepared for

Portland General Electric Company

Prepared by

TETRA TECH

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Acronyms and Abbreviations

BCWF	Biglow Canyon Wind Farm
BESS	battery energy storage system
BIGL	BIGL bn, LLC
BMS	battery management system
Certificate Holder, or PGE	Portland General Electric Company
EFSC	Energy Facility Siting Council
EOP	Emergency Operations Response Plan
EPCRA	Emergency Planning and Community Right-to-Know Act
MV	medium voltage
O&M	operations and maintenance
ODOE	Oregon Department of Energy
PV	photovoltaic
QA/QC	quality assurance/quality control
RFA 4	Request for Amendment 4
SCADA	supervisory control and data acquisition
WMP	Wildfire Mitigation Plan

1.0 Introduction

This draft outline of the Operations and Maintenance (O&M) Plan for the amended Biglow Canyon Wind Farm (BCWF) integrates the Solar Components as identified in the BCWF Request for Amendment 4 (RFA 4) into the existing wind facility. It has been jointly developed by Portland General Electric Company (PGE; the Certificate Holder) and BIGL bn, LLC (BIGL), a subsidiary of BrightNight, LLC, to establish the preliminary framework for how the Solar Components of the Amended BCWF will be operated, maintained, and managed in compliance with the Site Certificate and applicable regulatory standards.

This O&M Plan applies exclusively to the Solar Components and associated infrastructure introduced through the BCWF RFA 4. It does not govern the O&M of the existing wind energy infrastructure, which continues to be managed under the previously coordinated PGE Operational Safety Monitoring Program. The O&M Plan reflects lessons learned from legacy wind operations at BCWF and current best practices for utility-scale solar and storage projects.

The O&M Plan framework described in Section 3.0 outlines the structure of operational responsibilities, long-term maintenance protocols, quality assurance processes, environmental compliance measures, and integration with emergency response and monitoring systems. The Certificate Holder will provide an O&M Plan that will use this framework to further detail the specific actions required to operate and maintain the Solar Components. The final O&M plan will be submitted to the Oregon Department of Energy (ODOE) prior to the start of operation of the Solar Components.

The final O&M Plan will reference and incorporate several other technical and site management plans relevant to operations and compliance for the Solar Components at the amended BCWF. These include, but are not limited to, the following plans developed for the BCWF RFA 4:

- The standalone Emergency Operations Response Plan (EOP) specific to solar and battery energy storage system (BESS) components;
- The Construction-phase Wildfire Mitigation Plan (WMP) and the Operations-phase WMP, which outline prevention and response protocols for wildfire risk during all project phases;
- The Comprehensive Solar Revegetation and Soil Management Plan, which details vegetation establishment, monitoring, and long-term maintenance;
- The Dust Abatement Plan, which governs dust control measures during both construction and operations; and
- Other resource-specific plans (e.g., the Decommissioning Plan, Spill Prevention and Control protocols) as required by the Site Certificate.

These documents will be cross-referenced with the final O&M Plan to ensure consistent implementation and clarity of responsibilities. The final O&M Plan will remain a living document, subject to regular review and revision in response to design changes, regulatory updates, and lessons learned during implementation.

2.0 Facility Partnership: Roles and Responsibilities

The Amended BCWF reflects a project delivery model that combines PGE's regulatory responsibility and long-term ownership with development and technical execution support from BIGL. This structure is designed to ensure compliance with Site Certificate conditions while leveraging external technical expertise to deliver the proposed Solar Components efficiently and to current industry standards.

PGE, as the Certificate Holder, retains ultimate oversight and responsibility for the Amended BCWF, including the Solar Components as outlined in RFA 4. BIGL has been engaged to support the initial development and construction of these components under a Build Transfer Agreement and will also provide O&M management services for a minimum of the first 5 years of project operation. This approach allows for continuity between construction and early stage operation, while ensuring that all long-term operational accountability remains with PGE.

BrightNight and its subsidiary BIGL will implement a long-term O&M strategy grounded in industry best practices, internal experience, and a robust safety-first culture. While specific vendors have not yet been selected, BrightNight's team draws on a strong national track record in solar and battery storage project delivery and management. The Solar Components of the Amended BCWF will be supported by comprehensive O&M protocols that include scheduled preventive maintenance, real-time monitoring, remote diagnostics, and rapid response to equipment issues. BrightNight's O&M management program, which emphasizes cradle-to-grave execution, 24/7 visibility into system performance, and continuous learning, will guide all operational phases. Quality assurance will be embedded through stringent contracting standards, rigorous design-phase safety reviews, and direct oversight by experienced internal personnel. Over the first 5 years of the project, BIGL will serve as the primary entity responsible for oversight of day-to-day maintenance performed by an experienced, qualified O&M provider and performance monitoring, while PGE's role will be defined in coordination with project milestones, interconnection requirements, North American Electric Reliability Corporation compliance, and long-term asset management planning.

BrightNight is committed to working in partnership with qualified local vendors whenever possible, fostering regional economic benefits and ensuring on-the-ground responsiveness throughout the project's operational life. All third-party vendors, whether local or national, will be selected through a rigorous procurement process that evaluates technical qualifications, safety performance, environmental compliance, and proven experience with utility-scale solar and battery storage facilities. Selected vendors will be required to adhere to industry best practices, such as:

- Implementing detailed preventive maintenance schedules,
- Providing trained and certified personnel,
- Using real-time monitoring and fault detection systems,
- Following all original equipment manufacturers' maintenance and service guidelines,
- Maintaining transparent documentation and reporting protocols,
- Using digital maintenance management systems,
- Conducting regular quality assurance/quality control (QA/QC) inspections,

- Establishing clear escalation procedures for unplanned outages, and
- Participating in site-specific safety trainings and continuous improvement processes.

BrightNight is also acutely aware of the community concerns stemming from historical O&M challenges at the BCWF. Based on conversations with local stakeholders, a key feature of the O&M management strategy, though not highly technical, demonstrates the commitment to maintaining consistent communication with community members over the life of the BCWF Solar Components. The Project Developer and Certificate Holder will provide direct contact information and conduct regular check-ins to ensure residents feel empowered to raise questions or concerns. Any issues brought forward will be relayed promptly to the appropriate O&M teams for timely response and resolution. While BrightNight and PGE do not anticipate concerns of this nature, we believe creating a clear, accessible escalation path is an important part of building lasting community trust.

This structured approach ensures that any vendor engaged in the Amended BCWF will operate with the same high standards of safety, reliability, and performance that define BrightNight's operational philosophy.

This partnership structure does not alter the Certificate Holder's regulatory obligations or diminish its responsibility for compliance with the Energy Facility Siting Council (EFSC) and other applicable state and federal requirements. Rather, it provides a defined and managed pathway for project delivery that integrates third-party expertise into a framework that remains under PGE's control. Any third-party permits associated with construction activities will be secured through BIGL or its contractors but will be limited to standard, project-level requirements (e.g., encroachment, transport, building permits) and do not change the scope or structure of the existing site certificate.

Overall, the division of responsibilities between PGE and BIGL maintains clear regulatory accountability while enabling technically competent execution of the amended facility. This model is consistent with industry practices for utility-owned renewable infrastructure and is expected to support a timely and orderly expansion of the BCWF site in accordance with certificate conditions.

3.0 Integrated Operations and Maintenance Plan Framework

The Certificate Holder will submit a final version of the O&M Plan to ODOE prior to the commencement of operations. This Plan is intended to meet regulatory obligations, and to serve as the foundational framework guiding day-to-day operations of the Solar Components at the Amended BCWF.

To ensure consistency between compliance documentation and real-world implementation, the Plan will be updated as needed to fully incorporate the procedures, protocols, and tools adopted by the selected long-term O&M service provider. This integrated approach is designed to maintain a single, authoritative document that governs both regulatory compliance and operational execution, which eliminates the risk of conflicting or duplicative guidance.

3.1 Purpose and Applicability

The framework described in this section outlines the intended procedures for managing and maintaining the Solar Components of the Amended BCWF. It incorporates requirements from the Site Certificate, applicable codes, and protocols from the EOP, Decommissioning Plan, and supporting exhibits. This Plan applies to the Certificate Holder, BIGL, its contractors, and subcontractors. The final O&M Plan will be a living document. It shall be reviewed annually and revised in coordination with design changes, operational updates, or regulatory amendments.

3.2 Facility Description and Roles

The Amended BCWF includes legacy wind infrastructure and new solar photovoltaic (PV) and BESS systems. These additions are constructed under a Build Transfer Agreement by BIGL, with PGE retaining long-term ownership and regulatory oversight as the Certificate Holder.

- The Biglow Solar Components will be attended by staff, with an O&M building to support facility operations.
- Initial O&M management services for solar and BESS components will be performed by BIGL for 5 years.

3.3 Design and Equipment Selection

The Certificate Holder and BIGL are going through the design and equipment selection process. During final design, BIGL will consider all solar technologies available to ensure the most efficient and productive solar array layout and BESS configuration. The final O&M plan will incorporate O&M activities specific to the equipment selected, based on the manufacturers' instructions.

3.4 Preventative Maintenance and Asset Monitoring

BIGL will identify preventative maintenance measures and supporting equipment monitoring efforts to ensure safe and reliable operation of the facility.

3.4.1 Substation

- Thermal imaging for termination and buswork
- Visual inspection of structure foundation and conduit
- Lubrication of moving parts (breakers, switches, etc.)
- Cooling system checks
- Control room inspections visual and tests
- Label and nameplate check
- Vegetation management

3.4.2 PV System

- Routine module inspections and thermal imaging
- Torque checks per manufacturers recommendations
- Panel washing with water use logs (per Exhibit O limits)

- Annual and/or semiannual visual inspection of inverters, combiner boxes or load break disconnects, trackers, and all major equipment
- SCADA tests and inspections
- Vegetation management

3.4.3 BESS

- Quarterly inspections of power conversion system units, heating, ventilation, and air conditioning, battery management system (BMS), and fire suppression systems
- SCADA/BMS remote monitoring for anomalies
- Response procedures tied to EOP protocols for thermal runaway (EOP Section 3.2.1)
- Vegetation management

3.5 Compliance, Controls, and Reporting

The Certificate Holder and BIGL will implement O&M practices that support compliance with applicable regulatory requirements and Site Certificate conditions. This will include operational controls, oversight procedures, and alignment with supporting plans that address vegetation management, spill prevention, wildfire mitigation, air and water quality, and other environmental and safety considerations.

Compliance measures will be scaled to site activities and updated as operations evolve. Documentation of inspections, incidents, and maintenance activities will be maintained. Reporting will follow applicable requirements and timeframes outlined in the Site Certificate and coordinating agency permits.

This section will be updated in the final O&M Plan to reflect specific commitments based on Site Certificate conditions and reporting requirements identified by ODOE and coordinating agencies. The final version will define required reporting content, frequencies, responsible parties, and coordination procedures to demonstrate ongoing compliance.

3.6 Emergency Preparedness Integration

The Certificate Holder will take the following actions to address emergency preparedness:

- Inspect and test all safety equipment.
- Review and update the EOP regularly, and ensure all personnel are fully trained in emergency response.
- Perform all Spill Prevention, Control, and Countermeasure Plan requirements, including maintaining spill kits.
- Develop and maintain a Hazardous Materials Management Plan if required by state or federal regulations.
- If applicable, prepare and maintain an Emergency Planning and Community Right-to-Know Act (EPCRA) Tier I or II form, plus a list and quantities of chemicals that exceed reporting thresholds for EPCRA Tier 2.

- Conduct an audit that includes a review of site compliance with the facility's safety program and onsite observation for proper implementation of safety policies, including Lock Out-Tag Out, and a review of the facility's safety program and any recommended revisions.
- Perform a root cause analysis, corrective actions taken, and recommended corrective work related to injuries or illness requiring medical attention other than first aid, injuries or illness requiring restricted duty or days away from work, or a fatality.
- Notify the operator as soon as possible, not to exceed 1 hour, of any of the following events:
    1) Emergency responders contacted for an emergency or law enforcement response.
    2) Injury on site requiring medical attention more than first aid.
    3) Unplanned outage of one or more medium-voltage (MV) collection or high-voltage circuits.
    4) Onsite fire.
    5) Conditions that necessitate an evacuation of onsite personnel.
    6) Awareness of an impending weather event that has a reasonable probability of causing significant damage or any of the preceding 1) through 5) events.

3.7 Contractor and Staff Oversight

BrightNight, on behalf of PGE, will oversee and facilitate the O&M of the BCWF Solar and BESS Components with an O&M service provider experienced in operating and maintaining large-scale PV solar systems and balance-of-plant systems for a large-scale BESS. There will be a long-term service agreement with the BESS supplier. The O&M service provider will be responsible for the operation of the Solar Components, maintenance of the Facility up to the point of interconnection, and maintenance of equipment/circuits from the BESS inverter AC output terminals to the point of interconnection. The O&M service provider's scope will cover equipment, including the PV array, PV system inverters, low-voltage cables, MV transformers (including auxiliary transformers), MV feeders, MV switchgear, site meters, and the O&M building equipment.

4.0 Long-term Maintenance and Operational Continuity

To support the operational life of the Solar Components, the Certificate Holder has developed a long-term maintenance and operations framework that evolves over time and ensures continuous compliance with site certificate conditions.

Years 1–5: BIGL will lead O&M management under the Build Transfer Agreement. BIGL's scope will include preventive maintenance scheduling and vendor oversight.

Post-Year 5: PGE will assume full O&M responsibilities, integrating solar and BESS oversight into its internal asset management systems. This transition will be guided by a detailed handover plan including training, document transfer, and performance reviews conducted in Year 4.

Continuity of Practice: Regardless of ownership stage, O&M will be conducted in accordance with procedures established in this document, including vendor management,

EOP training, and incident reporting protocols. Performance metrics and component reliability will be tracked in PGE's asset management software and reviewed annually.

4.1 Personnel and Quality Assurance Oversight

The Amended BCWF will be supported by experienced operations personnel through all phases of its operating life.

Operations Roles:

- SCADA/Performance Analyst
- Field Technician Team (PV/BESS certified)
- Asset Manager (PGE)
- QA/QC Lead (during and post-handoff)

Quality Assurance Protocols:

- Annual third-party condition assessments (PV and BESS)
- Annual SCADA data audit for performance anomalies
- Compliance inspections linked to EOP protocols
- Maintenance records retained and reviewed for trends

4.2 Budget Planning and Lifecycle Management

PGE will incorporate the solar and BESS components into its existing capital planning processes. The following measures support financial assurance and long-term reliability:

- Maintenance Budgeting:
  - O&M budgets for the first 5 years are embedded in the Build Transfer Agreement.
  - Post-transfer, expenses are forecasted annually by the Asset Management Team and tracked against site-specific performance.
- Lifecycle Planning:
  - A major maintenance reserve will be included in financial modeling to support inverter replacement, battery module refresh (anticipated at 12–15 years), and other long-term needs.
  - PGE's decommissioning cost estimates (Exhibit X) will be updated every 5 years to reflect equipment aging and market conditions.

5.0 Conclusions

The Certificate Holder recognizes that the integration of solar and battery components at the Amended BCWF presents new operational considerations. Drawing on extensive experience at Biglow Canyon, the Certificate Holder is committed to applying industry best practices, continuous improvement, and rigorous compliance oversight to ensure safe, reliable, and environmentally responsible operation of the Amended BCWF.