Request for Amendment No. 11 of the Site Certificate for the Port Westward Generating Project

Submitted to
Oregon Department of Energy

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Prepared by

Portland General Electric

Tetra Tech

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Acronyms and Abbreviations

ASC	Application for Site Certificate
CCCP	Columbia County Comprehensive Plan
CCI	Cornforth Consultants Inc.
Council	Energy Facility Siting Council
CUP	Conditional Use Permit
dBa	A-weighted decibels
BESS	Battery Energy Storage System
DOGAMI	Oregon Department of Geology and Mineral Industries
EPC	Engineering, Procurement and Construction
ft	Feet/foot
HVAC	Heating Ventilation and Air Conditioning
IBC	International Building Code
Li	Lithium
msl	Mean sea level
MW	Megawatt
NPDES	National Pollutant Discharge Elimination System
OAR	Oregon Administrative Rules
ODFW	Oregon Department of Fish and Wildlife
ODOE	Oregon Department of Energy
PWGP	Port Westward Generating Plan
PGE	Portland General Electric
POI	Point of Interconnect
PUC	Public Utility Commission
RFA	Request for Amendment
SCADA	Supervisory Control and Data Acquisition
SSPC	Salem Smart Power Center

1 Introduction

In 2002, the Energy Facility Siting Council (Council) issued a Site Certificate (Site Certificate) to Portland General Electric Company (PGE) for the Port Westward Generating Plant (PWGP, Facility). PWGP is a natural gas plant in Columbia County, Oregon, northeast of the City of Clatskanie. The Site Certificate authorizes PGE to construct and operate two separate units at PWGP. Unit 1 is a 411 megawatt (MW) base load natural gas combined cycle combustion turbine plant that went into commercial operation in June 2007. Unit 2 is a 220 MW non-base load, natural gas-fired power plant comprised of 12 reciprocating internal combustion engines. Unit 2 went into commercial operation in December 2014.

In the 2015 Oregon Legislative session, PGE assisted in drafting House Bill 2193, which directs electric companies, if authorized by the Public Utility Commission (PUC), to submit proposals to develop energy storage systems and procure authorized projects by 2020. In November 2017, PGE filed its project proposal with the PUC for five energy storage projects, diverse in size, location and application. The changes proposed in this Request for Amendment No. 11 (RFA 11) are to implement one of the five proposed projects.

PGE is submitting RFA 11 to add a 4-6 MW battery energy storage system (BESS)within the fence line of the PWGP. The proposed BESS is a test project to better understand the range of grid services a generation-connected BESS can provide to PGE's system. These services are described in Section 4.

The analysis areas for RFA 11 are based on the boundary of the PWGP energy facility site and the spoils disposal area (Figure 1). This site and spoils disposal area boundary does not include the transmission line (ODOE, personal communication, March 29, 2019 and April 4, 2019).

In addition to the changes associated with the BESS, PGE is proposing several other changes to existing Site Certificate conditions that are not specific to the BESS:

1. Minor corrections/clarifications to the facility descriptions in Section C.1(a) and C.1(b) of the Site Certificate.
2. Modification of Condition D.6(7) to reflect that all fuel and chemical storage will be in paved spill containment areas with a curb, or appropriately sized and compatible secondary containment to allow for the use of secondary containment options that do not require installation of permanent pavement. (Section 8.3)
3. Modification to the revegetation success criteria and the Revegetation and Noxious Weed Control Plan as discussed with ODOE and ODFW on February 9, 2019. (Section 8.7)
4. Modification of Condition D.8(11) pertaining to wetland buffers. (Section 8.7)
5. Removal of Condition D.9(9) related to bald eagles. (Section 8.8)

When necessary, justifications for these proposed changes are in the applicable standard sections below.

This RFA provides the Council with information required under Oregon Administrative Rule (OAR) 345-027-0060 to review and consider the proposed changes to PWGP.

2 Need for Amendment – OAR 345-027-0050

OAR 345-027-0050 Changes Requiring an Amendment

Except for changes allowed under OAR 345-027-0053 of this rule, an amendment to a site certificate is required to:

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(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 a 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.

Response: PGE is submitting an amendment request per OAR 345-027-0050(4)(c), because PGE proposes to modify existing site certificate conditions. In analyzing the "three coulds" test, PGE determined that the proposed battery storage will not result in any "significant adverse impact that the Council has not addressed in an earlier order" and will not "impair [PGE's] ability to comply with a site certificate condition." As explained further in Section 4, PGE proposes to add battery storage solely within already-disturbed areas of the existing site boundary. The Council has previously evaluated the Facility's impacts in those areas and imposed conditions to mitigate any adverse impacts. Except as specifically proposed in this RFA, PGE will continue to comply with all existing site conditions. Table 1 provides a summary of existing conditions that are applicable to the BESS.

Table 1. Standards and Laws Relevant to BESS.

Standard	Related Site Certificate Conditions
OAR 345-022-0000 General Standard of Review	F.1(3) – Compliance during all phases F.2(3) – Notification of environmental impacts F.2(4) – Implement compliance plan F.2(5) – Submit semi-annual construction report F.2(6) – Submit annual report

Standard	Related Site Certificate Conditions
	F.2(7) – Reference excerpts from other state, federal or local agency reports F.2(8) – Notification of changes in major milestones F.2(9) – Exchange copies of correspondence with other agencies F.2(10) – Notification of occurrences involving the facility within 72 hours G(1) – General arrangement shall be substantially as shown in the ASC G(2) – Construct related and supporting facilities in approved areas
OAR 345-022-0010 Organizational Expertise	D.2(1) – Notification of change of ownership D.2(2) – Notification of contractor identity D.2(3) – Notification if using a third-party operator D.2(4) – Responsibility of non-compliance D.2(5) – Contractually require contractors comply with site certificate D.2(6) – Obtain all necessary state and local permits or approvals
OAR 345-022-0020 Structural Standard	D.5(1) – Avoid dangers to human safety presented by seismic hazards D.5(3) – Submit geotechnical reports D.5(5) – Compliance with building codes D.5(6) – Notification of geological observations D.5(7) – Notification of geological observations D.5(8) – Avoid dangers to human safety presented by non-seismic hazards
OAR 345-022-0022 Soil Protection	D.6(1) – Restore vegetation D.6(2) – Control wind and water soil erosion D.6(3) – Limit construction during excessively wet conditions D.6(4) – Monitor for erosion impacts 12 months post construction D.6(5) – Implement follow-up restoration if necessary D.6(6) – Remove trapped sediment from erosion control measures D.6(7) – Contain fuel and chemical storage D.6(8) – Design indoor spill containment to hold 110 percent of liquids D.6(9) – Design outdoor spill containment to hold 110 percent of liquids and storm event
OAR 345-022-0030 Land Use	D.4(2) – Submit site plan D.4(4) – Obtain all appropriate land use permits
OAR 345-022-0040 Protected Areas	No applicable conditions to the Facility.
OAR 345-022-0050	D.3(1) – Retire facility when cease operations

Standard	Related Site Certificate Conditions
Retirement and Financial Assurance	D.3(2) – Prepare final retirement plan D.3(3) – Prevention of non-restorable site D.3(5) – Letter of credit to restore site to non-hazardous condition D.3(6) – Describe status of retirement fund in annual report D.3(7) – Prepare construction material management and monitoring plan D.3(8) – Prepare operational material management and monitoring plan D.3(9) – Perform Phase 1 investigations every 10 years D.3(10) – Correct deficiencies identified in Phase 1 investigation D.3(11) – Report releases of hazardous substances within one working day D.3(12) – Remedy release within six months or increase letter of credit D.3(13) – Commit funds from salvaged equipment to site restoration D.3(14) – Pay actual cost of retirement, regardless of estimated amount D.3(15) – Requirements for final retirement plan submittal
OAR 345-022-0060 Fish and Wildlife Habitat	D.8(1) – Avoid/minimize construction in areas of native vegetation and mitigate impacts to wildlife D.8(2) – Minimize impacts to vegetation and habitat D.8(4) – Prohibit equipment from entering streams, except as indicated D.8(5) – Use existing roads D.8(6) – Conduct blue heron rookery survey D.8(7) – Confirm breeding status of Crims Island bald eagles D.8(8) – Protect nesting birds, perform walk-down of site, train construction personnel regarding avian awareness D.8(10) – Proper use of herbicides near riparian areas or waterways D.8(12) – Setbacks for river, stream and emergent vegetation D.8(14) – Restore temporary disturbances D.8(15) – Minimize riparian vegetation disturbance D.8(18) – Implement mitigation measures specified in site certificate
OAR 345-022-0070 Threatened and Endangered Species	No applicable conditions to BESS
OAR 345-022-0080 Scenic Resources	D.10(1) – Move equipment from construction area when no longer needed D.10(2) – Control dust through application of water D.10(3) – Use directing and shielding devices on lights during construction D.10(4) – Use directing and shielding devices on lights during operation D.10(5) – Submit outdoor lighting plan

Standard	Related Site Certificate Conditions
	D.10(6) – Paint structures with low-glare point
OAR 345-022-0090 Historic, Cultural and Archaeological Resources	D.11(2) – Train construction personnel in identification of cultural items D.11(3) – Inadvertent discovery requirements D.11(4) – Allow monitoring by tribes during earth-moving activities D.11(5) – Allow for periodic onsite monitoring by tribes during construction
OAR 345-022-0100 Recreation	No applicable conditions to the Facility
OAR 345-022-0110 Public Services	D.13(1) – Provide chemical toilet services D.13(5) – Coordinate carpooling program for concurrent construction D.13(6) – Coordinate staggered shift schedule for concurrent construction D.13(7) – Use barge and railroad deliveries when possible D.13(8) – Construction fire protection system according to applicable codes
OAR 345-022-0120 Waste Minimization	D.14(1) – Separate recyclable materials D.14(2) – Segregate waste materials and proper disposal D.14(3) – Dispose of all temporary structures not need for operation D.14(4) – Convey all stormwater to allow for percolation
OAR 345-024-0550 and 0590 Carbon Dioxide Standards	No applicable conditions to BESS
OAR 340-035-0035 Noise	E.1.a(1) – Schedule heavy construction during daylight hours E.1.a(2) – Equip all combustion engines with exhaust mufflers E.1.a(3) – Establish noise complaint response system
Removal-Fill Law	E.1.b(3) – Clearly stake wetland boundaries

3 Certificate Holder Information – OAR 345-027-0060(1)(a)

OAR 345-027-0060 Preliminary Request for Amendment

(1) To request an amendment to the site certificate required by OAR 345-027-0050(3) and (4), the certificate holder shall submit a written preliminary request for amendment to the Department of Energy 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.

Response: PGE demonstrates compliance with this standard in Sections 3.1 through 3.3.

3.1 Name of Facility

Port Westward Generating Project

3.2 Name and Mailing Address of Certificate Holder

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

3.3 Name and Address of the Individual Responsible for Submitting the Request

Arya Behbehani
Senior Director Environmental & Licensing Services
Portland General Electric Company
121 SW Salmon Street, 3WTC0403
Portland, OR 97204
(503) 464-8141
Arya.Behbehani@pgn.com

4 Project Description – OAR 345-027-0060(1)(b)

OAR 345-027-0060 Preliminary Request for Amendment

(1) To request an amendment to the site certificate required by OAR 345-027-0050(3) and (4), the certificate holder shall submit a written preliminary request for amendment to the Department of Energy 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,

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

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

Response: The Port Westward BESS will add 4-6 MW of battery energy storage at PWGP. The BESS will be a related or supporting facility adjacent to the switchyard within the existing fence line of the energy facility site (Figure 1). The proposed locations identified in Figure 1 are the expected locations for the BESS and laydown areas.

Temporary construction laydown and parking areas also will be within the existing fence line. There will be no permanent or temporary disturbances caused by these laydown areas because they are already permanently disturbed and graveled. Also, no temporary or permanent roads will be built; all construction traffic will use existing access roads. A spoils disposal area located outside the fence line may be used during construction (Figure 1). This spoils disposal area is a previously-approved temporary disturbance area PGE used during construction of PWGP Units 1 and 2, which the Council approved in Request for Amendment 3.

The BESS will be factory built with batteries, enclosures, power conversion systems (inverters), an interconnection system, step-up transformers, battery management system, energy management system, fire detection and suppression, and all required programming for integration. The point of interconnect (POI) will be the switchgear in the existing switchyard. The BESS will connect to PGE's general transmission grid through the electric bus for Unit 2's Block 1, which connects to three engines. The transmission grid will recharge the BESS, and the BESS will discharge back to the grid when it is not used as spinning reserve for the Block 1 engines. The transmission grid includes generation from PWGP Unit 1 and Unit 2 and PGE's Beaver Generating facility to the southwest (Figure 1).

The batteries will be sited in a 100 foot (ft) x 90 ft paved area and stored in modular containers that are approximately 40 ft x 10 ft x 10 ft in dimension. Depending on the technology, the containers could be stacked for a total height of 20 ft. The number of modular containers, inverters, and transformers and their layout will depend on the final design, but all components will fit within the proposed battery storage areas indicated on Figure 1. Each modular container will include a heating ventilation and air conditioning (HVAC) system and fire detection and suppression system. Depending on the technology, there may also be pumps and electrolyte storage tanks. All wiring will be in underground conduits. The BESS will not be staffed for operations and maintenance. However, it will be designed to be completely automated and report failure problems through SCADA (Supervisory Control and Data Acquisition) to PGE operators.

PGE is considering two battery options: lithium-ion batteries and flow batteries.

Lithium-Ion Batteries

A lithium-ion battery is a rechargeable, solid-state battery that stores energy in a solid electrode material, such as metal. Each battery cell has a cathode (a positive electrode), an anode (a negative electrode), and an electrolyte as the conductor. The anode material is typically graphite. The cathode material varies, and it defines the battery. Common cathode materials for a utility-scale battery storage system include Li cobalt oxide (lithium cobaltate), Li manganese oxide (Li manganate), Li iron phosphate, Li nickel manganese Cobalt (NMC), and Li nickel cobalt aluminum oxide (NCA).

The electrolyte is the transport medium that allows lithium ions carrying the battery's charge to flow freely between the cathode and anode. The electrolyte is an organic solvent with dissolved lithium salt. Its composition depends on the selected cathode and anode combination. It is also what makes the battery flammable.

Flow Batteries

A flow battery is a rechargeable battery that stores energy in electrolyte liquids. The battery uses two liquids, one with a negatively charged cathode and one with a positively charged anode. These electrodes are separated by a membrane. When charging, the electrons are pulled from the positive solution and pushed into the negative solution. When the battery turns on, the electron flow reverses. Flow batteries come in a variety of chemistries: vanadium, iron chromium, zinc bromine, zinc iron and the batteries can be redox, hybrid, and membraneless.

Regardless of battery technology, fire suppression that meets the battery chemistry requirements will be built into the system. The fire alarm system will both detect and suppress fire. The fire suppression system will be able to contain a fire within the BESS enclosure for an adequate and reasonable amount of time to allow emergency services to arrive on site. A fire alarm panel at the BESS will connect to the PWGP Control Room so that operators are able to receive, acknowledge, and silence alarms.

Containment of leaks or spills is designed into the modules that store the batteries, regardless of technology and varies by manufacture. Lithium-ion batteries, which contain little to no liquids, are in racks sitting in trays that will collect any leaked material. Flow batteries do use an electrolyte solution and secondary containment varies but generally involves a leak-proof liner around the electrolyte tanks. Also, the modules are typically sealed from the floor up to greater than 100 percent of the electrolyte volume. The flow battery modules will also have sensors that detect a leak, activate an alarm, and engage the emergency shutdown.

Additionally, the BESS will have multiple transformers. If the transformers are oil-filled and trigger EPA's Spill Prevention, Control, and Countermeasure (SPCC) requirements for containment, they will have secondary containment in compliance with Conditions D.6(8) and D.6(9). Whether the transformers for the BESS are subject to PW's SPCC plan depends on the volume of oil each transformer holds. If a transformer holds more than 55 gallons of oil, it will be subject to SPCC requirements. Under the SPCC rule, transformers are oil-filled operational equipment and require general secondary containment. General secondary containment requirements address the most likely quantity of oil that would be released from the equipment during a typical failure. Such containment methods could include, but are not limited to, curbing, drip pans, and sorbent materials.

If a transformer holds less than 55 gallons of oil, it is not subject to SPCC. However, these transformers will be incorporated into PGE's routine maintenance work and would be inspected regularly for spills. The transformers will be sited on an impervious surface that is graded so that all stormwater remains on site. Transformers containing more than 55 gallons of oil would trigger a

material change to PWGP's SPCC Plan, and the plan would be updated to reflect the changes to the site within six months of the installation of the transformers. If the transformers contain less than 55 gallons of oil, they will be incorporated into PWGP's SPCC Plan during the required 5-year review.

Construction of the BESS is anticipated to start no later than the third quarter of 2020 and will end within one year of its start.

PGE further demonstrates compliance with this standard in Sections 4.1 through 4.3.

4.1 OAR 345-027-0060(1)(b)(A) How proposed change affects the facility

The BESS will not significantly alter PGE's operations of the PWGP. The BESS is a test project to better understand the range of grid services a generation-connected battery storage system can provide to PGE's system. The BESS may provide the services described in Table 2.

PGE also proposes five minor alterations to Site Certificate conditions. As discussed in this RFA, the proposed changes to the Site Certificate conditions will not impact PGE's operation of the PWGP or undermine the Council's previous findings. PGE will continue to operate the PWGP in compliance with all other existing Site Certificate conditions.

Table 2. Services the Port Westward Battery Energy Storage System may provide.

Category	Service	Description
Ancillary Services	Spinning Reserve	The portion of unloaded synchronized resource capacity that is immediately responsive to system frequency and that is capable of being loaded in 10 minutes and is capable of running for at least 60 minutes from the time it reaches its award capacity.
Ancillary Services	Non-spinning Reserve	The portion of resource capacity that is capable of being synchronized and ramping to a specified load in 10 minutes (or is capable of being interrupted in 10 minutes) and is capable of running (or being interrupted) for at least sixty 60 minutes from the time it reaches its award capacity.
Primary Control	Frequency Response	Online energy resource initial response to maintain interconnection frequency within predefined bounds by arresting frequency deviations and supporting frequency until restored to the scheduled value.
Ancillary Services	Regulation	Online energy resources that continuously respond to direct digital control signals in an upward and downward direction to match, on a real-time basis, demand and resources, consistent with established NERC BAL-001 reliability standard. Regulation is used to control the operating level of a resource within a prescribed area in response to a change in system frequency, tie line loading, or the relation of these to each other so as to maintain the target system frequency and/or the established Interchange with other Balancing Authority Areas within the predetermined Regulation Limits. Regulation includes both an increase in Energy production by a

Category	Service	Description
		resource or decrease in Energy consumption by a resource (Regulation Up) and a decrease in Energy production by a resource or increase in Energy consumption by a resource (Regulation Down).
Ancillary Services	Black Start Service	Black start service is the ability of a generating unit to start without an outside electrical supply and is necessary to help ensure the reliable restoration of the grid following a blackout.
Ancillary Services	Voltage Support	A resource which can contribute reactive power resources onto the grid to maintain a desired transmission system voltage or to maintain voltage stability.
Bulk Energy	Generation Peaking Capacity to meet Planning Margin	A resource that is available to meet the Load Serving Entity's peak demand forecast plus any fixed planning margin for contingency. The resource reduces the need to procure new peaking power plants.
Ancillary Services	Load Following	Security-constrained economic dispatch of energy resources responding to CAISO signals on a 5-minute basis by varying their power output within a prescribed area to maintain appropriate balance of a Balancing Area's net load (demand) and resource (energy).

4.2 OAR 345-027-0060(1)(b)(B) How proposed change affects resources / interest protected by applicable laws and council standards

The changes proposed in RFA 11 will not create significant new impacts affecting those resources and interests protected by the Council's siting standards and will not alter the basis of the Council's previous findings that the Facility complies with all applicable laws and standards. To the extent that the BESS could affect protected resources and interests, PGE demonstrates that the Facility will continue to comply with the all applicable laws and Council standards in Sections 5 through 8 of this RFA.

4.3 OAR 345-027-0060(1)(b)(C) Location of proposed change

Figure 1 shows the location of the BESS and areas that will be used during construction. The BESS will be constructed within the fence line of PWGP in a disturbed area; the area is roughly 0.2 acre and is asphalted. Additionally, two graveled areas within the fence line may be used for construction laydown. The only site that is outside the fence line and may be used during construction is the spoils disposal area. PGE leases and maintains this area.

5 Applicable Division 21 Requirements – OAR 345-027-0060(1)(c)

OAR 345-027-0060 Preliminary Request for Amendment

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

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

Response: Per the First Amended Project Order issued November 5, 2001, PGE demonstrates compliance with applicable requirements of Division 21 in Sections 5.1 through 5.2.

5.1 OAR 345-021-0010(e) Permits Required and Applicable Requirements

(e) Exhibit E. Information about permits needed for construction and operation of the facility, including:

(A) Identification of all federal, state and local government permits related to the siting of the proposed facility, a legal citation of the statute, rule or ordinance governing each permit, and the name, mailing address, email address and telephone number of the agency or office responsible for each permit.

(B) A description of each permit, the reasons the permit is needed for construction or operation of the facility and the applicant's analysis of whether the permit should or should not be included in and governed by the site certificate.

(C) For any state or local government agency permits, licenses or certificates that are proposed to be included in and governed by the site certificate, evidence to support findings by the Council that construction and operation of the proposed facility will comply with the statutes, rules and standards applicable to the permit. The applicant may show this evidence:

(i) In Exhibit J for permits related to wetlands.

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

(D) For federally-delegated permit applications, evidence that the responsible agency has received a permit application and the estimated date when the responsible agency will complete its review and issue a permit decision.

(E) If the applicant relies on a state or local government permit or approval issued to a third party, identification of any such third-party permit and for each:

(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.

(F) If the applicant relies on a federally-delegated permit issued to a third party, identification of any such third-party permit and for each:

(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 responsible agency has received a permit application.

(iii) The estimated the date when the responsible agency will complete its review and issue a permit decision.

(G) The applicant's proposed monitoring program, if any, for compliance with permit conditions.

Response: The Final Order on the Application for Site Certificate (ASC) and subsequent amendments identified the federal, state, and local government permits related to the siting of the Facility, which were incorporated into Site Certificate conditions as necessary. The addition of battery storage does not require any different permits from those previously identified, nor any new Site Certificate conditions for permits that were previously considered by the Council.

Table 3 lists the permits and regulations that are applicable to the PGWP and identifies their applicability to the BESS. As demonstrated in Table 3, the addition of battery storage does not separately require any new permits not previously addressed by the Council.

Table 3. List of Facility Permits and Applicability to the Port Westward Battery Energy Storage System.

Permit or Applicable Requirement	Agency	Rule or Statute	Applicability
Title V Air Permit or Air Contaminant Discharge Permit (ACDP)	Department of Environmental Quality	Clean Air Act, Title V (42 U.S.C. Section 7661); Oregon Administrative Rule (OAR) Chapter 340, Division 216	Federal permit. Not applicable to the BESS because there will be no air emissions from BESS components.

Permit or Applicable Requirement	Agency	Rule or Statute	Applicability
Water Pollution Control Facilities Permit (WPCF)	Department of Environmental Quality	Oregon Revised Statutes (ORS) 468B; OAR Chapter 340, Division 45	Not applicable because construction and operation of the BESS will not adversely impact the site's sewage collection and treatment systems. WPCF requirements are not applicable to the system since no other wastewater will be generated by the BESS during construction or operation. PWGP no longer requires, and therefore, no longer maintains a WPCF Permit due to rule changes in OAR 340-071 that allowed for the termination of the WPCF permit. The septic system is now under the oversight of Columbia County. (See Section 10.3)
National Pollutant Discharge Elimination System (NPDES) Industrial Discharge	Department of Environmental Quality	Clean Water Act, Section 402	PWGP maintains an agreement with the Port of Columbia County to discharge industrial wastewaters through the Port of Columbia County's NPDES permit. No modifications to this agreement are required since no wastewater will be generated by the BESS during construction or operation.
General National Pollutant Discharge Elimination System (NPDES) Stormwater Discharge 1200-C permit and Erosion and Sediment Control Plan	Department of Environmental Quality	Clean Water Act, Section 402 (33 U.S.C. Section 122); 40 CFR Section 122; ORS 468 and 468B; OAR Chapter 340, Divisions 14, 41, 45, 52, and 55	Construction of the BESS will not disturb more than 1 acre; therefore, no NPDES permit will be required.
Removal/Fill Permit	Department of State Lands	ORS 196.795 through 196.990, OAR Chapter 141, Division 085	Not applicable to the BESS because no wetlands or waters of the state will be disturbed by construction or operation of the BESS.

Permit or Applicable Requirement	Agency	Rule or Statute	Applicability
Fire Protection Program	Oregon State Fire Marshal's Office	ORS 476 and 480, OAR Chapter 837, Divisions 40 and 90	Applicable to the BESS because the Facility will be required to comply with the Oregon Fire Code, per Site Certificate Condition D.13.
Hazardous materials containment and transport	Oregon Department of Transportation	49 Code of Federal Regulations 173.185; ORS 453.825	Applicable to the BESS if batteries containing hazardous materials, including lithium-ion, are selected.
Radioactive materials transport	Oregon State Health Division	ORS Chapter 453; OAR Chapter 333, Divisions 100-119	Not applicable to the BESS because no radioactive materials will be transported or used at the site.
Potable water supply	Oregon State Health Division	ORS Chapter 448	Not applicable to the BESS because no modifications will be made to the potable water system.
State Highway Approach Permit	Oregon Department of Transportation	ORS 374.305	Not applicable to the BESS because no new state highway approach will be required.
Program addressing design and safety standards for natural gas pipelines and electric transmission lines	Oregon Public Utilities Commission, Safety Section	ORS Chapter 757; OAR Chapter 860, Division 24	Not applicable to the BESS because no electric transmission lines will be constructed or modified as part of BESS construction.
Regulations of building, structure design and construction practices	Oregon Building Codes Division/Columbia County	ORS Chapters 455, 476, and 479; OAR Chapter 918, Divisions 440 and 460; 2014 Oregon Structural Specialty Code Chapter 1, Section 105.1; Chapter 34, Section 3403	Applicable to the BESS during construction; must adhere to mechanical, structural and energy efficiency specialty requirements, public health and safety building code requirements, and electrical safety and fire code requirements as implemented through Columbia County Land Development Services - Building Department.

Permit or Applicable Requirement	Agency	Rule or Statute	Applicability
Conditional Use Permit	Columbia County	Columbia County Zoning Ordinance – Sections 680, 1503	Applies to the BESS, which is a new accessory use to an existing industrial use and is a conditionally allowed use in the underlying zone.

5.2 Additional Statutes & Rules – OAR 345-021-0010(cc)

(cc) Exhibit CC. Identification, by legal citation, of all state statutes and administrative rules and local government ordinances containing standards or criteria that the proposed facility must meet for the Council to issue a site certificate, other than statutes, rules and ordinances identified in Exhibit E, and identification of the agencies administering those statutes, administrative rules and ordinances. The applicant shall identify all statutes, administrative rules and ordinances that the applicant knows to be applicable to the proposed facility, whether or not identified in the project order. To the extent not addressed by other materials in the application, the applicant shall include a discussion of how the proposed facility meets the requirements of the applicable statutes, administrative rules and ordinances.

Response: There are no additional statutes and rules that are applicable to the construction and operation of BESS.

6 Site Certificate Revisions – OAR 345-027-0060(1)(d)

OAR 345-027-0060 Preliminary Request for Amendment

(1) To request an amendment to the site certificate required by OAR 345-027-0050(3) and (4), the certificate holder shall submit a written preliminary request for amendment to the Department of Energy 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.

Response: Proposed Site Certificate revisions are presented in the redlined Site Certificate included as Attachment 7 and discussed in the appropriate Standards in Section 8 through 10.

Proposed changes to the site descriptions in Section C.1.a and C.1b of the site certificate that do not otherwise correspond to a specific Standard are described in this section.

In previous site descriptions non-base load generation was included as a type of power augmentation technology. PGE proposes a change to the first paragraph of Section C.1.a. so that

non-base load generation is listed individually and not included as a type of power augmentation technology. This change also requires a corresponding change under the Fuel Use section of C.1.a.

Previous site descriptions starting with the Seventh Amended Site Certificate are missing one dimensional length for the turbine building, PGE has added the missing dimension of 150 ft in the third paragraph of Section C.1.a.

PGE proposes a change to the tenth paragraph of Section C.1.a to correct an inconstancy between the written description of water tanks and Figure B-1 of RFA No. 7. The written facility description in Amendment No. 7 described a total of three water tanks; one fire water /service water tank and two demineralized water storage tanks. However, Figure B-1 of RFA No. 7 indicates the potential for up to four water tanks; two fire water/service water tanks and two demineralized water storage tanks (Facility Legend items 20 and 21 on Figure B-1 of RFA No. 7). The redline site certificate has been modified to reflect the potential for up to a total of four water tanks since the Facility Description captures the facilities approved by the Council and is not otherwise modified to reflect facilities never constructed (e.g. aeroderivative combustion turbine or multiple transmission line options). Ultimately three tanks were constructed; two fire water/service tanks and one demineralized water storage tank. Since the aeroderivative combustion turbine was never constructed the additional demineralized water storage tank was not constructed. PGE also proposes a change to the thirteenth paragraph of Section C.1.a to more accurately capture the capacity of the fire water sources.

PGE identified an error in the Natural Gas Pipeline Section of C.1.b related to the capacity of the Kelso-Beaver Pipeline; past descriptions stated the pipeline had a capacity of 193,000 decatherms per day, the correct capacity is 200,913 decatherms per day. The Kelso-Beaver Pipeline is not a related or supporting facility; therefore, this correction does not impact any capacities associated with the Facility.

7 List of Applicable Standards and Other Laws – OAR 345-027-0060(1)(e)

OAR 345-027-0060 Preliminary Request for Amendment

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

** * **

(e) A list of the Council standards and all 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 345-027-0075(2).

Response: As relevant to this RFA, OAR 345-027-0075(2)(c) requires the Council to find that "the facility, with the proposed change, complies with the applicable laws or Council standards that protect a resource or interest that could be affected by the proposed change." The changes proposed in RFA 11 will not create significant new impacts affecting those resources and interests protected by the Council's siting standards and will not alter the basis of the Council's previous findings that the Facility complies with all applicable laws and standards. To the extent that the BESS could affect protected resources and interests, PGE demonstrates that the Facility will continue to comply with the following laws and Council standards:

8 Division 22 Standards – OAR 345-027-0060(1)(e)

8.1 Organizational Expertise OAR 345-022-0010

OAR 345-022-0010 Organizational Expertise

(1) To issue a site certificate, the Council must find that the applicant has the organizational expertise to construct, operate and retire the proposed facility in compliance with Council standards and conditions of the site certificate. To conclude that the applicant has this expertise, the Council must find that the applicant has demonstrated the ability to design, construct and operate the proposed facility in compliance with site certificate conditions and in a manner that protects public health and safety and has demonstrated the ability to restore the site to a useful, non-hazardous condition. The Council may consider the applicant's experience, the applicant's access to technical expertise and the applicant's past performance in constructing, operating and retiring other facilities, including, but not limited to, the number and severity of regulatory citations issued to the applicant.

** * **

Response: The BESS will not alter the Council's basis for its previous findings that the Facility complies with the standard, and the Facility will continue to comply with the standard if the Council approves the proposed addition of the BESS. PGE demonstrates its ability to design, construct, and operate the proposed battery storage in compliance with all site certificate conditions and in a manner that protects public health and safety and restore the site to a useful non-hazardous condition after retiring the battery storage components.

PGE's Experience Operating Battery Storage

PGE is a fully integrated energy company based in Portland, Oregon, serving 863,000 customers in 51 cities. PGE generates electricity from plants we own and purchases power on the wholesale market. We operate wholly and jointly own 3 hydroelectric, 4 natural gas, 1 coal, and 2 wind generating plants and 17 solar sites. For 129 years, PGE has been delivering energy to Oregonians.

In the *Final Order on the Application*[1], the Council found that the certificate holder has the organizational expertise to construct, operate and retire the PWGP in compliance with Council standards and the conditions of the Site Certificate. Subsequently in the *Final Order on Amendment #7*[2], the Council found that the certificate holder has the organizational expertise to construct, operate, and retire Unit 2 in compliance with Council standards and the conditions of the Site Certificate. RFA 11 addresses incorporation of a BESS, which is a new component of the Facility, and this section specifically addresses PGE's experience with energy storage systems.

Since May 2013, PGE has operated and maintained the Salem Smart Power Center (SSPC), a 5-MW, 1.25 MWhr lithium ion battery inverter system in Salem, Oregon. This system was built as part of the Pacific Northwest Smart Grid Demonstration Project, a U.S. Department of Energy research effort. The SSPC is unique in that it is a laboratory where research and development projects were conducted while at the same time it is an operating grid asset used to enhance system reliability.

The SSPC is autonomous; no PGE employees are staffed at the center. Instead, PGE remotely monitors and controls day-to-day battery operations. The SSPC uses a comprehensive state-of-the-art fire protection system that incorporates detection, alarms, and suppression. A similar tiered system will be installed at the BESS as appropriate for the selected battery technology. The SSPC and its POI, a nearby PGE substation, are located in a mixed-use area with residential homes one block away. PGE has operated the center for five years with no fires and no regulatory citations or complaints or concerns from neighbors.

Therefore, Council may find that with approval of RFA 11, the certificate holder continues to comply with the organizational expertise standard.

Public Health and Safety ORS 469.310

Under ORS 469.310, the Council is charged with ensuring that the "siting, construction and operation of energy facilities shall be accomplished in a manner consistent with protection of the public health and safety." Further, ORS 469.401(2) provides that "the site certificate shall contain conditions for the protection of the public health and safety." The Council previously found in the Final Order on the Application and in subsequent amendments that the siting, construction, and operation of the Facility are consistent with the requirements of ORS 469.310[3]. Site certificate conditions address cooling tower fogging and icing, transmission line construction, coordination with the Oregon Public Utilities Commission, and construction of the natural gas pipeline. Construction and operation of the BESS will not alter the certificate holder's ability to comply with these conditions. No new cooling tower, transmission line, or natural gas pipeline components will be constructed as part of the modifications proposed under RFA 11.

[1] Final Order on the Application. 2002. Pg. 43.
[2] Final Order on Amendment #7. 2010. Pg. 10.
[3] Final Order on the Application. 2002. Pg 158; Final Order on Amendment #7. 2010. Pg 34; Final Order on Amendment #10. 2013. Pg 40.

PGE will apply its experience with the SSPC to safely operate and maintain the BESS. From designing, constructing, and safely operating the SSPC, PGE has developed a comprehensive understanding of how to operate a lithium-ion battery inverter system to accomplish an intended purpose. That experience directly translates to PGE's safe management of either lithium-ion or flow battery storage systems at the BESS.

The BESS will be located within an area with multiple layers of security, which the public will be unable to enter. The first security layer is either a guard station or badge-access crossing gate that all vehicles entering the Port Westward Industrial Area must pass through. Within the complex, PWGP sits within a fenced area that requires badge access or Control Room-approved entry. Within PWGP, the BESS will also be fenced and require badged entry or the switchyard fence will be expanded to include the BESS within the switchyard footprint and fence. PGE has proposed new switchyard dimensions in Section C.1.a of the Site Certificate to reflect the potential fence realignment. Access will be limited to only PGE personnel who have received appropriate training and approved maintenance contractors. The shipping modules, in which the batteries will be stored, may have keyed entry.

The BESS will be designed to be automated and report problems to PGE Operators. Autonomous monitoring will include power, thermal, and security monitoring, and depending on technology, gas monitoring. The autonomous monitoring will be connected to the PWGP Control Room, which is manned 24 hours a day. PWGP staff will receive classroom and hands-on training covering the operation and maintenance of the system from the contractor.

The changes proposed under RFA 11 do not alter the certificate holder's ability to protect public health and safety. Therefore, Council may find that with the modifications proposed under RFA 11, PWGP continues to comply with the requirements of ORS 469.310.

PGE has not yet selected a prime engineering, procurement and construction (EPC) contractor to construct and maintain the proposed BESS. PGE will enter into a contract with a qualified contractor or major equipment manufacturer who will partner with a qualified contractor. Maintenance will be provided by PGE or a third party. PGE will require any contractors to comply with all Site Certificate conditions. PGE will operate the BESS.

Site Retirement

The Council previously found that PGE is able to restore the site to a useful, nonhazardous condition following permanent cessation of construction or operation of the Facility. PGE demonstrates compliance with this standard in Sections 8.6.

8.2 Structural Standard OAR 345-022-0020

OAR 345-022-0020 Structural Standard

(1) Except for facilities described in sections (2) and (3), to issue a site certificate, the Council must find that:

(a) The applicant, through appropriate site-specific study, has adequately characterized the seismic hazard risk of the site; and

(b) The applicant can design, engineer, and construct the facility to avoid dangers to human safety and the environment presented by seismic hazards affecting the site, as identified in s[u]bsection (1)(a);

(c) The applicant, through appropriate site-specific study, has adequately characterized the potential geological and soils hazards of the site and its vicinity that could, in the absence of a seismic event, adversely affect, or be aggravated by, the construction and operation of the proposed facility; and

(d) The applicant can design, engineer and construct the facility to avoid dangers to human safety and the environment presented by the hazards identified in subsection (c).

** * **

Response: The Council previously found that the existing Facility complies with the Structural Standard in the Final Order on the ASC and each of the 10 amendments. In the Final Order on the ASC, the Council found with the imposition of the eight conditions in Section D.5, that the Facility met the Structural Standard[4]. In the Final Order on Amendment 5, the Council found that with the incorporation of a ninth structural condition (Condition D.5(9)), that the Structural Standard was met[5]. In the Final Order on Amendment 7, the Council found that the design, construction, and operation of the reconfigured Unit 2 would meet the Council's Structural Standard, taking into account the conditions adopted in Section D.5 of the Site Certificate[6].

The Structural Standard application requirements described under OAR 345-021-0010(1)(h) have been modified since Amendment 10 was processed. As relevant, an applicant must now provide the following additional information:

OAR 345-021-0010(1)(h)(F)

(i) An explanation of how the applicant will design, engineer, construct and operate the facility to integrate disaster resilience design to ensure recovery of operations after major disasters.

(ii) An assessment of future climate conditions for the expected life span of the proposed facility and the potential impacts of those conditions on the proposed facility.

Because the existing Facility has already been constructed in accordance with prior findings, the new information requirements do not apply to the existing Facility. The amendments do not alter the basis for the Council's findings that the construction and operation of the existing Facility is consistent with the Structural Standard. Additionally, PGE demonstrates that construction and operation of the BESS would not significantly alter the basis for the Council's prior findings that the

[4] Final Order on the Application. 2002. Pg. 56-64.
[5] Final Order for Amendment No. 5. Pg. 6.
[6] Final Order on Amendment No. 7. Pg. 11-12.

Facility complies with the Structural Standard, including the new information requirements to the extent that they apply to the BESS. See Section 4 of this RFA for the full project description.

Battery Storage System

PGE previously provided evidence regarding the site-specific requirements of the Structural Standard in Exhibit H of the ASC and the subsequent amendments, as well as through compliance with Site Certificate conditions requiring additional site-specific geotechnical studies. Previous geotechnical studies were conducted by Cornforth Consultants Inc. (CCI) in 2002 for Unit 1 and by Black & Veatch in 2013 for Unit 2. As discussed during a consultation meeting with the Oregon Department of Geology and Mineral Industries (DOGAMI) held on March 15, 2019, the previously provided evidence for geotechnical data and borings are still valid (Attachment 1). However, DOGAMI noted that design requirements have changed since the 2002 study and requested that the contractor's engineer of record address the liquefaction potential and seismic hazards relevant to a magnitude 9 earthquake (Cascadia event) using current and updated information. The BESS will be designed to current codes and the seismic design data will be based on current code values. If geotechnical reports are completed by the contractor, DOGAMI asks that they conform to the guidelines of the Oregon State Board of Geologist Examiners and are submitted to Oregon Department of Energy (ODOE) and DOGAMI. It will be up to the contractor selected to determine if additional geotechnical investigation information to design the foundation for the BESS is needed. If additional geotechnical investigation information is gathered, PGE will provide the information to ODOE and DOGAMI for the record. PGE proposes a new Site Certificate Condition D.5(10). The proposed new condition is as follows:

> ***D.5(10) If additional geotechnical investigations are performed for the design of the BESS, the Certificate Holder shall provide the Department and DOGAMI with a report containing the results of the investigation. The report shall conform to Oregon State Board of Geologist Examiners Guideline for Preparing Engineering Geologic Reports [Amendment No. 11]***

The addition of a BESS will be within the fence line of the existing Facility; construction of the BESS would not modify previously approved structures. In addition, the modular BESS structures will be designed to current codes, such as the International Building Code (IBC) and other required codes, as determined by the contractor's engineer of record for the design. The State of Oregon uses the 2012 IBC, with current amendments by the Oregon Structural Specialty Code (ICC 2014). Pertinent design codes as they relate to geology, seismicity, and near-surface soil are contained in the IBC Chapter 16, Section 1613, with slight modifications by the current amendments of the State of Oregon. The BESS will be designed to meet standards required by these design codes and will be inherently less prone to providing a risk to human safety since the structures will be in a modular container close to the ground and supported on a foundation.

The Disaster Resilience Design – OAR 345-021-0010(1)(h)(F)(i)

The BESS itself will potentially enhance the Facility's disaster resilience after certain major disasters, by providing battery storage for the PWGP and neighboring Beaver Generating Facility. To address integrating disaster resilience design to ensure recovery of operations after major disasters, PGE identifies the BESS as a test project to better understand the range of grid services that energy storage systems can provide for system resiliency. This project will help determine how energy storage could work in regard to resiliency, capacity, ancillary services (frequency variation, etc.), outage mitigation, and power reliability. As discussed above, the contractor's engineer of record will be required to design the BESS according to current codes. Because the BESS is a related or supporting facility the disaster resiliency of the BESS is dependent on the disaster resiliency of the Facility. For example, if during a Cascadia Subduction Zone event the natural gas pipelines to the Facility are damaged and the Facility become inoperable until the natural gas pipelines are repaired the resiliency of the BESS is low compared to the amount of time the facility would be without fuel.

Future Climate Conditions – OAR 345-021-0010(1)(h)(F)(ii)

Recent research indicates that more intense storms, heatwaves, and more frequent fires may be expected with a changing climate. From a structural perspective, the existing Facility was designed to withstand non-seismic geological hazards. As such, inclusion of a BESS at the existing Facility should also be able to withstand the potential for changes in climatic conditions (e.g., increased rainfall or temperature changes that could cause geological changes). As discussed in the DOGAMI consultation meeting held on March 15, 2019, PGE has addressed flooding hazards to the existing Facility by participating as a member of the local drainage district. PGE has evaluated the extent and the weaknesses of the existing levee, and how, if the levee were breached, a flood would impact the Facility. Subsequently, PGE has made improvements. This and any other improvements made at the existing Facility will apply to the BESS, as it is within the fence line of the existing Facility. Utilizing LIDAR the elevation of the BESS location was determined to be approximately 21 to 22 ft mean sea level (msl), overall the Facility elevation is approximately 20 to 22 ft msl. The levee immediately adjacent to the Facility has an elevation of approximately 24 ft msl; however, there are portions of the levee remote and to the south of the Facility that have an elevation of approximately 16.5 ft msl. Based on Federal Emergency Management Agency Effective data that is the basis of the National Flood Insurance Program regulations and flood insurance requirements, the 100-year flood event near the Facility would be 16 ft msl. If the levee system was over topped at its low point, the breach would occur approximately 4 miles south of the Facility and the Facility is located 4 to 6 ft above flood levels.

The changes proposed under RFA 11 do not affect previous Council findings on the Structural Standard, and the information provided here demonstrates that construction and operation of the BESS would not significantly alter the basis for the Council's prior findings that the Facility complies

with the Structural Standard. Therefore, the Council may find that, with the modifications proposed under RFA 11, PWGP continues to comply with the Structural Standard.

8.3 Soil Protection – OAR 345-022-0022

OAR 345-022-0022 Soil Protection

To issue a site certificate, the Council must find that the design, construction and operation of the facility, taking into account mitigation, are not likely to result in a significant adverse impact to soils including, but not limited to, erosion and chemical factors such as salt deposition from cooling towers, land application of liquid effluent, and chemical spills.

Response: The BESS will not alter the Council's basis for its previous findings that the Facility complies with the standard, and the Facility will continue to comply with the standard if the Council approves the proposed addition of the BESS. PGE will comply with all Site Certificate conditions, as modified, related to Soil Protection in Section D.6 of the Site Certificate that are applicable to RFA 11.

Ground Disturbance

All soil impacts from the BESS will be in existing disturbed areas, which the Council has already addressed through its previous findings and site conditions incorporating those findings. The Council previously found that PWGP complies with the Soil Protection Standard in the Final Order on the Application[7] and subsequent amendments. The BESS will be installed within the fence line of the Facility in an area that is currently paved, which limits the opportunity for soil erosion, soil compaction, and chemical spills on soils. Ground improvements may be made to the proposed battery storage area to improve foundation support and seismic resistance. Also, the existing asphalt may be removed, disposed of and new asphalt applied during ground improvements. If the soil were to be contaminated from leaking equipment during these improvements, it would be removed and properly disposed of in compliance with all applicable laws and regulations, and the leaking equipment would be repaired. The ground improvements will be limited in extent and should not adversely affect on-site soils and fill.

Spoils from ground improvements may be disposed of in the spoils disposal area. This area was used during construction of Units 1 and 2 and then re-seeded with a native seed mix. The spoils disposal area will be accessed from existing paved and gravel roads limiting the amount of soil compaction that will need to be addressed during revegetation. In total, PGE proposes to disturb less than one acre of soil, including ground disturbance at the BESS proposed battery storage area, the spoils disposal area during construction, and areas needed to maneuver equipment.

[7] Final Order on the Application. 2002. Pg. 70.

Chemical Containment

The BESS will be factory built and the batteries will be fully enclosed when they arrive at the Facility, which minimizes the risk for spills during construction. Additionally, the contractor will store all chemicals in a manner appropriate for minimizing contamination and consistent with all applicable laws and regulations.

If a battery were to leak or spill fluid during a potential equipment malfunction or improper handling, that fluid would be contained within the modular containers, which act as secondary containment. Consequently, the design of the battery system minimizes the risk of chemicals escaping the container.

Additionally, the Facility's design effectively prevents any release of fluid into the environment, if a fluid did reach the ground surface. The site of the BESS is paved asphalt and the entire Facility is graded so that all storm water remains on-site and flows to one of four on-site storm water retention ponds, where it is contained and can be cleaned up. The risk that a chemical leak could potentially adversely impact soils outside the Facility is de minimis.

PGE proposes a minor modification to Site Certificate Condition D.6(7) to allow for the use of secondary containment options that do not require installation of permanent pavement. The proposed change to the condition is as follows:

> *D.6(7) The Certificate Holder shall contain all fuel and chemical storage in paved spill containment areas with a curb,* ***or appropriately sized and compatible secondary containment. [Amendment No. 11]***

8.4 Land Use – OAR 345-022-0030

OAR 345-022-0030 Land Use

(1) To issue a site certificate, the Council must find that the proposed facility complies with the statewide planning goals adopted by the Land Conservation and Development Commission.

(2) The Council shall find that a proposed facility complies with section (1) if:

> ** * **
>
> *(b) The applicant elects to obtain a Council determination under ORS 469.504(1)(b) and the Council determines that:*
>
> > *(A) The proposed facility complies with applicable substantive criteria as described in section (3) and the facility complies with any Land Conservation and Development Commission administrative rules and goals and any land use statutes directly applicable to the facility under ORS 197.646(3);*
> >
> > *(B) For a proposed facility that does not comply with one or more of the applicable substantive criteria as described in section (3), the facility otherwise complies with the*

statewide planning goals or an exception to any applicable statewide planning goal is justified under section (4); or

(C) For a proposed facility that the Council decides, under sections (3) or (6), to evaluate against the statewide planning goals, the proposed facility complies with the applicable statewide planning goals or that an exception to any applicable statewide planning goal is justified under section (4).

** * **

Response: The Council previously found that the Facility complies with the Land Use Standard. As stated in the Final Order on the ASC[8], PGE elected to have the Council make the land use determination for the Facility under ORS 469.504(1)(b) and OAR 345-022-0030(2)(b). The Council found that the Facility, as amended through RFA 10, complies with the applicable substantive criteria from the Columbia County Comprehensive Plan (CCCP) and land use regulations. Compliance with the CCCP and County land use regulations is required by the statewide planning goals in effect on the date the application is submitted. The Facility also must comply with any Land Conservation and Development Commission administrative rules and goals, as well as any land use statutes directly applicable to the Facility.

As stated in Section 1, RFA 11 involves only the aspects of the Facility located within the fence line and the spoils disposal area; it does not include the transmission line. Therefore, PGE addresses the Land Use Standard accordingly, and does not review the transmission line or features other than those identified in Section 1.

In its evaluation of the Facility under the Land Use Standard (OAR 345-022-0030) in the ASC, and in subsequent requests for amendments, the Council considered the applicable, substantive criteria. Specifically pertinent to RFA 11, this includes the CCCP (adopted 1984 and amended through 2013) and the Columbia County Zoning Ordinance (CCZO; adopted 1984 and amended through 2017). The CCCP and CCZO have not had changes to the applicable sections that would impact the Council's prior findings under the Land Use Standard. The changes to these documents either do not apply to the location or zoning of the Facility site, or to the land use classification of the Facility or the Facility improvements.[9] The Columbia County Planning Manager provided a preliminary review

[8] Final Order on the Application. 2002. Pg. 53.

[9] CCCP Amendments Since RFA 10:

- Ordinance No. 2013-2; Effective Date January 2010 – Tide Creek Rock Zone Change Forest Agriculture to Surface Mining

CCZO Amendments Since RFA 10:

- Ordinance No. 2015-04; Effective Date: November 25, 2015 - Amends to Establish Regulations for Marijuana Related Land Uses
- Ordinance No. Order 2-2016; Effective Date: January 13, 2016 - Corrects Scrivener's Errors in Ordinance No. 2015-04
- Ordinance No. 2017-2; Effective Date: October 10, 2017 - Adopting the Columbia County Transportation System Plan and Related Amendments to the Columbia County Comp Plan, Zoning Ordinance, and Subdivision and Partitioning Ordinance

and input on applicable substantive criteria for RFA 11 (M. Laird personal communication, March 29 2019). PGE has addressed the applicable substantive criteria for RFA 11 in Attachment 2 and has summarized the findings herein.

The changes to the Facility that are proposed in RFA 11 are entirely in the Port Westward Industrial Area and land use jurisdiction of Columbia County. The Port Westward Industrial Area is zoned Resource Industrial – Planned Development (RIPD). The Facility is interior to the Port Westward Industrial Area: surrounded by RIPD zoning on three sides and the river on the fourth side. Columbia County took an exception to Statewide Planning Goal 3, Agriculture, to zone land outside of the Urban Growth Boundary as industrial land for the Port Westward Industrial Area. The Port Westward Exception Statement is included as part of the CCCP[10], and discusses the site's existing character and facilities, history, and surrounding uses. The Port Westward Exception Statement demonstrates that the Port Westward Industrial Area is ideally suited for the Rural Industrial designation and industrial development that is consistent not only with its proximity to the Columbia River, but other existing facilities as well. In the Final Order of November 8, 2002, the Council found[11]:

> *The RIPD zone provides a zone that conditionally allows industrial development on rural lands provided they use the surrounding natural resources. As discussed above with respect to the CCZO §§ 681 and 683, the energy facility will use the natural resources available at the Port Westward tract consistent with the Resource Industrial Development element of the Comprehensive Plan. For the reasons outlined above with respect to the Industrial Development element and CCZO §§ 681 and 683, the facility is consistent with the policies of the Resource Industrial Development element as well.*

The Council has consistently found in subsequent amendments that the Facility is consistent with the purpose and provisions of the RIPD zone[12] as a conditionally allowed use in its review of compliance with the Land Use standard.

The changes proposed in RFA 11 will add related or supporting facilities to the Facility: accessory uses to an existing industrial use on a site zoned and developed for industrial use. The BESS will be entirely within the fence line of the Facility, on previously developed impervious surface and will not change the developed footprint of the Facility. The BESS will be relatively minor in size, scope, and effect compared to the existing, already built Facility (Figure 1) and will be visually subordinate to the Facility. As described throughout RFA 11 and in Attachment 2, there will be no new offsite impacts that affect the greater rural surroundings; there will be no significant changes to noise impacts (Section 10.1), public services including transportation (Section 8.12), natural resources (including wetland and waters, Section 10.2), floodplain (see Attachment 2) or soils (Section 8.3).

- Ordinance No. 2018-2; Effective Date: June 12, 2018 - Amends Columbia County Zoning Ordinance Pertaining to Marijuana Related Land Uses in Unincorporated Columbia County

[10] CCCP. Pg. 116–132.
[11] Final Order on the Application. 2002. Attachment D. Pg. 35.
[12] Final Order on Amendment #10. 2013. Pg. 17.

The BESS and temporary construction use of areas previously approved in the Site Certificate for those uses (laydown areas, parking, and spoils disposal) are consistent with the identified goals and future uses of the Port Westward Industrial Area and RIPD zone. Moreover, PGE has addressed RFA 11's specific, applicable, and substantive criteria, including applicable standards for the RIPD zone, in Attachment 2.

The changes to the Facility proposed in RFA 11 would not alter the basis of the Council's previous findings. PGE will comply with all existing Site Certificate conditions related to land use that are applicable to RFA 11, such as in Section D.4 of the Site Certificate. As described herein and in Attachment 2, the changes proposed in RFA 11 comply with all applicable substantive criteria. PGE proposes modification to Site Certificate Condition D.4(2) to require an updated site plan be provided to Columbia County. The proposed change to the condition is as follows:

> *D.4(2) Before beginning construction of the energy facility, the Certificate Holder shall submit a site plan to Columbia County as part of its building permit application.* ***Before beginning construction of the BESS, the Certificate Holder shall submit an updated site plan to Columbia County to reflect the addition of the BESS as a related or supporting facility. [Amendment No. 11]****.*

Therefore, the Council can find that the Facility complies with the statewide planning goals adopted by the Land Conservation and Development Commission. For the reasons discussed above, the Council can find that, with approval of RFA 11, the Facility continues to comply with the Land Use Standard.

8.5 Protected Areas – OAR 345-022-0040

OAR 345-022-0040 Protected Areas

(1) Except as provided in sections (2) and (3), the Council shall not issue a site certificate for a proposed facility located in the areas listed below. To issue a site certificate for a proposed facility located outside the areas listed below, the Council must find that, taking into account mitigation, the design, construction and operation of the facility are not likely to result in significant adverse impact to the areas listed below. References in this rule to protected areas designated under federal or state statutes or regulations are to the designations in effect as of May 11, 2007:

> *(a) National parks, including but not limited to Crater Lake National Park and Fort Clatsop National Memorial;*
>
> *(b) National monuments, including but not limited to John Day Fossil Bed National Monument, Newberry National Volcanic Monument and Oregon Caves National Monument;*
>
> *(c) Wilderness areas established pursuant to The Wilderness Act, 16 U.S.C. 1131 et seq. and areas recommended for designation as wilderness areas pursuant to 43 U.S.C. 1782;*
>
> *(d) National and state wildlife refuges, including but not limited to Ankeny, Bandon Marsh, Baskett Slough, Bear Valley, Cape Meares, Cold Springs, Deer Flat, Hart Mountain, Julia Butler*

Hansen, Klamath Forest, Lewis and Clark, Lower Klamath, Malheur, McKay Creek, Oregon Islands, Sheldon, Three Arch Rocks, Umatilla, Upper Klamath, and William L. Finley;

(e) National coordination areas, including but not limited to Government Island, Ochoco and Summer Lake;

(f) National and state fish hatcheries, including but not limited to Eagle Creek and Warm Springs;

(g) National recreation and scenic areas, including but not limited to Oregon Dunes National Recreation Area, Hell's Canyon National Recreation Area, and the Oregon Cascades Recreation Area, and Columbia River Gorge National Scenic Area;

(h) State parks and waysides as listed by the Oregon Department of Parks and Recreation and the Willamette River Greenway;

(i) State natural heritage areas listed in the Oregon Register of Natural Heritage Areas pursuant to ORS 273.581;

(j) State estuarine sanctuaries, including but not limited to South Slough Estuarine Sanctuary, OAR chapter 142;

(k) Scenic waterways designated pursuant to ORS 390.826, wild or scenic rivers designated pursuant to 16 U.S.C. 1271 et seq., and those waterways and rivers listed as potentials for designation;

(l) Experimental areas established by the Rangeland Resources Program, College of Agriculture, Oregon State University: the Prineville site, the Burns (Squaw Butte) site, the Starkey site and the Union site;

(m) Agricultural experimental stations established by the College of Agriculture, Oregon State University, including but not limited to:

Coastal Oregon Marine Experiment Station, Astoria.

Mid-Columbia Agriculture Research and Extension Center, Hood River.

Agriculture Research and Extension Center, Hermiston.

Columbia Basin Agriculture Research Center, Pendleton.

Columbia Basin Agriculture Research Center, Moro.

North Willamette Research and Extension Center, Aurora.

East Oregon Agriculture Research Center, Union.

Malheur Experiment Station, Ontario.

Eastern Oregon Agriculture Research Center, Burns.

Eastern Oregon Agriculture Research Center, Squaw Butte.

Central Oregon Experiment Station, Madras.

Central Oregon Experiment Station, Powell Butte.

Central Oregon Experiment Station, Redmond.

Central Station, Corvallis.

Coastal Oregon Marine Experiment Station, Newport.

Southern Oregon Experiment Station, Medford.

Klamath Experiment Station, Klamath Falls.

(n) Research forests established by the College of Forestry, Oregon State University, including but not limited to McDonald Forest, Paul M. Dunn Forest, the Blodgett Tract in Columbia County, the Spaulding Tract in the Mary's Peak area and the Marchel Tract;

(o) Bureau of Land Management areas of critical environmental concern, outstanding natural areas and research natural areas;

(p) State wildlife areas and management areas identified in OAR chapter 635, division 8.

** * **

Response: The BESS will not alter the Council's basis for its previous findings that the Facility complies with the standard, and the Facility will continue to comply with the standard if the Council approves the proposed addition of the BESS. Council previously found that PWGP, as modified by prior amendments, complies with the Protected Areas standard[13]. The analysis of potential impacts from the Facility on Protected Areas relies on an assessment of how Facility noise, traffic, water use, wastewater disposal, visual impacts, and hazardous materials may affect the specific Protected Areas listed in OAR 345-022-0040.

The protected areas analysis area extends 20 miles from the PWGP fence line and spoils disposal area (Figure 2). The BESS will not be located within any protected areas described in OAR 345-022-0040; however, there are protected areas within the 20-mile analysis area (Table 4). Two sites identified for RFA 11 were not included in previous RFAs: Barnes State Park and the ODFW and Clatsop Economic Development Council Blind Slough Net Pen. Both sites are 18 miles from the BESS.

A few sites included in RFA 7 were misidentified as state parks but are city and county parks (Ray More Park, Big Creek County Park, and Hudson Parcher County Park). Also, the Kalama Trap and Coweeman Rearing Ponds #1 and #2, identified in RFA 7, are no longer active, and the Germany Creek Project is completed. Consequently, these sites are not included in Table 4.

[13] Final Order on the Application. 2002. Pg. 74; Final Order on Amendment #7. 2010. Pg. 15; Final Order on Amendment #10. 2013. Pg. 20.

The closest protected area to the BESS is the Crims Island Unit of the Julia Butler Hansen Refuge for the Columbian White-Tailed Deer. Crims Island is 0.5 miles from the BESS and is separated from PWGP by the Bradbury Slough of the Columbia River. This site was addressed in the Final Order on Amendment 7 of March 12, 2010[14]. The Council found:

> *The new above-ground structures proposed by PGE would be similar in type and much smaller than those constructed for Unit 1. Therefore, the findings in the Final Orders apply to the structures proposed for Unit 2. The Council finds that the findings in the Final Orders are sufficient to demonstrate compliance with the Protected Areas Standard.*

The Council incorporated these findings in the Final Order of August 23, 2013 for Amendment 10. The facility changes proposed in RFA 11 do not affect the Council's previous findings. The Crims Island Unit is the closest protected area to the PWGP, and it has not been adversely impacted by the Facility. As described in other sections of RFA 11, construction and operation of the BESS will not significantly alter Facility noise, traffic, water use, wastewater disposal, visual impacts, or hazardous materials use from the previous analyses. Noise from the BESS is described in Section 7.1 of RFA 11. Traffic, wastewater disposal, and water use are described in Section 5.12. Scenic resources and visual impacts are described in Section 5.9, and hazardous materials are described in Section 5.13. Because there will be no significant difference in Facility operations in regard to these resources, the Council may rely on its prior analysis to find that the Facility as modified by RFA 11 will not adversely impact protected areas and will continue to comply with OAR 345-022-0040.

Table 4. Protected Areas within the 20-mile analysis area for the Port Westward Battery Energy Storage System Project.

Protected Area	Distance and Direction (direct path) from BESS
Abernathy Fish Tech Center	3.5 miles, NNE
Barnes State Park	18.1 miles, NE
Beaver Creek Hatchery	8.2 miles, WNW
Big Creek Hatchery	19.7 miles, W
Bradley State Scenic Viewpoint	12.6 miles, W
Blind Slough Net Pen	18.3 miles, W
Elochoman Hatchery	8.2 miles, NW
Fallert Creek Hatchery	19.9, miles, ESE
Gnat Creek Hatchery	15.1 miles, W
Julia Butler Hansen Refuge 1	12.2, miles, WNW
Julia Butler Hansen Refuge 2	0.5 miles, NE
Julia Butler Hansen Refuge 3	4.1 miles, SW

[14] Final Order on Amendment #7. 2010. Pg. 14.

Protected Area	Distance and Direction (direct path) from BESS
Julia Butler Hansen Refuge 4	3.6 miles, SW
Julia Butler Hansen Refuge 5	8.8 miles, WSW
Julia Butler Hansen Refuge 6	12.9 miles, WNW
Lewis and Clark National Wildlife Refuge	15.2 miles, WNW
OSU Research Forest Blodgett Tract	9.5 miles, SW
Seaquest State Park	18.5 miles, ENE
Trojan Rearing Ponds	17.1 miles, SE

NNE – North Northeast, NE – Northeast, WNW – West Northwest, W – West, NW – Northwest, ESE – East Southeast, W – West, SW – Southwest, WSW – West Southwest, ENE – East Northeast, SE – Southeast

8.6 Retirement and Financial Assurance – OAR 345-022-0050

OAR 345-022-0050 Retirement and Financial Assurance

To issue a site certificate, the Council must find that:

(1) The site, taking into account mitigation, can be restored adequately to a useful, non-hazardous condition following permanent cessation of construction or operation of the facility.

(2) The applicant has a reasonable likelihood of obtaining 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.

Response: In the Final Order on the ASC[15], the Council found that the Facility site could be restored adequately to a useful, non-hazardous condition following permanent cessation of construction or operation of the Facility. In accordance with Site Certificate Condition D.3(5), a letter of credit for the existing Facility is currently maintained and updated annually. In the most recent update (for 2019), the letter of credit stood at $10,840,325. The Council has previously adopted other conditions in Section D.3 of the Site Certificate to ensure compliance with the Retirement and Financial Assurance Standard. These conditions require retirement of the Facility upon permanent cessation of operations (Condition D.3(1)) in accordance with a retirement plan (Condition D.3(2)), along with related annual reporting requirements (Condition D.3(6)). The BESS will not alter the Council's basis for those findings. PGE will continue to comply with all site certificate conditions, and the Facility will continue to comply with the standard if the Council approves the proposed addition of the BESS.

The Council previously found that PGE is able to restore the site to a useful, nonhazardous condition following permanent cessation of construction or operation of the Facility. The BESS may be decommissioned before the Facility ceases operations. To the extent that additional or separate retirement and restoration processes may be used on a different timeline from the rest of the

[15] Final Order on the Application. 2002. Pg. 64.

Facility, the BESS site will be restored by using the following procedures, and final disposition of all materials will be accomplished using legal and permitted methods:

- If lithium-ion batteries are selected, they will be removed, packaged, and transported to an offsite disposal or recycling facility.
- If flow batteries are selected, they will be removed as modules containing electrolyte fluid, packaged, and transported to an offsite disposal or recycling facility. Electrolyte fluids may be nonhazardous, or may be classified as hazardous liquid, depending on the final technology selected. For purposes of estimating disposal costs, PGE assumes that disposal of hazardous liquid will be required.
- Remaining above ground system components and structures will then be dismantled using industry standard methods and transported to an offsite disposal/recycling facility.
- Concrete pads/foundations may be broken to a maximum of 3 ft below grade, excavated, and transported to an offsite disposal/recycling facility or left in place until the final decommissioning of the Facility.
- Underground utilities will be removed to a maximum of 3 ft below grade and transported to an offsite disposal/recycling facility or left in place until the final decommissioning of the Facility.
- The area will be returned to pre-construction conditions, which consists of an asphalt surface. To the extent that additional restoration may be indicated, it will be conducted at the time of final decommissioning of the Facility and is not included in this cost estimate.

Attachment 3 provides detailed cost estimates for decommissioning of the BESS. The first estimate reflects decommissioning costs should a lithium-ion BESS be selected, and totals $136,763. The second estimate reflects anticipated costs should a flow BESS be selected. Because of the volume of water and the assumption that it could be classified as hazardous waste, decommissioning the flow system is significantly more expensive, totaling $637,635. PGE has previously demonstrated—and continues to demonstrate—the ability to obtain a bond or letter of credit through annual adjustments to the Letter of Credit for the existing Facility, in accordance with Site Certificate Condition D.3(5). No new bank letter is provided with this amendment request. Either a separate letter of credit or combined letter of credit with the existing Facility will be obtained for the BESS prior to construction. PGE has proposed minor changes to Site Certificate Conditions D.3(5)(f), D.3(7), D.3(8), D.3(11), and D.3(13) in Attachment 7. PGE has proposed new Site Certificate Condition D.3(17) to require a bond or letter of credit be provided prior to beginning construction. The proposed new condition is as follows:

> ***D.3(17) Before beginning construction of the BESS authorized by the Eleventh Amended Site Certificate, the Certificate Holder shall submit a bond or letter of credit, or increase the existing bond or letter of credit, in the amount of $136,763 for a lithium-ion BESS and $637,635 for a flow BESS, adjusted as described under D.3.5(f) and D.3.5(g) [Amendment No. 11].***

Because there are existing conditions requiring recalculation of the retirement cost and updates to annual bonding, and the amount required to retire the BESS is only a small portion of the amount of the current bond, there is no reason to submit an updated letter demonstrating ability to obtain a bond or letter of credit. Accordingly, RFA 11 makes no changes that alter the basis for the Council's earlier findings; therefore, the Council may find that OAR 345-022-0050 is met.

8.7 Fish and Wildlife Habitat – OAR 345-022-0060

OAR 345-022-0060 Fish and Wildlife Habitat

To issue a site certificate, the Council must find that the design, construction and operation of the facility, taking into account mitigation, are consistent with:

(1) The general fish and wildlife habitat mitigation goals and standards of OAR 635-415-0025(1) through (6) in effect as of February 24, 2017, and

(2) For energy facilities that impact sage-grouse habitat, the sage-grouse specific habitat mitigation requirements of the Greater Sage-Grouse Conservation Strategy for Oregon at OAR 635-415-0025(7) and OAR 635-140-0000 through -0025 in effect as of February 24, 2017.

Response: The BESS will not alter the Council's basis for its previous findings that the Facility complies with the standard, and the Facility will continue to comply with the standard if the Council approves the proposed addition of the BESS. Council previously found that the Facility, as modified through RFA 10, meets the Fish and Wildlife Habitat Standard[16].

Changes to the Facility proposed in RFA 11 will not result in additional habitat impacts, and therefore the Facility continues to satisfy the standard without need for additional habitat mitigation. The BESS will be sited on a paved area (Habitat Category 6) inside the fence line of the Facility. If installation of the BESS requires soil removal, the spoils may be placed on a small portion of the spoils disposal area used during Unit 1 and Unit 2 construction. Spoils placement would involve temporary disturbance of a Category 4 grassland area that was previously disturbed during Unit 2 construction in 2014 and is currently revegetating. The previously disturbed grassland area would be revegetated per Site Certificate requirements and no habitat mitigation would be required.

Indirect impacts to wildlife habitat, such as disturbance from high noise activities, are not expected but would be avoided or minimized by existing Site Certificate measures, including:

- Employee and contractor environmental awareness training to minimize wildlife disturbance [Condition D.8(1)]
- Pre-construction surveys to locate blue heron rookeries [Condition D.8(6)] and
- Bald eagle nests [Condition D.8(7)]
- Bird nests and protected species within construction disturbance areas [Condition D.8(8), as amended]

[16] Final Order on the Application. 2002. Pg. 84; Final Order on Amendment #10. 2013. Pg. 23.

- Restoration of temporary disturbance areas and control of invasive non-native plants [Condition D.8(14) & (20)]

A PGE biologist conducted a recent survey (Andrew Bidwell, April 2, 2019) for blue heron rookeries and raptor nests within 0.25 mile of the analysis area. No heron rookeries were found. A red-tailed hawk nest, occupied by an apparently incubating adult, was found in a poplar stand approximately 100 ft south of the spoils pile. Several osprey nesting platforms are located within 0.25 mile of the analysis area. These sites have been occupied by osprey in past years, but this 2019 survey was too early in the osprey breeding season to confirm current status. A bald eagle nest occupied by an apparently incubating adult was located approximately 0.4 mile west of the analysis area in riparian forest just west of the western oil dock access. An adult bald eagle was perched above the lower Crims Island nest, more than 0.5 mile southeast of the analysis area, but no bird was visible on the nest at the time of survey. Birds nesting in these locations are accustomed to industrial activity at the site and are unlikely to be disturbed by the level of construction disturbance anticipated for the BESS. Regardless, PGE will conduct pre-construction surveys and consult with ODFW and USFWS as appropriate regarding appropriate buffer distances and disturbance minimization measures for any active raptor nests in proximity to the project if construction occurs during the breeding season. PGE has proposed minor modifications to Site Certificate Condition D.8(8) to clarify that the condition is applicable to construction of the BESS and D.8(14) to update reference to the Revegetation and Noxious Weed Control Plan.

PGE proposes that the language related to revegetation success criteria be removed from Site Certificate Condition D.8(26) and included, with modifications as appropriate and approved by Oregon Department of Fish and Wildlife (ODFW) and ODOE, in the Revegetation and Noxious Weed Control Plan[17]. PGE proposes a new Condition D.8(28) to require the development and implementation of a Revegetation and Noxious Weed Control Plan. The proposed new condition is as follows:

> ***D.8(28) The Certificate Holder shall develop and implement a Revegetation and Noxious Weed Control Plan. The Revegetation and Noxious Weed Control Plan must be approved by the Department prior to construction and may be amended from time to time by agreement of the certificate holder and the Oregon Energy Facility Siting Council ("Council"). Such amendments may be made without amendment of the site certificate. The Council authorizes the Department to agree to amendments to this plan. The Department shall notify the Council of all amendments, and the Council retains the authority to approve, reject, or modify any amendment of this plan agreed to by the Department.***

After the fourth year of monitoring PWGP Unit 2 revegetation areas, the success criteria have proven unrealistic to achieve, and ODFW has concurred (meeting with Sarah Reif, Feb 19, 2019) that the criteria in Condition D.8(26) are too stringent considering the previous condition of temporarily disturbed areas (i.e., non-native grassland) and the existing condition of undisturbed

[17] Formerly the Revegetation and Invasive Species Monitoring Plan

areas in the project vicinity. Moving the success criteria in Condition D.8(26) to the Revegetation and Noxious Weed Control Plan will allow PGE to modify success criteria and monitoring methods, as approved by ODFW and ODOE, with the objective of more realistically achievable criteria that still clearly document habitat uplift. A proposed redline of the former Revegetation and Invasive Species Monitoring Plan (PGE 2006) is attached in Attachment 4a and a clean version is in Attachment 4b.

Along with Condition D.8(26), PGE proposes that all conditions related to revegetation [Conditions D.8(19) – D.8(24)] be removed from the Site Certificate and placed in the Revegetation and Noxious Weed Control Plan. Attachment 4a indicates where each of these Conditions have been placed within the Revegetation and Noxious Weed Control Plan. Proposed new Condition D.8(28) would require PGE to implement the Revegetation and Noxious Weed Control Plan included as Attachment 4b to this RFA. Any changes to the revegetation requirements contained in the plan would require approval of ODOE and ODFW, and the Council retains the authority to approve, reject, or modify any amendment of the plan; therefore, removal of the revegetation conditions from the Site Certificate and placement in the Revegetation and Noxious Weed Control Plan does not alter the Council's basis for its previous findings that the Facility complies with the standard.

Condition D.8(11) of the site certificate requires PGE to locate chemical storage, servicing of construction and maintenance equipment and vehicles, and overnight storage of wheeled vehicles at least 330 ft from any wetland or waterway. PGE requests that this condition be modified to clarify that it now applies only to the transmission line. The 330-ft buffer is not an industry standard. Neither the Oregon Department of State Lands or Army Corps of Engineers require buffers for the activities described in this condition. The site is graded so that drainage is contained onsite and drains to onsite stormwater retention swales/ponds. If chemicals, maintenance fluids, or fluids from wheeled vehicles were to spill they would be contained onsite. The plant site is separated from the Columbia River by a levee that is at a minimum of 2 ft higher than the highest plant site elevation. Chemicals stored adequately for their volume and type of chemical do not pose a hazard to surrounding wetlands or waterbodies even if they are stored within 330-ft. Although not clearly stated within Condition D.8(11), PGE believes the original intent of the Condition was to implement BMPs during construction before site improvements were complete. The language "chemical storage, servicing of construction and maintenance equipment and vehicles, and overnight storage of wheeled vehicles" closely follows the language contained in the NPDES 1200-C permit regarding Non-stormwater Pollution Controls; the NPDES 1200-C is a construction related permit. Now that construction is complete, the construction BMP no longer fits with the developed site. Continuing to apply the Condition to the transmission corridor during maintenance is reasonable because the transmission corridor does not have the same level of improvements as the developed site. PGE's proposed modification to Site Certificate Conditions D.8(11) is as follows:

> *D.8(11) The Certificate Holder shall locate chemical storage, servicing of construction and maintenance equipment and vehicles, and overnight storage of wheeled vehicles* ***associated with construction and maintenance of the transmission line*** *at least 330 feet from any wetland or waterway. [Amendment No. 11]*

8.8 Threatened and Endangered Species – OAR 345-022-0070

OAR 345-022-0070 Threatened and Endangered Species

To issue a site certificate, the Council, after consultation with appropriate state agencies, must find that:

> *(1) For plant species that the Oregon Department of Agriculture has listed as threatened or endangered under ORS 564.105(2), the design, construction and operation of the proposed facility, taking into account mitigation:*
>
> > *(a) Are consistent with the protection and conservation program, if any, that the Oregon Department of Agriculture has adopted under ORS 564.105(3); or*
> >
> > *(b) If the Oregon Department of Agriculture has not adopted a protection and conservation program, are not likely to cause a significant reduction in the likelihood of survival or recovery of the species; and*
>
> *(2) For wildlife that the Oregon Fish and Wildlife Commission has listed as threatened or endangered under ORS 496.172(2), the design, construction and operation of the proposed facility, taking into account mitigation, are not likely to cause a significant reduction in the likelihood of survival or recovery of the species.*

Response: The BESS will not alter the Council's basis for its previous findings that the Facility complies with the standard, and the Facility will continue to comply with the standard if the Council approves the proposed addition of the BESS. Council previously found that the Facility, as amended, meets the Threatened and Endangered Species standard[18].

No state threatened or endangered plant species have been found during previous surveys of the Facility, and none are likely to occur in the developed and previously disturbed habitat categories to be impacted by the BESS. Table 5 updates current known status of threatened, endangered, and candidate species with potential to occur in the vicinity of the analysis area.

Regarding wildlife, it is possible that the federally-threatened Columbian white-tailed deer (*Odocoileus virginianus leucurus)* could forage at the spoils disposal site. However, the spoils site is not part of mapped Columbian white-tailed deer habitat, and the very small area (<1 acre) of temporary disturbance would not significantly alter the availability of foraging habitat in the vicinity. In addition, indirect impacts, such as disturbance from high noise activities, to Columbian-white tailed deer that could be using habitat in the vicinity are not expected but would be avoided or minimized by existing site certificate measures, including:

- Employee and contractor environmental awareness training to minimize wildlife disturbance [Condition D.8(1)]; and

[18] Final Order on the Application. 2002. Pg. 92; Final Order on Amendment #7. 2010. Pg. 22; Final Order on Amendment #10. 2013. Pg. 25.

- Restoration of temporary disturbance areas and control of invasive non-native plants [Condition D.8(14) & (20)].

PGE proposes that Condition D.9(9) be deleted. The condition requires PGE to obtain a Biological Opinion from the U.S. Fish and Wildlife Service before starting construction during the bald eagle nesting period. However, the bald eagle is no longer a federally listed species; therefore, Biological Opinions for this species are no longer applicable.

The changes proposed in RFA 11 will not alter the basis for Council's previous findings and therefore Council may rely on its prior analysis to conclude that the Facility, as modified by RFA 11, continues to comply with OAR 345-022-0070.

Table 5. State and Federal Listed, Candidate and Proposed Species with the Potential to Occur1 Within the Vicinity of the Port Westward Energy Project and Potential for Impact from the Proposed BESS

Species	**Federal Status**	**State Status**	**Occurrence**	**Impacts**
Columbia white-tailed deer *Odocileus virginanus leucurus*	Endangered	Sensitive Critical	Yes	No
Fisher *Pekania pennant*	Proposed Threatened	Sensitive Critical	No	No
North American wolverine *Gulo luscus*	Proposed Threatened	Threatened	No	No
Red tree vole *Arborimus longicaudus*	Candidate	No status	No	No
Northern spotted owl *Strix occidentalis caurina*	Threatened	Threatened	No	No
Marbled murrelet3 *Brachyramphus marmoratus*	Threatened	Threatened	No	No
Streaked horned lark *Eremophila alpestrtis strigata*	Threatened	No status	No	No
Yellow-billed cuckoo *Coccyzus americanus*	Threatened	No status	No	No
Howellia *Howellia aquatilis*	Threatened	Threatened	No	No
Nelson's checker-mallow *Sidalcea nelsoniana*	Threatened	Threatened	No	No
Howell's montia *Montia howellii*	Species of Concern	Candidate	No	No

Species	Federal Status	State Status	Occurrence	Impacts
Tall bugbane *Cimicifuga elata*	Species of Concern	Candidate	No	No

[1]Potential for occurrence based on searches of the USFWS IPaC database (https://ecos.fws.gov/ipac/) for the areas within 300 ft and five miles of the Site Boundary and a query of the Oregon Biological Information Center (ORBIC) database for known species occurrences within two miles of the Site Boundary (ORBIC, April 2019, Biotics Rare Species Database).
[2]Fish species were listed in the ASC Table Q-1 but have been removed from this table due to no potential for the Battery Storage project to impact aquatic habitat.
[3]Critical habitats for the marbled murrelet and streaked horned lark occur within five miles of the project site, but not within 300 ft of the project boundary.

8.9 Scenic Resources – OAR 345-022-0080

OAR 345-022-0080 Scenic Resources

(1) Except for facilities described in section (2), to issue a site certificate, the Council must find that the design, construction and operation of the facility, taking into account mitigation, are not likely to result in significant adverse impact to scenic resources and values identified as significant or important in local land use plans, tribal land management plans and federal land management plans for any lands located within the analysis area described in the project order.

** * **

Response: Council previously found that the Facility, as modified through Amendment #10, complies with the Scenic Resources Standard[19]. This finding was based on an analysis of applicable federal and local land use management plans. The prior analysis focused on resources described in the CCCP. Because the analysis area extends into the state of Washington, Wahkiakum County and Cowlitz County plans also were reviewed. Although the CCCP was last updated in November 2013, after Amendment #10 was processed, there have been no changes to scenic areas identified in the plan since the last review.

The BESS will not alter the Council's basis for its previous findings that the Facility complies with the standard, and the Facility will continue to comply with the standard if the Council approves the proposed addition of the BESS. The analysis area for scenic resources is the area within five miles of the PWGP fence line and spoils disposal area. PGE reviewed the CCCP. The plan identifies five scenic sites, two scenic highways, and two scenic views (Table 6). Only one resource falls within the five-mile analysis area: a one-mile section of Highway 47 between Pittsburg and Clatskanie (Figure 3). This section of highway is 4.8 miles from the PWGP, and the BESS will not be visible to it because of the modular containers' low profile . The BESS will not adversely impact this section of the highway.

PGE also reviewed the comprehensive plans for Cowlitz and Wahkiakum counties in Washington for scenic resources. The comprehensive plans for these counties do not designate areas of scenic value.

[19] Final Order on the Application. 2002. Pg. 96; Final Order on Amendment #7. 2010. Pg. 23; Final Order on Amendment #10. 2013. Pg. 26.

PGE called and sent letters to representatives of the Confederated Tribes of the Warm Springs Indian Reservation of Oregon, the Confederated Tribes of the Grand Ronde Community of Oregon, the Confederated Tribes of the Siletz Indian Reservation of Oregon, and the Chinook Tribe in Washington. The letters notified the representatives of our plans to install a BESS and requested their input on the BESS and scenic areas within the analysis area. As of the submitting of this application, the Confederated Tribes of the Warm Springs Indian Reservation of Oregon has responded to the letter with a request for additional investigations if there is significant ground disturbance (Attachment 5).

Table 6. Scenic resources identified in the Columbia County Comprehensive Plan (Columbia County 1984, updated Nov. 2013).

Resource	Site	Distance (direct path) & Direction from BESS
Scenic Sites	Beaver Creek Falls	5.1 miles, SSE
	Carcus Creek Falls	13.1 miles, SSE
	Lava Creek Falls	12.3 miles, S
	Clatskanie River (Apiary Falls to Carcus Creek)	12.1-9.9 miles, SSE
	Scaponia Recreation Site	22.9 miles, S
Scenic Highways	Hwy. 30 between Deer Island and Rainier	12.8-22.7 miles, ESE-SE
	Hwy. 47 between Washington County Line and Treharne Pittsburg and Clatskanie	 18.7 miles, S 4.8 miles, SSW
Scenic Views	Wayside north of Rainier on Hwy. 30	9.7 miles, ESE
	Wayside north of Rainier on Old Columbia River Hwy.	10 miles, ESE

SSE - South Southeast, SSW – South Southwest, S - South, ESE - East Southeast, SE - Southeast

In the Final Order on the Application and subsequent amendments, the certificate holder had not previously located any federal management plans to include in the scenic resources analysis. However, during the current analysis, the certificate holder determined that two units of the Julia Butler Hansen Refuge for the Columbian White-Tailed Deer, a national wildlife refuge—the Crims Island Unit and Wallace Island Unit (Figure 3) are inside the analysis area. A comprehensive conservation plan and environmental impact statement for the refuge was finalized in 2010 (USFWS 2010). PGE reviewed this plan and the units are not managed for any scenic resources. Nevertheless, the BESS will not alter PWGP's existing features that are visible to the units or create additional significant visual impacts. The Crims Island Unit is directly across from the PWGP, separated by the Bradbury Slough, but existing buildings at PWGP block the BESS from view of the island. The Wallace Unit is near the extent of the five-mile analysis area and a stacked BESS at 20 ft high will not be visible.

The BESS would have a lower profile than existing structures and would be inside the Facility fence line and adjacent to other similar structures. Although one new management plan was identified during this analysis, it does not provide for management of any scenic resources. There have been

no modifications to the other management plans that alter the management of scenic resources described in the Final Order on the Application and subsequent amendments. Therefore, the facility changes proposed in RFA 11 do not affect the basis of the Council's prior findings regarding the Facility's compliance with the Scenic Resources Standard and the Council may conclude that the Facility, as modified by RFA 11, continues to meet OAR 345-022-0080.

8.10 Historic, Cultural and Archaeological Resources – OAR 345-022-0090

OAR 345-022-0090 Hist.: Cultural and Archaeological Resources

(1) Except for facilities described in sections (2) and (3), to issue a site certificate, the Council must find that the construction and operation of the facility, taking into account mitigation, are not likely to result in significant adverse impacts to:

(a) Historic, cultural or archaeological resources that have been listed on, or would likely be listed on the National Register of Historic Places;

(b) For a facility on private land, archaeological objects, as defined in ORS 358.905(1)(a), or archaeological sites, as defined in 358.905(1)(c); and

(c) For a facility on public land, archaeological sites, as defined in ORS 358.905(1)(c).

** * **

Response: The BESS will not alter the Council's basis for its previous findings that the Facility complies with the standard, and the Facility will continue to comply with the standard if the Council approves the proposed addition of the BESS. PGE will comply with all existing Site Certificate conditions related to Cultural and Archaeological Resources in Section D.11 of the Site Certificate that are applicable to RFA 11.

Exhibit S of the Application for Site Certificate[20] included an analysis of potential historic, cultural, and archaeological resources in the vicinity of the energy facility site. As documented in the exhibit, there was one prehistoric archaeological site within the analysis area that may be eligible for listing in the National Register of Historic Places but was not in the construction impact area. Additionally, a mechanical auger survey in the vicinity of the energy facility site did not find evidence of cultural deposits, supporting the determination that construction and operation of the proposed facility would have no effect on historic, cultural, or archaeological resources.

A cultural survey of the spoils disposal area was completed in 2001 as part of the Water Discharge Alignment Reroute for PWGP. The disposal area was discussed with John Pouley of SHPO on January 11, 2019, and he confirmed no additional surveys of the area are necessary because of the nature of the site and the disturbance.

PGE will comply with all existing Site Certificate conditions related to Cultural and Archaeological Resources in Section D.11 of the Site Certificate that are applicable to RFA 11. The facility changes

[20] Application for Site Certificate. Exhibit S. 2001. Pg. S-1.

proposed in RFA 11 do not affect the basis for the Council's prior findings and therefore Council may conclude that the Facility continues to comply with OAR 345-022-0090.

8.11 Recreation – OAR 345-022-0100

OAR 345-022-0100 Recreation

(1) Except for facilities described in section (2), to issue a site certificate, the Council must find that the design, construction and operation of a facility, taking into account mitigation, are not likely to result in a significant adverse impact to important recreational opportunities in the analysis area as described in the project order. The Council shall consider the following factors in judging the importance of a recreational opportunity:

(a) Any special designation or management of the location;

(b) The degree of demand;

(c) Outstanding or unusual qualities;

(d) Availability or rareness;

(e) Irreplaceability or irretrievability of the opportunity.

** * **

Response: The BESS will not alter the Council's basis for its previous findings that the Facility complies with the standard, and the Facility will continue to comply with the standard if the Council approves the proposed addition of the BESS.

The analysis area for recreational opportunities is a 5-mile radius from the PWGP fence line. Our analysis has shown that the recreational sites and opportunities have not changed greatly from the last analysis in the ASC. No federal or state parks occur within the analysis area. There are two county parks, two city parks, a boat ramp owned and operated by the Oregon Department of Fish and Wildlife, a technology center operated by the US Fish and Wildlife Service, and two points of interest (Table 7 & Figure 4). One new site was added, a city park – the Willow Grove Boat Ramp and Park. It is in Longview, WA, and is 4.2 miles from the BESS.

Existing recreational opportunities within the analysis area include the Columbia River, Clatskanie River, and numerous sloughs within the area from Clatskanie to Quincy. There have been no changes to the previously analyzed recreational opportunities that modify the relevant factors of management, demand, unusual qualities, rareness, or irreplaceability. The proposed BESS will not adversely impact any existing facilities within the analysis area and there will be no loss of recreational use. The proposed modifications to PWGP will not detract from recreational opportunities generally available in the vicinity such as fishing, waterfowl hunting, hiking, cycling, and boating. Hunting and other recreational activities are not allowed in the Port Westward Industrial Area.

Facility changes proposed in RFA 11 do not affect the basis for the Council's previous findings, and there have been no changes to the recreational resources that would alter the analysis of Facility impacts on those resources. The modifications proposed under RFA 11 will not adversely affect any recreational resources within the analysis area. Therefore, the Council may find that the Facility, as modified by RFA 11, will continue to comply with OAR 345-022-0100.

Table 7. Recreational sites and opportunities within the five-mile analysis area for the Port Westward Battery Energy Storage System.

Recreation Site	Type	Distance (direct path) and direction
Abernathy Fish Tech Center	Technology Center	3.5 miles, NNE
Abernathy Point	Point of Interest	0.9 miles, NNE
Beaver Boat Ramp and Park	County Park	5.2 miles, SSW
Clatskanie City Park	City Park	5.3 miles, SWW
County Line Park	County Park	2.3 miles, W
Mayger Boat Ramp	Boat Ramp	3.4 miles, ESE
Mill Creek	Point of Interest	0.7 miles, N
Willow Grove Boat Ramp and Park	City Park	4.2 miles, E

NNE – North Northeast, SSW – South Southwest, W – West, ESE – East Southeast, N – North, E – East

8.12 Public Services – OAR 345-022-0110

OAR 345-022-0110 Public Services

(1) Except for facilities described in sections (2) and (3), to issue a site certificate, the Council must find that the construction and operation of the facility, taking into account mitigation, are not likely to result in significant adverse impact to the ability of public and private providers within the analysis area described in the project order to provide: sewers and sewage treatment, water, storm water drainage, solid waste management, housing, traffic safety, police and fire protection, health care and schools.

** * **

Response: The Council previously analyzed the existing Facility's impacts to public services in the Final Order on the ASC, Final Order on Amendment 7, and Final Order on Amendment 10.

In the Final Order on the ASC, the Council found that, with the imposition of conditions in Section D.13, the design, construction, and operation of the Facility were not likely to result in significant adverse impacts to public services listed in OAR 345-022-0110(1).[21]

[21] Final Order on the Application. 2002. Pg. 103-114.

In the Final Order on Amendment 7, the Council found that, with the incorporation of a revised Condition D.13(2), the design, construction, and operation of Unit 2 were not likely to result in significant adverse impacts to public services listed in OAR 345-022-0110(1).[22]

The Council imposed no new conditions or revisions in the Final Order on Amendment 10. Columbia County staff had commented on RFA 10, stating that they did not have any public service concerns.[23] Individual public services were last evaluated in Final Order on the Application, and subsequent amendments found that the Facility complied with the public service standard OAR 345-022-0110(1).

The addition of battery storage does not alter the basis for the analysis conducted to support issuance of the Site Certificate and subsequent amendments and would not alter the potential impacts of the Facility on the public services listed in OAR 345-022-0110(1). Construction of the BESS would involve a maximum of 20 employees, and an average of 10 employees over a 12-month construction schedule. No new, permanent employees would be required on-site to operate the Facility. The addition of the BESS adds another element to the analysis for fire protection, but existing Site Certificate conditions are sufficient to meet the Public Services Standard, as described below. Additionally, the BESS will be restricted from public access through fencing and security, will have a technology-appropriate fire detection and suppression system, and will be operated and maintained by trained and skilled personnel. The existing Facility Emergency Response Plan will be updated to include the BESS.

8.12.1 Sewers/Sewage Treatment

In the Final Order on the ASC, the Council found that construction and operation of the Facility would not result in any significant adverse impact on the ability of local sewage collection and treatment systems to serve their other users.[24] The BESS will not alter the Council's basis for that finding. PGE installed an engineered septic system that can accommodate 500 gallons per day. This system will be sufficient to accommodate temporary needs during construction, and PGE will hire a contractor to provide chemical toilet facilities during construction of the BESS, should the need arise, in compliance with Condition D.13(1). There may be a small, temporary increase in demand on sewage services during construction of the proposed BESS; no new on-site staff are planned for operation and maintenance of the BESS and, therefore, no long-term impacts to sewer collection and treatment are anticipated.

8.12.2 Water

In the Final Order on the ASC, the Council found that construction and operation of the Facility would not result in any significant adverse impact on the ability of the local water system to serve

[22] Final Order for Amendment No. 7. 2010. Pg. 24.
[23] Final Order on Amendment No. 10. 2013. Pg. 29.
[24] Final Order on the Application. 2002. Pg. 103-104.

its other users.[25] The BESS will not alter the Council's basis for that finding. Water will continue to be obtained from the Port Westward intake under an existing water right. The water right has a permitted point of diversion on Bradbury Slough, where PGE currently withdraws water and where it would continue to withdraw for the proposed BESS. PGE owns and operates the existing intake structure, which was enhanced with the addition of pumps. This system will continue to supply water to the Facility.

Water amounts needed for the construction and operation of the proposed BESS are predicted to be minimal and will not require water supply in excess of that permitted by PGE's existing water right. Water for dust suppression, if needed, will be minimal and obtained from existing PWGP water taps. No new staff will be hired to support the Facility, and no water will be needed on an ongoing basis. An aerosol or chemical-based fire suppression system specific to the BESS may be installed. If the fire suppression system uses water, it would be obtained with a single withdrawal from the existing water right and would not increase water demand for the Port Westward plant on an ongoing basis. Due to the water amounts predicted for operation and maintenance of the proposed BESS, no new impacts to water service will occur.

8.12.3 Solid Waste Management

In the Final Order on the ASC, the Council found that construction and operation of the Facility would not have a significant adverse impact on the capacity of solid waste facilities in the analysis area.[26] The BESS will not alter the Council's basis for that finding. Solid waste for the Facility will continue to be hauled to a transfer station in St. Helens, where the waste is compacted before being transferred to the River Bend Landfill in McMinnville, Oregon. Although the BESS will consist of self-contained storage containers, and therefore will generate little waste during construction, a relatively small amount of waste would be generated in the form of packaging materials and construction debris (e.g., waste concrete from foundation construction).

Any excess soil produced during construction would be either trucked offsite or disposed of at the pre-approved spoils disposal area. During operation, a small amount of waste could be periodically generated in the form of batteries requiring replacement. When the BESS is decommissioned, materials, including battery cell components, will be recycled to the extent practicable determined by the accessibility of battery recycling at the time the service is needed. Retirement of the BESS will produce waste in the form of materials that cannot be recycled but will be small in comparison to the overall Facility. Due to the waste amounts predicted, and with no new permanent on-site staff planned for the proposed BESS, significant new impacts to solid waste management are not anticipated.

[25] Final Order on the Application. 2002. Pg. 104.
[26] Final Order on the Application. 2002. Pg. 104-105.

8.12.4 Housing

In the Final Order on the ASC, the Council found that, although the availability of permanent housing in the analysis area is limited, sufficient housing is available in the local area to accommodate the construction and operation of the Facility.[27] The BESS will not alter the Council's basis for that finding. Housing is currently available around the Facility, primarily near the local areas of Longview and Kelso, Washington. An estimated 1,586 housing units were available in 2017 in the communities of Prescott and Rainier in Oregon (60 units) and Kelso and Longview in Washington (1,526 units); all these communities are within commutable distance.[28] These vacant units will be sufficient to accommodate the small number of new temporary employees during construction. There may be a small, temporary increase in housing demand during construction of the proposed BESS; no new on-site staff are planned for operation and maintenance of the proposed BESS, and therefore no long-term impacts to housing are anticipated.

8.12.5 Traffic Safety

In the Final Order on the ASC, the Council found that construction and operation of the Facility, with appropriate mitigation measures, would not adversely affect traffic in the analysis area.[29] The BESS will not alter the Council's basis for that finding. Site Certificate Conditions D.13(2) – D.13(7) (as written in the Final Order on the ASC) and the Amended Traffic Improvement Agreement will continue to be enforced for the proposed BESS. Any transportation and supply routes for the BESS are anticipated to be the same as previously approved by the Council. There will be a small, temporary increase in traffic during construction of the proposed BESS; however, no additional on-site staff are planned for operation and maintenance of the proposed BESS. Approximately 40 delivery vehicles would be needed during construction to deliver containers, electrical equipment, and concrete to the site. The proposed BESS will generate minimal amounts of additional traffic because it will not require the ongoing, regular restocking of supplies or removal of waste products. Therefore, no long-term impacts to traffic are anticipated as a result of construction and operation of the BESS.

8.12.6 Police Protection

In the Final Order on the ASC, the Council found that the construction and operation of the Facility would not place significant additional demand on local police protection services.[30] The BESS will not alter the Council's basis for that finding. The Columbia County Sheriff's Department and Oregon State Police will continue to provide the Facility with first-response police protection. The Facility will remain fenced and have staff on-site 24 hours per day. There will be a potential small,

[27] Final Order on the Application. 2002. Pg. 105.
[28] U.S. Census Bureau. 2017. American Community Survey 5-Year Estimates. http://factfinder.census.gov/.
[29] Final Order on the Application. 2002. Pg. 105-111.
[30] Final Order on the Application. 2002. Pg. 111-112

temporary increase in demand on law enforcement services during construction of the proposed BESS; no new on-site staff are planned for operation and maintenance of the BESS, and therefore no long-term impacts to police protection are anticipated.

8.12.7 Fire Protection

In the Final Order on the ASC, the Council found that construction and operation of the Facility would not significantly affect the Clatskanie Rural Fire Department's ability to provide fire protection service within the analysis area.[31] The BESS will not alter the Council's basis for that finding.

If lithium-ion batteries are chosen, the addition of the BESS introduces a new element that could pose a fire hazard; flow batteries do not present a flammability hazard. Lithium-ion battery systems are designed to prevent fire by detailed electronic monitoring of battery function, so that the electrical connection to the batteries will be shut down if battery function or temperature is outside of the allowable operating range, and operators will be alerted to respond to anomalies before they become unsafe. In the unlikely event that a fire does occur, the systems are designed to prevent the spread of fire between battery modules by virtue of their physical arrangement and by employing barriers within the enclosure. Enclosures have adequate internal fire protection and temperature control to contain the heat and flames. Depending on the final design of the BESS, a clean agent system that disperses an inert gas that poses a low health risk to those responding to a fire will likely be installed. Other possible systems include a gas-pressured deluge system or dry pipe system. If selected, a gas-pressured deluge system is designed to simultaneously discharge water from all sprinkler heads as soon as the system is activated. An independent detector system (such as a heat detector or smoke detector) will control system activation. A dry pipe system, in which the installation pipe work is permanently charged with gas under pressure above the alarm valve, is often installed in cold climates where pipes could freeze. In such a system, the gas pressure drops when a sprinkler head opens, allowing the dry pipe valve to open and admit water to the system.

If flow batteries are chosen, appropriate extinguishing media include water spray, alcohol-resistant foam, a dry chemical, or carbon dioxide. However, flow batteries do not pose a flammability hazard, and therefore, require less complex suppression system compared to lithium-ion batteries.

In addition, the following measures will be implemented for lithium-ion battery systems to minimize fire and safety risks:

- The battery systems will be stored in completely contained, leak-proof modules, each with a heating, ventilation, and air conditioning system; a fire detection and suppression system; and an underground conduit to contain all wiring.
- Operations and maintenance staff will conduct frequent inspections of the battery systems according to the manufacturer's recommendations.

[31] Final Order on the Application. 2002. Pg. 112-113.

- Per Condition D.13(8), battery storage and fire protection systems will comply with applicable standards specified by the Columbia County building department through the permitting process, which will include the Uniform Fire Code, as amended by Oregon and the National Fire Protection Association standards, and all other applicable fire protection standards in effect at the time of construction.
- The Facility's existing Emergency Response Plan will be modified as appropriate with response procedures specific to the BESS in the event of an emergency such as a fire. Updated Emergency Response Plans will be shared with the local fire protection providers.

The proposed on-site fire protection measures are consistent with battery manufacturer recommendations and with fire codes applicable to battery storage systems. The Facility will be designed to be completely automated and report failure problems via SCADA to PGE operators. A fire alarm panel at the BESS will connect to the Facility Control Room so that operators are able to receive, acknowledge, and silence alarms and initiate the appropriate human response. The Clatskanie Rural Fire Department and the St. Helens Fire District will continue to provide service to the Facility.

Transportation of lithium-ion batteries is subject to 49 Code of Federal Regulations 173.185 – Department of Transportation Pipeline and Hazardous Material Administration. The regulations include requirements for the prevention of a dangerous evolution of heat, short circuits, and damage to the terminals, and require that no battery come in 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 the batteries.

The on-site fire protection measures incorporated in the BESS are expected to meet fire protection needs associated with the Facility, without generating significant new service demands on the local fire districts. Therefore, the Council may conclude that addition of the BESS does not result in significant new impacts on local fire protection providers.

8.12.8 Health Care

In the Final Order on the ASC, EFSC found that the construction and operation of the Facility would not adversely affect medical services in the analysis area.[32] The BESS will not alter the Council's basis for that finding. The nearest hospital, the St. Johns Medical Center in Longview, Washington, will continue to accommodate the Facility and provide ambulance and life flight services within the analysis area. Emergency medical services will continue to be provided by the Clatskanie Rural Fire Department. Additionally, there are numerous full-service medical facilities in the City of Portland that are accessible by life flight in less than half an hour. No new on-site staff are planned for

[32] Final Order on the Application. 2002. Pg. 113.

operation and maintenance of the proposed BESS; therefore, no long-term impacts to health care are anticipated.

8.12.9 Schools

In the Final Order on the ASC, EFSC found that the construction and operation of the Facility would not adversely affect school districts in the analysis area.[33] The BESS will not alter the Council's basis for that finding. The Facility is within the Clatskanie School District, which operates an elementary school and a middle/high school; both schools are still found to be operating below their designed capacities. The BESS will not cause the demand for schools to increase because no new, permanent on-site staff are planned for the proposed BESS; therefore, the BESS will not create additional impacts to schools.

8.12.10 Conclusion

Construction, operation and maintenance, and retirement of the BESS will not alter the Facility's impact on public services, and the proposed changes do not alter the basis for the Council's previous findings that the Facility complies with the Public Services Standard. The Facility, as modified by RFA 11, will not result in any new significant adverse impacts to the ability of public and private providers within the analysis area to provide services. Therefore, the Council can find that the Facility as modified by RFA 11 will continue to comply with the Public Services Standard under OAR 345-022-0110.

8.13 Waste Minimization OAR 345-022-0120

OAR 345-022-0120 Waste Minimization

(1) Except for facilities described in sections (2) and (3), to issue a site certificate, the Council must find that, to the extent reasonably practicable:

> *(a) The applicant's solid waste and wastewater plans are likely to minimize generation of solid waste and wastewater in the construction and operation of the facility, and when solid waste or wastewater is generated, to result in recycling and reuse of such wastes;*
>
> *(b) The applicant's plans to manage the accumulation, storage, disposal and transportation of waste generated by the construction and operation of the facility are likely to result in minimal adverse impact on surrounding and adjacent areas.*

** * **

Response: The BESS will not alter the Council's basis for its previous findings that the Facility complies with the standard, and the Facility will continue to comply with the standard if the Council approves the proposed addition of the BESS. PGE proposes a minor modification to Condition

[33] Final Order on the Application. 2002. Pg. 113.

D.14(2) to address the potential use of lithium-ion battery cells. The proposed change to the condition is as follows:

> *D.14(2) During construction, operation and retirement of the energy facility, the Certificate Holder shall segregate all used oil, mercury-containing lights**;** and lead-acid, **lithium-ion,** and nickel cadmium batteries, store such materials on-site, and deliver such materials to a recycling firm specializing in the proper disposal of such materials.*

Construction of the BESS will generate concrete waste from the construction of concrete pads for container and inverter support, erosion control materials, and packaging materials. Paints, adhesives, and lubricants may also be used during construction. However, the quantity of these chemicals brought onsite will be limited because of the size of the BESS. The contractor will be responsible for disposing of the chemicals after construction. If excess soil is produced during construction, it would be transported offsite or disposed of at the spoils disposal area, which the Council approved in the Final Order on Amendment No. 3.

Operation of the BESS may generate incidental waste from the repair or replacement of electrical equipment, as well as periodic replacement of the batteries. PGE expects lithium-ion batteries to last between 7 and 10 years and flow-batteries to last between 10 and 20 years. Self-contained battery components (modules) will be removed and disposed of/recycled by a qualified vendor as needed to keep the Facility operational. Battery modules will be transported intact. The modules will be recycled or disposed as appropriate within the approved destination facility. PGE does not anticipate the routine, on-site storage of spent batteries.

Potentially hazardous materials associated with the BESS would be the lithium battery cells if selected, which could contain lithium-ion electrolyte gel or liquid. If flow batteries are selected, they may contain hazardous electrolyte fluid. The fire suppression system could contain fire-suppressing chemicals. Containment of leaks or spills of hazardous material will be incorporated into the battery container design. Distribution transformers may contain either a natural ester or mineral oil. Oils will be managed in accordance with the existing site SPCC plan.

Non-hazardous materials associated with the BESS include the battery module cases, storage racks, the electrical wiring used to connect the battery modules to the switchgear, up to five 10-foot by 40-foot metal containers, at least two transformers and one bi-directional inverter for each container, one cooling system for each container, and electrical cabling to connect the container systems to the transformers, inverters, and the substation.

The information provided here demonstrates that construction and operation of the BESS would not significantly alter the basis for the Council's prior findings that the Facility complies with the Waste Minimization Standard. Solid waste and wastewater would be managed to minimize generation of these materials and to recycle them where practicable. No new significant adverse impact on surrounding and adjacent areas would occur as a result of accumulation, storage, disposal, and transportation of waste generated by the BESS. Therefore, the Council may find that the Facility, as modified by RFA 11, continues to comply with the Waste Minimization Standard under OAR 345-022-0120.

9 Division 24 Standards – OAR 345-027-0060(1)(e)

OAR 345-024-0500 General

To issue a site certificate, the Council must find that the energy facility complies with any applicable carbon dioxide emissions standard adopted by the Council or enacted by statute. The Council shall adopt standards for fossil-fueled power plants and may adopt carbon dioxide emission standards for other energy facilities that emit carbon dioxide.

Response: The BESS will not alter carbon dioxide emissions from the Facility and, therefore, does not alter the Council's basis for finding that the Facility complies with carbon dioxide emission standards. PGE demonstrates compliance with carbon dioxide emissions standards in Sections 9.1 through 9.2.

9.1 Carbon Dioxide Standard for Base Load Gas Plants - OAR 345-024-0550

OAR 345-024-0550 Standard for Base Load Gas Plants

To issue a site certificate for a base load gas plant designed with power augmentation technology as defined in OAR 345-001-0010, the Council shall apply the standard for a non-base load power plant, as described in OAR 345-024-0590, to the incremental carbon dioxide emissions from the designed operation of the power augmentation technology. The Council shall determine whether the base load carbon dioxide emissions standard is met as follows:

(1) The Council shall determine the gross carbon dioxide emissions that are reasonably likely to result from the operation of the proposed energy facility. The Council shall base such determination on the proposed design of the energy facility. The Council shall adopt site certificate conditions to ensure that the predicted carbon dioxide emissions are not exceeded on a new and clean basis.

(2) For any remaining emissions reduction necessary to meet the applicable standard, the applicant may elect to use any of the means described in OAR 345-024-0560, or any combination thereof. The Council shall determine the amount of carbon dioxide or other greenhouse gas emissions reduction that is reasonably likely to result from the applicant's offsets and whether the resulting net carbon dioxide emissions meet the applicable carbon dioxide emissions standard. The amount of greenhouse gas emissions means the pounds of carbon dioxide and the carbon dioxide equivalent of other greenhouse gases. For methane, one pound of methane is equivalent to 25 pounds of carbon dioxide. For nitrous oxide, one pound of nitrous oxide is equivalent to 298 pounds of carbon dioxide.

(3) If the applicant elects to comply with the standard using the means described in OAR 345-024-0560(2), the Council shall determine the amount of greenhouse gas emissions reduction that is reasonably likely to result from each of the proposed offsets. In making this determination, the Council shall not allow credit for offsets that have already been allocated or awarded credit for greenhouse gas emissions reduction in another regulatory setting. The fact that an applicant or other parties involved with an offset may derive benefits from the offset other than the reduction of greenhouse gas emissions is not, by itself, a basis for withholding credit for an offset. The Council shall base its determination of the amount of greenhouse gas emission reduction on the following criteria and as provided in OAR 345-024-0680:

(a) The degree of certainty that the predicted quantity of greenhouse gas emissions reduction will be achieved by the offset.

(b) The ability of the Council to determine the actual quantity of greenhouse gas emissions reduction resulting from the offset, taking into consideration any proposed measurement, monitoring and evaluation of mitigation measure performance.

(c) The extent to which the reduction of greenhouse gas emissions would occur in the absence of the offsets.

(4) Before beginning construction, the certificate holder shall notify the Department of Energy in writing of its final selection of a gas turbine vendor and shall submit a written design information report to the Department sufficient to verify the facility's designed new and clean heat rate and its nominal electric generating capacity at average annual site conditions for each fuel type. In the report, the certificate holder shall include the proposed limits on the annual average number of hours of facility operation on distillate fuel oil, if applicable. In the site certificate, the Council may specify other information to be included in the report. The Department shall use the information the certificate holder provides in the report as the basis for calculating, according to the site certificate, the amount of greenhouse gas emissions reductions the certificate holder must provide under OAR 345-024-0560.

Response: In the Final Order on the ASC, the Council found that the design, construction, and operation of PWGP complies with the Carbon Dioxide Standard for Base Load Gas Plants. In the Final Order on Amendment 10, the Council found that the Facility continues to comply with the standard. After issuing the Final Order on Amendment 10, the Council amended OAR 345-024-0590, in 2018. The BESS does not emit carbon dioxide or alter any part of the Facility that emits carbon dioxide and, therefore, does not alter the Council's basis for those findings.

The facility changes proposed in RFA 11 do not alter the Council's prior findings regarding the Facility's compliance with the Carbon Dioxide Standard for Base Load Gas Plants; therefore, the Facility continues to comply.

9.2 Carbon Dioxide Standard for Non-Base Load Power Plants - OAR 345-024-0590

OAR 345-024-0590 Standard for Non-Base Load Power Plants

To issue a site certificate for a non-base load power plant, the Council must find that the net carbon dioxide emissions rate of the proposed facility does not exceed 0.614 pounds of carbon dioxide per kilowatt-hour of net electric power output, with carbon dioxide emissions and net electric power output measured on a new and clean basis. For a base load gas plant designed with power augmentation technology as defined in OAR 345-001-0010, the Council shall apply this standard to the incremental carbon dioxide emissions from the designed operation of the power augmentation technology. The Council shall determine whether the carbon dioxide emissions standard is met as follows:

(1) The Council shall determine the gross carbon dioxide emissions that are reasonably likely to result from the operation of the proposed energy facility. The Council shall base such determination on the

proposed design of the energy facility, the limitation on the hours of generation for each fuel type and the average temperature, barometric pressure and relative humidity at the site during the times of the year when the facility is intended to operate. For a base load gas plant designed with power augmentation technology, the Council shall base its determination of the incremental carbon dioxide emissions on the proposed design of the facility, the proposed limitation on the hours of generation using the power augmentation technology and the average temperature, barometric pressure and relative humidity at the site during the times of the year when the facility is intended to operate with power augmentation technology. The Council shall adopt site certificate conditions to ensure that the predicted carbon dioxide emissions are not exceeded on a new and clean basis; however, the Council may modify the parameters of the new and clean basis to accommodate average conditions at the times when the facility is intended to operate and technical limitations, including operational considerations, of a non-base load power plant or power augmentation technology or for other cause.

(2) For any remaining emissions reduction necessary to meet the applicable standard, the applicant may elect to use any of the means described in OAR 345-024-0600 or any combination thereof. The Council shall determine the amount of carbon dioxide or other greenhouse gas emissions reduction that is reasonably likely to result from the applicant's offsets and whether the resulting net carbon dioxide emissions meet the applicable carbon dioxide emissions standard. The amount of greenhouse gas emissions means the pounds of carbon dioxide and the carbon dioxide equivalent of other greenhouse gases. For methane, one pound of methane is equivalent to 25 pounds of carbon dioxide. For nitrous oxide, one pound of nitrous oxide is equivalent to 298 pounds of carbon dioxide.

(3) If the applicant elects to comply with the standard using the means described in OAR 345-024-0600(2), the Council shall determine the amount of greenhouse gas emissions reduction that is reasonably likely to result from each of the proposed offsets. In making this determination, the Council shall not allow credit for offsets that have already been allocated or awarded credit for greenhouse gas emissions reduction in another regulatory setting. The fact that an applicant or other parties involved with an offset may derive benefits from the offset other than the reduction of greenhouse gas emissions is not, by itself, a basis for withholding credit for an offset. The Council shall base its determination of the amount of greenhouse gas emission reduction on the following criteria and as provided in OAR 345-024-0680:

> *(a) The degree of certainty that the predicted quantity of greenhouse gas emissions reduction will be achieved by the offset.*
>
> *(b) The ability of the Council to determine the actual quantity of greenhouse gas emissions reduction resulting from the offset, taking into consideration any proposed measurement, monitoring and evaluation of mitigation measure performance.*
>
> *(c) The extent to which the reduction of greenhouse gas emissions would occur in the absence of the offsets.*

(4) Before beginning construction, the certificate holder shall notify the Department of Energy in writing of its final selection of an equipment vendor and shall submit a written design information report to the Department sufficient to verify the facility's designed new and clean heat rate and its nominal electric generating capacity at average annual site conditions for each fuel type. For a base load gas plant designed with power augmentation technology, the certificate holder shall include in the report information sufficient to verify the facility's designed new and clean heat rate, tested under

parameters the Council orders pursuant to section (1), and the nominal electric generating capacity at average site conditions during the intended use for each fuel type from the operation of the proposed facility using the power augmentation technology. The certificate holder shall include the proposed limit on the annual average number of hours for each fuel used, if applicable. The certificate holder shall include the proposed total number of hours of operation for all fuels, subject to the limitation that the total annual average number of hours of operation per year is not more than 6,600 hours. In the site certificate, the Council may specify other information to be included in the report. The Department shall use the information the certificate holder provides in the report as the basis for calculating, according to the site certificate, the gross carbon dioxide emissions from the facility and the amount of greenhouse gas emissions reductions the certificate holder must provide under OAR 345-024-0600.

(5)

> *(a) Every five years after commencing commercial operation, the certificate holder shall report to the Council the facility's actual gross carbon dioxide emissions. The certificate holder shall calculate actual gross carbon dioxide emissions using the new and clean heat rate and the actual hours of operation on each fuel during the five-year period or shall report to the Council the actual measured or calculated carbon dioxide emissions as reported to either the Oregon Department of Environmental Quality or the U.S. Environmental Protection Agency pursuant to a mandatory carbon dioxide emissions reporting requirement.*
>
> *(b) The certificate holder shall specify its election of method used to measure or calculate carbon dioxide emissions in the notification report described at section (4) of this rule. That election, once made, shall apply for each five year period unless the site certificate is amended to allow a different election. If the certificate holder calculates actual carbon dioxide emissions using the new and clean heat rate and the actual hours of operation, the certificate holder shall also report to the Council the facility's actual annual hours of operation by fuel type. If the actual gross carbon dioxide emissions exceed the projected gross carbon dioxide emissions for the five-year period calculated under section (4), the certificate holder shall offset any excess emissions for that period and shall offset estimated future excess carbon dioxide emissions using the monetary path as described in OAR 345-024-0600(3) and (4) or as approved by the Council.*

(6) For a base load gas plant designed with power augmentation technology, every five years after commencing commercial operation, the certificate holder shall report to the Council the facility's actual hours of operation using the power augmentations technology for each fuel type. If the actual gross carbon dioxide emissions, calculated using the new and clean heat rate, tested under parameters the Council orders pursuant to section (1), and the actual hours of operation using the power augmentation technology on each fuel during the five-year period exceed the projected gross carbon dioxide emissions for the five-year period calculated under section (4), the certificate holder shall offset any excess emissions for that period and shall offset estimated future excess carbon dioxide emissions using the monetary path as described in OAR 345-024-0600(3) and (4) or as approved by the Council.

Response: In the Final Order on the ASC, the Council found that the design, construction, and operation of the PWGP complies with the Carbon Dioxide Standard for Non-Base Load Gas Plants. In

the Final Order on Amendment 10, the Council found that the Facility continued to comply with the standard. In the Final Order on Amendment 7, the Council adopted additional findings and Site Certificate conditions to address the construction and operation of Unit 2 as a non-base load power plant. After issuing the Final Order on Amendment 10, the Council amended OAR 345-024-0590, in 2018. The BESS does not emit carbon dioxide or alter any part of the facility that emits carbon dioxide and, therefore, does not alter the Council's basis for its previous findings or trigger an analysis under the new standard.

The facility changes proposed in RFA 11 do not alter the Council's prior findings regarding PWGP's compliance with the Non-Base Load Power Plant Carbon Dioxide Standard; therefore, the Facility continues to comply.

10 Other Applicable Requirements – OAR 345-027-0060(1)(e)

10.1 Noise Control Regulations

OAR 340-035-0035 Noise Control Regulations for Industry and Commerce

(1) Standards and Regulations:

** * **

(b) New Noise Sources:

(A) New Sources Located on Previously Used Sites. No person owning or controlling a new industrial or commercial noise source located on a previously used industrial or commercial site shall cause or permit the operation of that noise source if the statistical noise levels generated by that new source and measured at an appropriate measurement point, specified in subsection (3)(b) of this rule, exceed the levels specified in Table 8, except as otherwise provided in these rules. For noise levels generated by a wind energy facility including wind turbines of any size and any associated equipment or machinery, subparagraph (1)(b)(B)(iii) applies.

Response: The BESS will not alter the Council's basis for its previous findings that the Facility complies with the standard, and the Facility will continue to comply with the standard if the Council approves the proposed addition of the BESS. All new noise impacts will comply with DEQ's applicable noise control standards.

Noise from construction activities associated with BESS will generally be of lesser magnitude and duration than construction of Units 1 and 2. Noisy construction activities will be limited to daytime hours. In the event nighttime construction is required for specific activities, such as certain interconnections where it is advantageous to de-energize when electrical demands are minimal, activities will be of limited duration and limited to operations such as wire splicing, which would not exceed the existing noise limits summarized in Table 8.

Table 8. Port Westward Noise Limits

Site	Description	Noise Limit (L_{50}, dBA)
1	18645 Hermo Road (Oregon)	50
2	80869 Kallunki Road (Oregon)	43
5	128 Kathy Road (Washington)	50
6	108 Kathy Road (Washington)	44
7	233 Eagle Crest Drive (Washington)	48

dBA = decibel (A-weighted scale)

The BESS will add components to PWGP that emit a low level of sound compared to the equipment already operating at Port Westward. Operation of the entire BESS, including inverters associated HVAC and transformers, is specified to yield a sound level of no more than 65 decibels (A-weighted scale) (dBA) at 50 ft. This is similar in sound level to individuals standing 3 ft from each other having a normal conversation (Loudness Comparison Chart). Table 9 adds the predicted BESS system noise to the existing operational sound levels documented at Port Westward by an Oregon Professional Engineer (CH2M HILL Engineers, Inc., 2015). The BESS sound predictions only consider geometric spreading losses and do not account for potential additional reductions afforded by shielding from intervening structures, terrain nor atmospheric absorption. The results summarized in Table 9 document that the addition of BESS is predicted to comply with the Site Certification Condition E.1.a.7.

Given the low level of sound associated with the construction and operation of BESS, no changes to the Conditions of Certification addressing noise are proposed, and no additional operational sound monitoring is required.

Table 9. BESS and Port Westward Operational Sound Levels (L50, dBA)

Site	Description	PW1 + PW2 + Ambient	BESS	BESS + PW1 + PW2 + Ambient	Noise Limit (L50, dBA)	Comply with Limit
1	18645 Hermo Road (Oregon)	34	24	34	50	Yes
2	80869 Kallunki Road (Oregon)	36	24	36	43	Yes
5	128 Kathy Road (Washington)	40	23	40	50	Yes
6	108 Kathy Road (Washington)	39	24	39	44	Yes
7	233 Eagle Crest Drive (Washington)	42	26	42	48	Yes

10.2 Removal-Fill Law

A removal-fill permit is required if an activity that will fill or remove 50 cubic yards or more of material in a wetland or water of the state. (ORS 196.795-196.990 and OAR 141-085). PGE completed wetland surveys in the areas around the BESS and the spoils disposal area (Attachment 6). The surveys concluded there are no wetlands or waterways located within the proposed location of the BESS or the spoils disposal area. Consequently, a removal-fill permit is not needed for the changes proposed in RFA 11.

10.3 Water Pollution Control Facilities Permit

When the Facility initially obtained a Site Certificate the development of an onsite sewage treatment system incorporating a septic tank, dosing tank, and bottomless sand filter was considered a form of wastewater discharge that required a Water Pollution Control Facilities (WPCF) Permit from DEQ. The WPCF permit is a state level permit that falls under Council jurisdiction. The Site Certificate included two Conditions related to the WPCF permit; Condition E.1.d(1) required PGE to demonstrate before beginning construction that DEQ had issued a permit allowing for on-site sanitary waste disposal and Condition E.1.d(2) requires PGE to comply with state laws and rules applicable to WPCF Permits that are adopted in the future. In March of 2014 PGE received a letter from DEQ to inform PGE of revisions to OAR 340-071 that allowed for the termination of the WPCF permit and conversion to oversight by Columbia County provided specific requirements were met. PGE provided the necessary documentation and forms to DEQ and the WPCF permit was terminated. PGE has proposed a modification to the Wastewater Section in Section C.1.a to reflect that the septic system is now under the oversight of Columbia County. PGE is not proposing any modifications to the site certificate conditions related to WPCF permit because Condition E.1.d(1) was complied with before beginning construction and PGE will continue to comply with Condition E.1.d(2) if changes to state laws and rules result in a WPCF permit being required in the future.

11 Property Owners List – OAR 345-027-0060(1)(f)

OAR 345-027-0060 Preliminary Request for Amendment

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

** * **

(f) An updated list of the owners of property located within or adjacent to the site of the facility, as described in OAR 345-021-0010(1)(f).

Response: This list is provided in Attachment 8.

12 References

CH2M HILL Engineers, Inc. 2015. *Port Westward 2: Operational Noise Compliance*. Submitted to ODOE by PGE to satisfy Port Westward 2's Site Certificate Noise Condition E.1.a.7. January 23.

Columbia County. 1984. Columbia County Comprehensive Plan. http://www.co.columbia.or.us/departments/land-development-services-main/planning. Accessed February 2019.

Loudness Comparison Chart. South Redding 6-Lane Project. http://www.dot.ca.gov/dist2/projects/sixer/loud.pdf. Accessed March 2019.

USFWS (U.S. Fish and Wildlife Service). 2010. Lewis and Clark National Wildlife Refuge (N.W.R), Julia Butler Hansen Refuge for the Columbian White-tailed Deer, Comprehensive Conservation Plan: Environmental Impact Statement. U.S. Fish and Wildlife Service. Ilwaco, Washington. https://www.fws.gov/refuge/julia_butler_hansen/conservation/comprehensive_conservation_plan.html. Accessed March 2019.

Proposed Laydown Area

Port Westward Unit 2

Port Westward Unit 1

Proposed Laydown Area

Proposed Battery Storage Area

Bradbury Slough

Global Clatskanie

Beaver Generating Facility

Existing Spoils Disposal Area

Site Location Map

Map Features

- Proposed Battery Storage Area
- Energy Facility Site Boundary
- Proposed Laydown Area

0 175 350
Feet

N
W E
S

Portland General Electric

Portland, Oregon

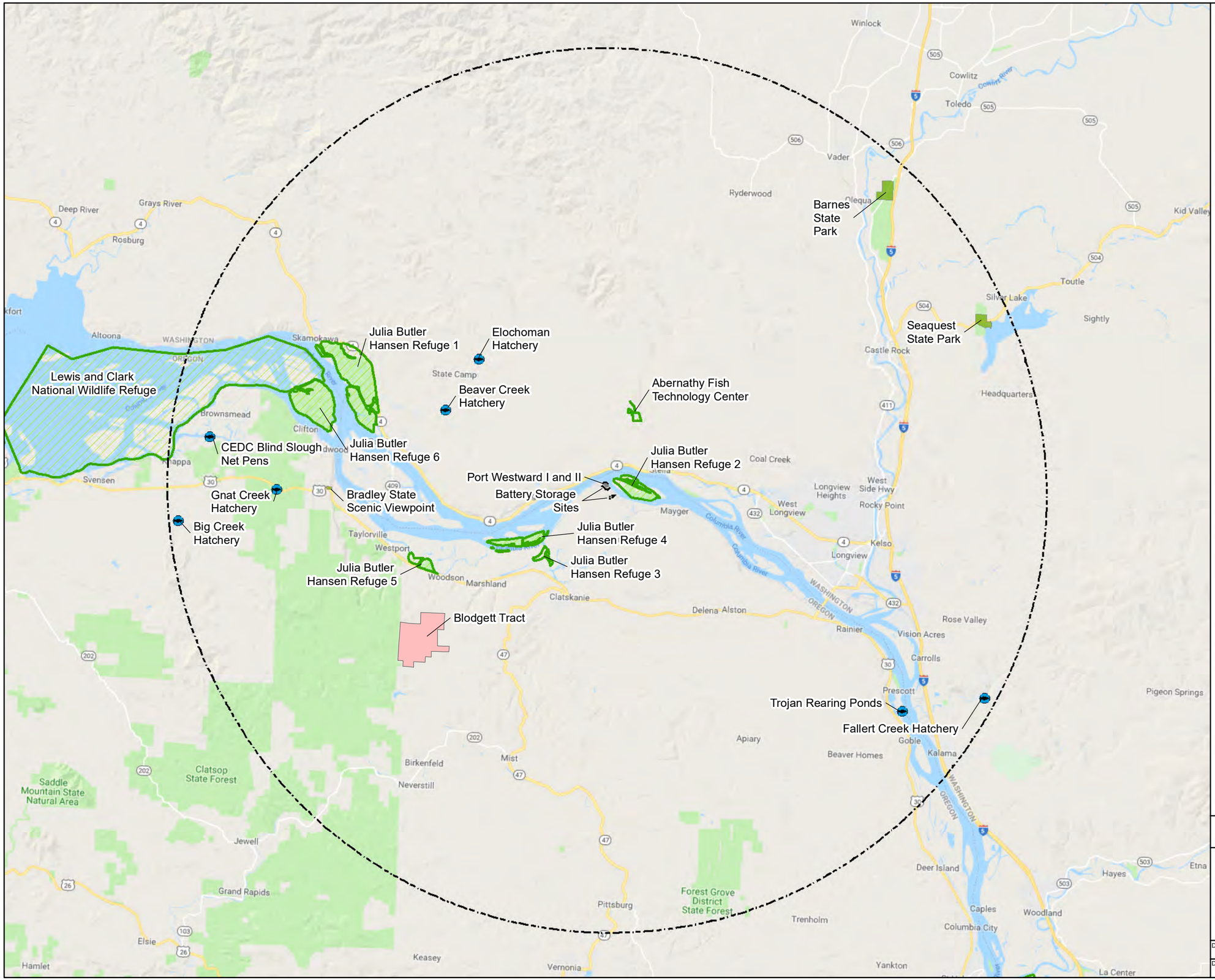
Figure 1

Proposed Battery Storage Site Map

Port Westward Generating Project

Date:	Drawn By:	Rev.:
4/11/2019	J.B. Hoy	

Drawing File: J:\Port_Westward\PW2\Maps\PW2_Battery_Storage_Site.mxd



Site Location Map

Map Features

- Battery Storage Sites
- 20-Mile Analysis Area
- Fish Hatchery
- National Park
- State Park
- U.S. Fish and Wildlife Site
- OSU Research Forest

0 2.5 5
Miles

Portland General Electric
Portland, Oregon

Figure 2

Proposed Battery Storage Protected Area Map

Port Westward Generating Project

Date:	Drawn By:	Rev.:
4/11/2019	J.B. Hoy	

Drawing File: J:\Port_Westward\PW2\Maps\PW2_Battery_Storage_Protected.mxd

Julia Butler Hansen Refuge

Crims Island

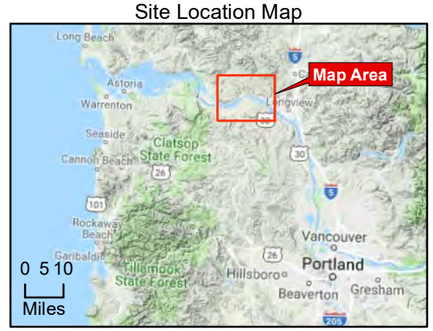
Julia Butler Hansen Refuge

Wallace Island

Julia Butler Hansen Refuge

Hwy 47 (Scenic Highway)

Site Location Map



Map Features

- Battery Storage Sites
- 5-Mile Analysis Area
- U.S. Fish and Wildlife Site
- Scenic Highway

0 3,000 6,000
Feet

Portland General Electric
Portland, Oregon

Figure 3

Proposed Battery Storage Scenic Resources Map

Port Westward Generating Project

Date:	Drawn By:	Rev.:
4/11/2019	J.B. Hoy	

Drawing File: J:\Port_Westward\PW2\Maps\PW2_Battery_Storage_Scenic.mxd

Abernathy Fish Technology Center

Abernathy Point

Mill Creek

County Line Park

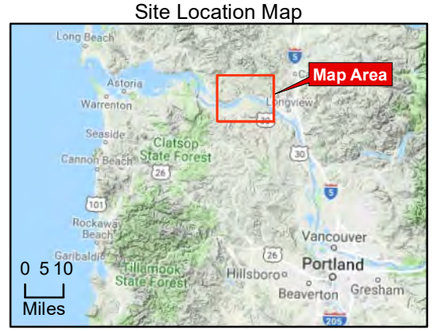
Willow Grove Boat Ramp and Park

Mayger Boat Ramp

Beaver Boat Ramp and Park

Clatskanie City Park

Site Location Map



Map Features

- Battery Storage Sites
- 5-Mile Analysis Area
- Recreation Site

0 3,000 6,000
Feet

N
W
E
S

Portland General Electric
Portland, Oregon

Figure 4

Proposed Battery Storage Recreation Sites Map

Port Westward Generating Project

Date:	Drawn By:	Rev.:
4/11/2019	J.B. Hoy	

Drawing File: J:\Port_Westward\PW2\Maps\PW2_Battery_Storage_Rec_Sites.mxd

Attachment 1. DOGAMI Consultation

PGE Port Westward RFA 11 for Battery Storage
Consultation with Oregon Department of Geology and Mineral Industries (DOGAMI) Summary

Portland, OR (at DOGAMI offices)

March 15, 2019

Attendees

- **DOGAMI** – Yumei Wang, P.E.
- **Oregon Department of Energy** – Luke May
- **PGE** – Lenna Cope, Sid Hillier
- **Tetra Tech** – Suzy Cavanagh (via phone)

Meeting Purpose

This meeting was intended to satisfy OAR 345-021-0010(1)(h)(B) that requires pre-application consultation with DOGAMI for new energy facilities. Accordingly, DOGAMI requested that notes be taken for review and comment by ODOE and DOGAMI.

Luke and Yumei discussed prior to this call that this Request for Amendment (RFA) 11 is limited in scope. The project is limited to the area within existing facility fence line that is under site certification.

Existing Facility under Site Certification:

In 2002, the Energy Facility Siting Council issued a Site Certificate to Portland General Electric Company (PGE) for the Port Westward Generating Plant (existing facility). The existing facility is a natural gas plant in Columbia County, Oregon, northeast of the City of Clatskanie. The certificate authorized PGE to construct and operate two separate units at PWGP. Unit 1 is a natural gas combined cycle combustion turbine plant that went into commercial operation in June 2007. Unit 2 is a natural gas-fired power plant comprised of 12 reciprocating engines. Unit 2 went into commercial operation in December 2014.

Previous geotechnical studies were conducted in 2002 by Cornforth Consultants Inc. (CCI) for Unit 1 and later in 2013 by Black & Veatch prior to construction of Unit 2. DOGAMI and ODOE should have these previous reports on file, but PGE can resend if needed. Black & Veatch reviewed the CCI study and then conducted a seismic study evaluation and performed additional borings.

Yumei recalled reviewing the CCI report and stated that the design requirements have changed since then, as well as evaluation of liquefaction. In 2002, not as much was known about the Cascadia event which is anticipated to be a magnitude 9 earthquake.

RFA 11 Project Description:
In RFA 11, PGE plans to add a battery energy storage system (BESS) within the fence line of the existing facility in response to House Bill 2193, which directs utilities to develop a minimum of 5MW of energy storage. The proposed BESS is intended to see how energy storage could work in regard to resiliency, capacity, ancillary services (frequency variation, etc.), outage mitigation, and power reliability. The design life is expected to be 10 years. The battery will be connected to three engines at Port Westward Unit 2. The proposed location within the fence line adjacent to the switchyard was viewed on a figure during the consultation. Potential laydown locations and soil spoils disposal area where also shown on the figure and discussed during consultation.

PGE plans to use the battery to test multiple use cases to provide various grid services. One such use case discussed during consultation is for the battery to provide spinning reserves for immediate response to energy need until an engine at the existing facility can come up from a cold start. The anticipated startup time for an engine is about 10 minutes. Not all use cases were discussed in detail during consultation.

PGE will be putting out a request for proposal (RFP) for energy storage systems to potential contractors to bid in the next couple of months. Though the RFP will be technology agnostic, PGE anticipates that the contractors will respond with a battery-based energy storage system. RFA No. 11 is requesting approval for flow battery or lithium-ion battery. PGE expects proposals for batteries in multiple modular containers constructed offsite, which will be brought to the site, and installed with the necessary supporting equipment. A flow-battery would be larger and likely have more containers than lithium-ion. PGE anticipates selecting a bid in fall 2019 and going to construction in early 2020.

PGE is internally deciding to allocate funding for another project on site requiring changes to existing switchgear, if that project does not proceed, the BESS may be moved to an area currently proposed for laydown storage area. The laydown areas as currently indicated on map are for parking or storage of materials for the contractor, if needed. *[Note, since the consultation the switchgear project was internally approved; therefore, the location of the BESS will not be moved to the alternative location.]*

The RFP will include seismic design data and require all enclosures, their content and all other structures to be seismically rated to withstand the seismic design data provided in the RFP. The seismic design data in the RFP includes, short period mapped spectral acceleration, one second period mapped spectral acceleration, site class, and importance factor (seismic loads). PGE will not require the contractor to conduct new geotechnical investigations but will provide all previous investigations to the contractor and allow the engineer of record for structural design to determine if additional borings are necessary to design the appropriate foundation. Yumei noted that the seismic design data should be based on a magnitude 9 earthquake originating from the Cascadia Subduction Zone. The seismic site class will be D if in improved foundation conditions or F if not. Yumei indicated it would be important to note that the site soils are a site class F if they are not improved, meaning they are liquefiable. Overall settlement and

differential settlement were discussed; both short-term and long-term settlement should be addressed.

Lidar for the area is available and PGE shares Lidar with DOGAMI. If additional geotechnical investigations are performed DOGAMI will require Lidar evaluation for faults and landslides. PGE will not require an additional geotechnical study but will require the contractor to have an engineer of record for structural design determine if existing studies are sufficient or if additional studies are needed.

Yumei suggested to write in the RFP, if appropriate, for the contractor to look at the 2016 National Research Council report on liquefaction.

Project Resiliency:

ODOE is still determining what they can require in regards to Division 21, which is their information gathering regulation and Division 22, which is what gives ODOE authority to impose a condition. ODOE can require information relating to disaster resilience mitigation and climate change. What will be requested will be different based on technology.

Black start viability was discussed. Black start conditions are not limited to a potential Cascadia event, there could be other conditions (cyberattack, etc.) that trigger the need for a black start. PGE explained that this BESS will test multiple use cases including black start and looking at disaster resiliency on a greater scale. There should not be a requirement on this project to provide black start, as it is just one of the multiple use cases that may be tested by the BESS.

Yumei stated that she would leave it up to ODOE to determine if DOGAMI will review RFA 11. Note: if DOGAMI reviews RFA 11, references to sections with the project description should be included in the structural standard write up. Yumei would like to see in the write up that this project is designed to help with overall resilience and stated this project is inherently helpful to resilience assuming that it is designed correctly.

Future Climate:

This existing facility is above the 100-year flood zone, protected by the Beaver Drainage Improvement District levee. Numerous improvements have been done to the levee since the existing facility was built. The 100-year flood is expected to be about 14 to 16 feet. The existing facility is at 18 to 19 feet (nominal 18 feet and higher), the road is closer to 20 feet. PGE is a member of the drainage district and has managed the local levee area since establishing a presence in the area. PGE has mapped what would occur if flood levels exceeded the low point levee elevations located downstream and have determined the proposed location of the BESS would not be flooded during a 100-year flood.

DOGAMI requested that if the extent and the weaknesses of the levee have been evaluated and it has been studied how, if the levee were breached, a flood would or wouldn't impact the facility that, this information be included in the RFA. This will help to explain to the agencies

that these things have been considered and planned for. Division 21 requires an explanation of how the changes proposed in RFA 11 would respond to climate change and integrate disaster resilience. If the evidence is clearly presented, then it will be included in the project record and will be beneficial.

PGE confirmed that the RFA would address risks applicable to the battery system, not the existing facility and PGE would not be required to conduct an assessment of disaster resiliency and climate change for the existing facility under the new requirements.

Yumei indicated the MCE earthquake level is too low in the 2002 seismic report since a magnitude 9 earthquake at the Cascadia Subduction Zone was not assessed. However, the geotechnical borings, foundation improvements and data are valid. The RFP contractor will need to review this to understand liquefaction potential and seismic hazards, not just the structural hazards. There are different engineering specialists, it will need to be a qualified engineer of record.

If geotechnical reports are completed by the contractor, DOGAMI asks that they conform to the guidelines with that Oregon State Board of Geologist Examiners and are submitted to ODOE and DOGAMI. It is asked that the codes and pre-standards and standards are used so that it is clear to someone not doing the work what is being done (be transparent). It is an explanation so that the public can understand the steps taken (due diligence).

Attachment 2. Land Use: Applicable Substantive Criteria

Table of Contents

List of Appendices

1.0 Introduction and Overview

This attachment demonstrates that the Port Westward Generating Project (Facility), with the changes proposed in RFA 11, continues to comply with applicable substantive criteria from the affected local government's acknowledged comprehensive plan and land use regulations that are required by the statewide planning goals and in effect on the date the application is submitted, and with any Land Conservation and Development Commission (LCDC) administrative rules and goals and any land use statutes directly applicable to the Facility. The changes to the Facility proposed in RFA 11 would not alter the basis of the Energy Facility Siting Council's (the Council) previous findings. Portland General Electric Company (PGE) will comply with all existing Site Certificate conditions related to land use that are applicable to RFA 11, as referenced herein.

The Columbia County Planning Manager provided a preliminary review and input on applicable, substantive criteria for Request for Amendment 11 (RFA 11; pers. comm., M. Laird, March 29, 2019) (See Appendix A). PGE, as the certificate holder, has addressed the applicable substantive criteria herein. PGE understands that after submittal of RFA 11, the Oregon Department of Energy will reach out to the local jurisdiction (Columbia County) for comment. If the Council issues a Final Order approving an Amended Site Certificate, PGE and the Columbia County will then follow the procedures outlined under Oregon Revised Statutes (ORS) 469.401(3), below, for local permit issuance:

> *Subject to the conditions set forth in the site certificate or amended site certificate, any certificate or amended certificate signed by the chairperson of the council shall bind the state and all counties and cities and political subdivisions in this state as to the approval of the site and the construction and operation of the facility. After issuance of the site certificate or amended site certificate, any affected state agency, county, city and political subdivision shall, upon submission by the applicant of the proper applications and payment of the proper fees, but without hearings or other proceedings, promptly issue the permits, licenses and certificates addressed in the site certificate or amended site certificate, subject only to conditions set forth in the site certificate or amended site certificate. After the site certificate or amended site certificate is issued, the only issue to be decided in an administrative or judicial review of a state agency or local government permit for which compliance with governing law was considered and determined in the site certificate or amended site certificate proceeding shall be whether the permit is consistent with the terms of the site certificate or amended site certificate. Each state or local government agency that issues a permit, license or certificate shall continue to exercise enforcement authority over the permit, license or certificate.*

2.0 Description of Proposed Development

The following development activities are proposed in RFA 11 and addressed in this land use analysis. These activities are located within the Site Boundary or areas that have been previously approved for use by the Facility:

1. New related and supporting facility: The Port Westward Battery Energy Storage System (BESS) will add 4 to 6 megawatts of battery energy storage at the Facility. The BESS will be a related and supporting facility adjacent to the switchyard within the existing fence line of the Facility site (see RFA 11, Figure 1).

   This BESS will be a factory-built, fully functioning BESS with batteries, power conversion systems (inverters), an interconnection system, and step-up transformers. The point of interconnection will be the switchgear in the existing switchyard, where the BESS will connect to PGE's general transmission grid and to a Unit 2 generator for the Block 1 engines (six engines total). However, the transmission grid will recharge the BESS, and the BESS will discharge back to the grid when it is not used as spinning reserve for the Unit 2 generator. The transmission grid includes generation from Unit 1 and Unit 2, and from PGE's Beaver Generating Facility.

   The batteries will be stored in modular containers that are approximately 44 feet by 10 feet. The containers will be sited within a 100-foot by 90-foot area that is currently paved. The number of modular containers, inverters, and transformers, as well as their layout, will be determined in the final design, but all components will fit within the existing Facility footprint. Each modular container will include an HVAC system and a fire detection and suppression system. All wiring will be in underground conduit. The BESS will not be staffed for operations and maintenance; it will be designed to be completely automated and report failure problems via (supervisory control and data acquisition) SCADA technology to remote PGE operators.

2. Use of approved related or supporting facilities, construction staging and laydown areas, and spoils disposal area:

   a. Temporary construction staging and laydown will be within the existing fence line. There will be no permanent or temporary disturbances caused by these areas because they are already permanently disturbed and graveled. These areas will also be used for construction parking. No temporary or permanent roads will be built; all construction traffic will use existing access roads.

   b. A spoils disposal area located outside the fence line may be used during construction (See RFA 11, Figure 1). Excess soil from the construction site will be spread across the spoils site. The spoils site will be revegetated in accordance with existing Site Certificate conditions.

3.0 Columbia County Land Use Regulations

All development activities addressed in RFA 11 are located entirely within Columbia County's planning jurisdiction. As a result, these facilities will be subject to the provisions of the Columbia County Zoning Ordinance (CCZO). The applicable sections of the CCZO are addressed below.[1] The Facility is in the Port Westward Industrial Park, which is zoned by Columbia County as Resource Industrial Planned Development (RIPD).

3.1 Section 680 Resource Industrial – Planned Development

CCZO § 681 Purpose:

The purpose of this district is to implement the policies of the Comprehensive Plan for Rural Industrial Areas. These provisions are intended to accommodate rural and natural resource related industries, which:

681.1 Are not generally labor intensive;

In the Final Order on the ASC (November 8, 2002), the Council found:

> *The energy facility will employ about 25 employees during plant operations. Therefore, it is not a labor-intensive operation. The related and supporting facilities will require periodic maintenance and monitoring, but will not require additional employees and are therefore not labor intensive.*[2]

The BESS is not labor intensive; it will not be staffed for operations and maintenance, and therefore will not increase employment on the site. The temporary construction staging and laydown areas, as well as the spoils disposal area, will be used only in conjunction with construction of the BESS, not operation.

681.2 Are land extensive;

In the Final Order of the ASC (November 8, 2002) the Council found:

> *The energy facility site will encompass about 19 acres and is, therefore, a land-extensive use. Although the primary reason for locating a 1.5 mile segment of the transmission line in the RIPD zone is to allow connection with the energy facility, that 1.5 mile segment of the transmission line is itself a land-extensive use. Similarly, although the primary reason for locating a 3,600 foot segment of the Trojan option in the RIPD zone is to allow connection with the Trojan Nuclear Plant (which is itself located in the RIPD zone), that 3,600 foot segment is also land extensive.*[3]

[1] Note, only the applicable sections to RFA 11 are included. Hence, there may be numerical gaps in the standards addressed.
[2] Final Order on the Application. 2002. Attachment D. Pg. 4.
[3] Final Order on the Application. 2002. Attachment D. Pg. 4.

The BESS will be sited within the developed area of the Facility site and will not remove land from the existing energy-site. Therefore, RFA 11 will not affect prior findings by the Council, as the Facility has already been determined to be a land-extensive use.

681.3 Require a rural location in order to take advantage of adequate rail and/or vehicle and/or deep water port and/or airstrip access;

In the Final Order of the ASC (November 8, 2002) the Council found:

> *The energy facility requires a rural location to use the Columbia River and Bradbury Slough as a water source, and to take advantage of the existing facilities, including the existing intake structure on the Columbia River/Bradbury Slough and the natural gas pipeline. The site also affords access to the Burlington Northern and Santa Fe Railway Astoria-to-Portland branch line and an existing dock on the Columbia River, which will be used during construction or operation. The transmission line is not itself dependent upon the rural location. The transmission line is, however, a necessary component of the proposed energy facility, which is itself locationally dependent.*[4]

These Council findings apply to the development activities in the RIPD zone that are part of RFA 11 because they are accessory and supportive of the Facility.

681.4 Complement the character and development of the surrounding rural area;

In the Final Order of the ASC (November 8, 2002) the Council found:

> *The energy facility will be located in the Port Westward Industrial Park. The exception statement for the Port Westward tract in the County's Comprehensive Plan reflects that the anticipated uses of the area would be industrial in nature and take advantage of the existing services, including the proximity to the river. Examples listed in the Plan include an oil refinery, a coal port, and a petrochemical tank farm. The primary existing use at the Port Westward Industrial Park is another energy facility (the Beaver Generating Plant). The available infrastructure includes a dock on the Columbia River, a water intake system, railroad tracks, and a natural gas pipeline. The proposed energy facility will use this existing infrastructure during construction and/or operation. Therefore, the energy facility use will complement the existing character and development of the area.*[5]

All of the development activities of RFA 11 will be within the Site Boundary or in areas previously used for development of the Facility. The BESS will be entirely with the existing fence line of the Facility, on previously developed impervious surface, and will not change the developed footprint of the Facility. The BESS will be relatively minor in size, scope, and effect compared to the existing, already built Facility (see RFA 11, Figure 1), and it will be visually subordinate to the Facility.

The Facility site is surrounded by RIPD zoning on three sides and the river on one side. As described throughout this RFA, there will be no off-site impacts from RFA 11 that affect the rural

[4] Final Order on the Application. 2002. Attachment D. Pg. 5.
[5] Final Order on the Application. 2002. Attachment D. Pg. 5.

surroundings; there will be no changes to noise impacts (see RFA 11, Section 10.1), public services (see RFA 11, Section 8.12), natural resources (including wetlands and other waters, see RFA 11 Section 10.2); fish and wildlife habitat, Section 8.7; and threatened and endangered species, see Section 8.8), and soils protection (see RFA 11 Section 8.3). Therefore, there will be no perceptible change to the character and development of the surrounding area from the changes proposed in RFA 11.

681.5 Are consistent with the rural facilities and services existing and/or planned for the area; and

In the Final Order of the ASC (November 8, 2002) the Council found:

> *The energy facility use is consistent with existing or planned facilities and services. Process water will be provided from the existing PGE intake structure on Columbia River/Bradbury Slough under water rights held by the Port of St. Helens. PGE will construct a short gas pipeline lateral to connect the energy facility to the existing K-B gas pipeline. The Port of St. Helens will build a separate industrial wastewater system to serve all Port Westward industries. The energy facility will use a new on-site septic system. The energy facility will also have an on-site fire protection system. The Clatskanie Drainage District will continue to handle storm water drainage. The transmission lines themselves will not require any rural services.*[6]

The 2002 findings apply equally to the proposed development activities in RFA 11. The BESS will be an accessory use to the Facility. The BESS will have an internal fire protection system that will include alarms and suppression systems that meet the chemistry requirements of the BESS. The fire suppression system will contain a fire for a minimum of 90 minutes, providing ample time to respond to an alarm. A fire alarm panel at the BESS will connect to the Facility Control Room so that operators are able to receive, acknowledge, and silence alarms and initiate human response. Per Condition D.13(8), battery storage and fire protection systems will comply with applicable standards specified by the Columbia County building department through the permitting process, which will include the Uniform Fire Code, as amended by Oregon and the National Fire Protection Association standards, and all other applicable fire protection standards in effect at the time of construction. The proposed changes do not increase the need for public facilities or services in the area. See Section 8.12 of RFA 11.

681.6 Will not require facility and/or service improvement at significant public expense.

The BESS will be situated entirely on disturbed areas within the existing fence line. There will be no additional employees, access changes or any other change to the Facility that would require facility and service improvements of significant public expense (see also Section 8.12of RFA 11).

> *The uses contemplated for this district are not appropriate for location within Urban Growth Boundaries due to their relationship with the site-specific resources noted in the Plan and/or due to their hazardous nature.*

[6] Final Order on the Application. 2002. Attachment D. Pg. 6.

The Facility has been operational since 2007 and is on a property zoned for industrial use. The development activities proposed in RFA 11 are accessory uses dependent on the location of the energy facility itself. Therefore, the proposed changes in RFA 11 are not appropriate for location within the Urban Growth Boundary due to their relationship with the site-specific resources the Facility relies upon, such as water from the Columbia River and Bradbury Slough, the existing water intake structure, the K-B pipeline, the Burlington Northern Railway Astoria-to-Portland branch line, and the existing dock on the Columbia River.

3.1.1 CCZO § 683 Uses Permitted Under Prescribed Conditions

> *683: The following uses may be permitted subject to the conditions imposed for each use:*
>
> ***CCZO § 683.1***
>
> *Production, processing, assembling, packaging, or treatment of materials;*
>
> *research and development laboratories; and storage and distribution of services*
>
> *and facilities subject to the following findings:*

In the Final Order on the ASC, the Council found:

> *The energy facility is permitted subject to the prescribed conditions because it is a use that involves the production of electricity through the processing of a material (natural gas) as well as the distribution of that electricity as a service.*[7]

The BESS will be integral to the storage and distribution of electricity produced at the Facility, and therefore is in its own right a use permitted under prescribed conditions in the RIPD zone. In addition, CCZO § 683.2 permits "accessory buildings" under specific standards. The BESS satisfies the requirements for an accessory building for the reasons set forth below.

> *A. The requested use conforms with the goals and policies of the Comprehensive Plan — specifically those policies regarding rural industrial development and exceptions to the rural resource land goals and policies.*

Columbia County's Comprehensive Plan provides that the goal of the Resource Development zoning designation is "to provide for industrial development on rural lands when such development can be shown to support, use, or in some manner be dependent upon the natural resources of the area." The Port Westward Exception Statement provides that the Rural Industrial designation at the Port Westward Industrial Park "is intended to take advantage of the location on the Columbia River, the existing dock facilities, railroad, and urban services."

In the Final Order on the ASC, the Council found:

> *The energy facility fulfills the Comprehensive Plan goal because it is an industrial use that is dependent on the Columbia River and the Bradbury Slough as a water source. It fulfills the purpose of the exception by taking advantage of its proximity to the Columbia River, existing*

[7] Final Order on the Application. 2002. Attachment D. Pg. 11.

> *K-B pipeline, and existing rail and dock facilities, and the opportunity to locate a heavy industrial use away from potentially incompatible uses within an urban area. As an integral part of the energy facility, the transmission line also complies with both the Comprehensive Plan policies regarding rural industrial development and the exception statement for the Port Westward tract.*[8]

The proposed changes for the Facility in RFA 11 take advantage of the location for the same reasons identified in the Council's 2002 findings. Policy 3 of the Resource Industrial Development section of the Comprehensive Plan provides that industrial development on lands zoned RIPD should be restricted to uses that meet the criteria in CCZO § 681. For the reasons outlined above with respect to CCZO § 681, the proposed changes included in this amendment request meet each of these criteria.

> *B. The potential impact upon the area resulting from the proposed use has been addressed and any adverse impact will be able to be mitigated considering the following factors:*
>
> > *B.1 Physiological characteristics of the site (i.e., topography, drainage, etc.) and the suitability of the site for the particular land use and improvements;*
> >
> > *B.2 Existing land uses and both private and public facilities and services in the area;*
> >
> > *B.3 The demonstrated need for the proposed use is best met at the requested site considering all factors of the rural industrial element of the Comprehensive Plan.*

The Council approved the location of the energy facility at Port Westward Industrial Park in the Final Order on the ASC (November 8, 2002), and addressed consistency with applicable land use standards in Attachment D to the Final Order. The factors of the rural industrial element of Columbia County's Comprehensive Plan are addressed in response to CCZ0 §§ 681 and 683.1.A. The BESS is a related or supporting component to the Facility that will be within the fence line in a previously disturbed area. The BESS must be located near the Facility in order to serve its purpose to store energy generated from the Facility. The construction staging and laydown areas provide convenient and efficient locations for use during construction that are within the Site Boundary, have been previously used for the Facility, and do not require any new permanent or temporary disturbance of undeveloped land. The spoils disposal area has also been previously used for the Facility.

Existing land uses and facilities within the Port Westward Industrial Park include the Beaver Generating Plant, transmission lines, a 1,250-foot dock adjacent to the Columbia River, railroad tracks, a 1.3-million-barrel tank farm, a water supply system that draws from the Bradbury Slough, and the K-B gas pipeline. The existing uses are not sensitive to the impacts of the proposed changes from RFA 11 because the proposed development activities will be within the existing fence line of the operating Facility or in the spoils disposal area that was previously used and approved for the Facility. Therefore, the proposed changes in this amendment request would not increase the

[8] Final Order on the Application. 2002. Attachment D. Pg. 7.

demand on public or private facilities and services in the area beyond the level already addressed by the Council. See also Section 8.12 of RFA 11.

> *C. The requested use can be shown to comply with the following standards for available services:*
>
> > *C.1 Water shall be provided by an on-site source of sufficient capacity to serve the proposed use, or a public or community water system capable of serving the proposed use.*

The Council has previously found that adequate water is available for the energy facility through (1) the Port of St. Helens water right, which authorizes diversion of up to 30 cubic feet per second (cfs) from the Columbia River/Bradbury Slough for municipal and industrial use and (2) PGE's existing industrial water right at the Facility. The proposed changes will not require additional water consumption, which would remain within the limit established in the Site Certificate. See also Section 8.12 of RFA 11.

> > *C.2 Sewage will be treated by subsurface sewage system, or community or public sewer system, approved by the County Sanitarian and/or the State DEQ.*

There will be no change to the sewage system as part of RFA 11.

> > *C.3 Access will be provided to a public right-of-way constructed to standards capable of supporting the proposed use considering the existing level of service and the impacts caused by the planned development.*

There will be no changes to access as part of RFA 11.

> > *C.4 The property is within, and is capable of being served by, a rural fire district; or, the proponents will provide on-site fire suppression facilities capable of serving the proposed use. On-site facilities shall be approved by either the State or local Fire Marshal.*

In the Final Order of the ASC (November 8, 2002) the Council found[9]:

> *The energy facility will use an approved on-site, high-pressure fire protection system. The energy facility site is also served by the Clatskanie Rural Fire Department. With on-site fire suppression facilities, the services of the Department will be adequate to meet the needs of the energy facility. The transmission line will not require such services. The transmission line will, however, have a safety corridor of 125 feet and the area will be kept cleared as required by applicable safety standards, including the National Electrical Safety Code.*

The BESS will have an internal fire protection system that will include alarms and fire suppression systems that meet the battery chemistry requirements of the BESS. The fire suppression system will contain a fire for a minimum of 90 minutes, providing ample time to respond to an alarm. A fire alarm panel at the BESS will connect to the Facility Control Room so that operators are able to receive, acknowledge, and silence alarms and initiate human response. Through compliance with

[9] Final Order on the Application. 2002. Attachment D. Pg. 10.

Condition D.13(8), battery storage and fire protection systems will comply with applicable standards specified by the Columbia County building department through the permitting process, which will include the Uniform Fire Code, as amended by Oregon and the National Fire Protection Association standards, and all other applicable fire protection standards in effect at the time of construction. Therefore, the development activities associated with the proposed changes in this amendment request do not affect the findings previously adopted by the Council under this standard.

CCZO § 683.2 Accessory buildings may be allowed if they fulfill the following requirements:

For the purposes of addressing this standard, the BESS is a building according to *CCZO§ 100.13 Building: Any structure used or intended for supporting or sheltering any use or occupancy.*

A. If attached to the main building or separated by a breezeway, they shall meet the front and side yard requirements of the main building.

The BESS will not be attached to the main building.

B. If detached from the main building, they must be located behind the main building or a minimum of 50 feet from the front lot or parcel line, whichever is greater.

The BESS will not be behind the main building but will be at minimum 50 feet from the front lot or parcel line. The BESS needs to be located adjacent to the switchyard to store energy, as needed, prior to transmitting the energy. In addition, in the Final Order on the ASC, the Council found:

> *The 19-acre site provides adequate space for all site improvements and incorporates setbacks from any potential surrounding uses.*[10]

See also Section 685, response below which discusses setbacks for the site.

C. Detached accessory buildings shall have a minimum setback of 50 feet from the rear and/or side lot or parcel line.

CCZO § 100.54 defines "lot" as: "A unit of land that is created by a subdivision of land. Lots are created from and are located in subdivision plats." CCZO § 100.77 defines "parcel" as: "A unit of land created by a partitioning of land. Parcel is also used generically to describe a unit of land." There are no "lots" created by subdivision in the vicinity of the PWGP. The BESS will be more than 50 feet from the nearest parcel line – for Partition Plat 2007-28 -- as shown in Figure 2.1.

CCZO § 683.3 Signs as provided in Chapter 1300.

CCZO § 1300 regulates the establishment, alteration, or expansion of any sign in any district in Columbia County. CCZO § 1313 provides the specific standards for signs in commercial and industrial districts. The proposed changes in the amendment request would not involve signage.

CCZO § 683.4 Off street parking and loading as provided in Chapter 1400.

[10] Final Order on the Application. 2002. Attachment D. Pg. 11.

For a manufacturing use, CCZO § 1416.5 requires one parking space per employee on the largest shift. The changes proposed in the amendment request would not increase the number of employees and therefore would not affect parking or loading needs at the Facility.

3.1.2 CCZO § 685 Standards

> *685.1 The minimum lot or parcel size for uses allowed under Section 682 shall be 38 acres.*

This criterion is not applicable. The BESS is an accessory use and is allowed under CCZO § 683.

> *685.2 The minimum lot or parcel size, average lot or parcel width and depth, and setbacks for uses allowed under Section 683, shall be established by the Planning Commission and will be sufficient to support the requested rural industrial use considering, at a minimum the following factors:*
>
> > *A. Overall scope of the project. Should the project be proposed to be developed in phases, all phases shall be considered when establishing the minimum lot size.*
> >
> > *B. Space required for off-street parking and loading and open space, as required.*
> >
> > *C. Setbacks necessary to adequately protect adjacent properties.*

PGE is not proposing any change to size or location of the Facility site or Site Boundary that have previously been approved by the Council. The BESS would be within the existing fence line of the Facility, and temporary uses to construct the Facility will be at sites previously approved in the Site Certificate. As noted above, in the Final Order on the ASC, the Council found:

> *The 19-acre site provides adequate space for all site improvements and incorporates setbacks from any potential surrounding uses.*[11]

The parcel size is adequate to accommodate the BESS, which will be located on an area that is paved, but otherwise available for this use without expansion of the Site Boundary and the BESS will be set farther back from the lot lines than existing Facility building and structures.

> *685.3 Access shall be provided to a public right-of-way of sufficient construction to support the intended use, as determined by the County Roadmaster.*

In the Final Order of the ASC (November 8, 2002) the Council found:

> *An existing county road, Kallunki Road, provides access to the Port Westward tract. This road is capable of supporting all traffic that would be generated by the operation of the energy facility. PGE and the County have identified improvements and mitigation measures needed to address transportation-related impacts during*

[11] Final Order on the Application. 2002. Attachment D. Pg. 11.

> *construction and have entered into an agreement by which PGE will be funding its share of those improvements.*[12]

There will be no changes to access as part of RFA 11. Therefore, proposed changes within the RIPD zone as part of this amendment request do not affect the Council's prior findings with respect to the availability or adequacy of access to a public right-of-way.

3.2 Special Districts, Overlay Districts and Special Provisions

3.2.1 CCZO § 1100 Flood Hazard Overlay

1103 Application:

1103.1 This zone shall apply to all areas of special flood hazards within the jurisdiction of Columbia County.

1105 Development Permit

1105.1 A development permit shall be obtained before construction or development begins within any area of special flood hazard established in Section 1104. The permit shall be for all structures allowed by the underlying zone, including manufactured homes, as set forth in the "Definitions", and for all development including fill and other activities, also set forth in the "Definitions". The following exceptions apply for the storage of equipment or materials:

A. any temporary storage within any zoning district, and

B. permanent storage connected with residential use located out of the floodway.

The FEMA flood map for the Facility is shown on FEMA panel 41009C0050D, effective November 26, 2010**.** All Facility features except for the north laydown area will be located outside of special flood hazard areas. The north laydown area is exempt from requiring a development permit in a special flood hazard area per CCZO § 1105(1)(B) because it is both temporary and for storage of construction materials.

3.2.2 CCZO § 1400 Off-Street Parking and Loading

1401 General Provisions: At the time of the erection of a new building, or an addition to an existing building, or any change in the use of an existing building, structure, or land which results in an intensified use by customers, occupants, employees, or other persons, off-street parking and loading shall be provided according to the requirements of this section.

The Facility is generally only accessed by employees. The proposed BESS will generate minimal amounts of additional traffic because it will not require the ongoing, regular restocking of supplies or removal of waste products. The BESS will function autonomously and not require any additional employees, nor will it require a loading area. The BESS will be remotely monitored and will not

[12] Final Order on the Application. 2002. Attachment D. Pg. 11.

intensify the use of the site by employees. Therefore, there will be no need for any additional off-street parking or loading facilities.

3.2.3 CCZO § 1450 Transportation Impact Analysis

1450 Transportation Impact Analysis: A Transportation Impact Analysis (TIA) must be submitted with a land use application at the request of the Public Works Director or if the proposal is expected to involve one or more of the conditions in 1450.1 (below) in order to minimize impacts on and protect transportation facilities, consistent with Section 660-012-0045(2)(b) and (e) of the State Transportation Planning Rule.

1450.1 Applicability – A TIA shall be required to be submitted to the County with a land use application at the request of the Roads Department Director or if the proposal is expected to involve one (1) or more of the following:

A. Changes in land use designation, or zoning designation that will generate more vehicle trip ends.

B. Projected increase in trip generation of 25 or more trips during either the AM or PM peak hour, or more than 400 daily trips.

C. Potential impacts to intersection operations.

D. Potential impacts to residential areas or local roadways, including any non-residential development that will generate traffic through a residential zone.

E. Potential impacts to pedestrian and bicycle routes, including, but not limited to school routes and multimodal roadway improvements identified in the TSP.

F. The location of an existing or proposed access driveway does not meet minimum spacing or sight distance requirements, or is located where vehicles entering or leaving the property are restricted, or such vehicles are likely to queue or hesitate at an approach or access connection, thereby creating a safety hazard.

G. A change in internal traffic patterns may cause safety concerns.

H. A TIA is required by ODOT pursuant with OAR 734-051.

I. Projected increase of five trips by vehicles exceeding 26,000-pound gross vehicle weight (13 tons) per day, or an increase in use of adjacent roadways by vehicles exceeding 26,000-pound gross vehicle weight (13 tons) by 10 percent.

The proposed changes in RFA 11 will not change zoning or land use of the Facility. Any transportation and supply routes are anticipated to be the same as those previously approved by the Council. There will be no changes to access, intersections, or road improvements needed. There will be a small, temporary increase in traffic during the construction of the proposed BESS; however, no additional on-site staff are planned for operation and maintenance of this facility. Approximately 40 delivery vehicles would be needed during construction to deliver containers, electrical equipment, and concrete to the site. The proposed BESS will generate only minimal

amounts of operational traffic because it will not require the ongoing, regular restocking of supplies or removal of waste products.

Because of the limited amount, type, and duration of construction traffic, there will be no impacts to the local or state road network, including multimodal routes or adjacent land uses. Therefore, no long-term impacts to traffic are anticipated as a result of construction and operation of the BESS. The BESS will not change traffic patterns internal to the site. PGE has reviewed the list of thresholds for a TIA in CCZO § 1450(1), above, and determined that the proposed changes in RFA 11 do not require a TIA.

3.3 Section 1500 Discretionary Permits

3.3.1 CCZO § 1503 Conditional Uses

1503 Conditional Uses:

> *1503.5 Granting a Permit: The Commission may grant a Conditional Use Permit after conducting a public hearing, provided the applicant provides evidence substantiating that all the requirements of this ordinance relative to the proposed use are satisfied and demonstrates the proposed use also satisfies the following criteria:*

Pursuant to CCZO § 1503.5, the Certificate Holder must demonstrate that the proposed changes also satisfy the following criteria:

> *A. The use is listed as a Conditional Use in the zone which is currently applied to the site;*

In the Final Order of the ASC (November 8, 2002) the Council found:

> *The energy facility is permitted subject to the prescribed conditions because it is a use that involves the production of electricity through the processing of a material (natural gas) as well as the distribution of that electricity as a service. The construction staging area is an accessory to the energy facility use. The other related and supporting facilities are also permitted under prescribed conditions within the RIPD zone. Each of the three pipelines facilitates the production of electricity. The transmission line distributes that electricity.*[13]

The BESS is an accessory use and related and supporting facility to the approved and operational Facility and therefore satisfies CCZO § 1503.5.A for the reasons stated in the Council's 2002 findings.

> *B. The use meets the specific criteria established in the underlying zone;*

The proposed changes satisfy the applicable criteria in the RIPD zone (CCZO §§681, 683 and 685), as described above.

> *C. The characteristics of the site are suitable for the proposed use considering size, shape, location, topography, existence of improvements, and natural features;*

[13] Final Order on the Application. 2002. Attachment D. Pg. 11.

The BESS is suitable for the characteristics of the site because the parcel size is adequate to accommodate the BESS, which will be located on an area that is paved but otherwise available for this use without expansion of the Site Boundary or increasing the Facility footprint. The BESS needs to be located adjacent to the switchyard to store energy, as needed, prior to transmitting the energy. Because it will be within the developed footprint of the Facility, the BESS will not impact natural features.

D. The site and proposed development is timely, considering the adequacy of transportation systems, public facilities, and services existing or planned for the area affected by the use;

The site and proposed development as part of RFA 11 are timely considering the adequacy of the transportation systems, public facilities, and services existing or planned for the area. The proposed development as part of RFA 11 will be within the developed footprint of the Facility. The BESS will not be staffed for operations and maintenance; it will be designed to be completely automated and report failure problems via SCADA to PGE operators. There will be no access changes as part of the proposed changes. See RFA 11, Figure 1.

E. The proposed use will not alter the character of the surrounding area in a manner which substantially limits, impairs, or precludes the use of surrounding properties for the primary uses listed in the underlying district;

Permitted uses in the RIPD zone include farm use and the management, production and harvesting of forest products. Uses allowed under prescribed conditions include industrial uses such as the production and processing of materials, laboratories, or storage and distribution of services. The Port Westward Exception Statement in Columbia County's Comprehensive Plan designates this area as being appropriate for industrial uses. The accessory and temporary uses proposed as part of RFA 11 will not alter the character of the surrounding area because they will either be within the existing fence line of the developed Facility or in an area already approved or used for the Facility (soils disposal area).

F. The proposal satisfies the goals and policies of the Comprehensive Plan, which apply to the proposed use;

The applicable Comprehensive Plan goals and policies as identified by Columbia County are addressed in Section IV, below.

G. The proposal will not create any hazardous conditions.

The Site Certificate requires compliance with conditions governing structural safety (Section D.5) and Public Health and Safety (Section E.1.c). Each modular container will include a HVAC system and a fire detection and suppression system. All wiring will be in underground conduit. The BESS will not be staffed for operations and maintenance; it will be designed to be completely automated and report failure problems via SCADA to PGE operators. In addition, Soil Protection Conditions D.6(7)-(9) of the Site Certificate, provide conditions related to hazardous materials spill control. No additional conditions are necessary to ensure that the proposed changes in this amendment

request will not create any hazardous conditions. See also RFA 11 Sections 8.1 Public Health and Safety, 8.13 Waste Minimization, Section 8.2 Structural Standard, and Section 8.12 Public Services.

3.4 Other Columbia County Zoning Provisions

Certain CCZO standards apply within Columbia County's jurisdiction regardless of the zoning designation:

- CCZO § 1170 - Riparian Corridors, Wetlands, Water Quality, and Fish and Wildlife Habitat Overlay Zone
- CCZO § 1180 - Wetland Area Overlay
- CCZO § 1190 – Big Game Habitat Overlay
- CCZO § 1550 – Site Design Review

Applicable standards in each of these Sections are discussed below.

3.4.1 CCZO § 1170 - Riparian Corridors, Wetlands, Water Quality and Fish and Wildlife Habitat Overlay Zone

1171 Purpose.

A. The purpose of this Section is to protect and restore water bodies and their associated riparian corridors, thereby protecting and restoring the hydrological, ecological and land conservation function these areas provide. Specifically, this Section is intended to protect habitat for fish and other aquatic life, protect habitat for wildlife, protect water quality for human uses and for aquatic life, control erosion and limit sedimentation, prevent property damage during floods and storms, protect native plant species, and conserve the scenic and recreational values of riparian areas.

B. This Section meets the above purpose by prohibiting structures and other development from riparian areas around fish-bearing lakes, rivers, streams and associated wetlands, and by prohibiting vegetation removal and/or other vegetative alterations in riparian corridors. In cases of hardship, the Section provides a procedure to reduce the riparian corridor boundary. Alteration of the riparian corridor boundary in such cases shall be offset by appropriate restoration or mitigation, as stipulated in this Section.

C. For the purposes of this Section, "development" includes buildings and/or structures which require a building permit under the State of Oregon Uniform Building Code, as amended, or any alteration in the riparian corridor by grading, placement of fill material, construction of an impervious surface, including paved or gravel parking areas or paths, and any land clearing activity such as removal of trees or other vegetation.

[…]

E. The provisions of this riparian protection overlay zone do not exempt persons or property from state or federal laws that regulate protected lands, water, wetland or habitat areas. In addition to the restrictions and requirements of this Section, all proposed development activities within any wetland area may be subject to applicable state and federal agency standards, permits and approval. The applicant shall be responsible for contacting the appropriate state or federal agencies to determine whether all applicable development requirements have been met.

1172 Riparian Corridor Standards:

A. The inventory of Columbia County streams contained in the Oregon Department of Forestry Stream Classification Maps specifies which streams and lakes are fish-bearing. Fish-bearing lakes are identified on the map entitled, "Lakes of Columbia County." A copy of the most current Stream Classification Maps is attached to the Comprehensive Plan, Technical Appendix Part XVI, Article X(B) for reference. Based upon the stream and lake inventories, the following riparian corridor boundaries shall be established:

1. Lakes. Along all fish-bearing lakes, the riparian corridor boundary shall be 50-feet from the top-of-bank, except as provided in CCZO Section 1 172(A)(5), below.

2. Fish-Bearing Streams, Rivers and Sloughs (Less than1000 cfs). Along all fish-bearing streams, rivers, and sloughs with an average annual stream flow of less than 1,000 cubic feet per second (cfs), the riparian corridor boundary shall be 50-feet from the top-of-bank, except as provided in CCZO Section 1172(A)(5), below. Average annual stream flow information shall be provided by the Oregon Water Resources Department.

3. Fish-Bearing and Non-Fish-Bearing Streams, Rivers and Sloughs (Greater than 1000 cfs). Along all streams, rivers, and sloughs with an average annual stream flow greater than 1,000 cubic feet per second (cfs), the riparian corridor boundary shall be 75-feet upland from the top-of bank, except as provided in CCZO Section 1172(A)(5), below. Average annual stream flow information shall be provided by the Oregon Water Resources Department.

4. Other rivers, lakes, streams, and sloughs. Along all other rivers, streams, and sloughs, the riparian corridor boundary shall be 25 feet upland from the top-of-bank, except as provided in CCZO Section 1172(A)(5), below.

5. Wetlands. Where the riparian corridor includes all or portions of a significant wetland, as identified in the State Wetlands Inventory and Local Wetlands Inventories, the standard distance to the riparian corridor boundary shall be measured from, and include, the upland edge of the wetland. Significant wetlands are also regulated under provisions in the Wetland Overlay Zone, Columbia County Zoning Ordinance, Section 1180.

B. Distance Measurement.

1. Except as provided in Subsection 1172(5) above, the measurement of distance to the riparian corridor boundary shall be from the top-of-bank. In areas where the top-of-bank is not clearly delineated, the riparian corridor boundary shall be measured from the ordinary high water level, or the line of non-aquatic vegetation, whichever is most landward.

Condition D.8(12) of the Site Certificate requires compliance with the standards of CCZO § 1172. The only riparian corridor boundary in the vicinity of the Facility is the Columbia River and the Bradbury Slough. Both of these water bodies meet the definition of Fish-Bearing and Non Fish-Bearing Streams, Rivers and Sloughs (Greater than 1,000 cfs). The required riparian corridor boundary for these resources is 75 feet upland from the top of bank. The changes proposed in RFA 11 would be located more than 75 feet from the top of bank and on previously developed land. In addition, there are roads and railroad tracks between the waterways and the proposed changes (See also RFA 11, Attachment 6).

3.4.2 CCZO § 1173 Activities Prohibited within the Riparian Corridor Boundary

In addition to the prohibitions in the underlying zone, the following activities are prohibited within a riparian corridor boundary, except as provided for in Subsections 1175 and 1176 of this Section:

A. The alteration of a riparian corridor by grading, placement of fill material, and/or impervious surfaces, including paved or gravel parking areas, or paths, and/or the construction of buildings or other structures which require a building permit under the State of Oregon Uniform Building Code, as amended.

B. The removal of riparian trees or vegetation.

The changes proposed in RFA 11 are not within the riparian corridor for the Columbia River and Bradbury Slough. Therefore, they do not involve impacts to riparian vegetation.

3.4.3 CCZO § 1175 Permitted Uses and Activities

Notwithstanding the prohibitions set forth in Subsection 1173 above, the following activities are allowed within the riparian corridor boundary:

A. The following riparian vegetation may be removed within the riparian corridor boundary:

1. Trees and vegetation in danger of falling and/or posing a hazard to life and property. If no hazard will be created, such trees or other vegetation, once felled, shall be left in place in the riparian area.

The proposed changes will not be within the riparian corridor.

B. The following development is allowed within the riparian corridor boundary:

[…]

3. Fencing and signs, not including billboards.

4. Drainage facilities, utilities and irrigation pumps.

5. Water related and water dependent uses.

As discussed above, changes proposed in this amendment request would not be located within riparian corridors protected under this ordinance.

3.4.4 CCZO § 1177 Permitted Uses and Activities

Requirements for new activities and development identified in Subsection 1175 and 1176, above, shall be allowed in the riparian corridor boundary subject to the following requirements:

A. All applicable permits from state and federal agencies, such as the Oregon Division of State Lands (DSL) and Oregon Department of Fish and Wildlife (ODFW) must be obtained by the land owner prior to commencing the use or activity.

B. For activities and development for which land use permits, building permits, grading permits, variances or stormwater/erosion control permits are required, the County shall provide notification to ODFW of the proposed development activity. The County shall consider the recommendations of ODFW, including any mitigation recommendations, prior to issuance of permits and may condition permit approval on recommended measures to mitigate loss of fish and wildlife habitat pursuant to applicable provisions of OAR Chapter 635, Division 415.

No new development or activities are proposed within the riparian corridor. Moreover, under applicable statutes and the Council's rules, this request for amendment is provided to the Oregon Department of Fish and Wildlife for review and comment. This is equivalent to the process required by this section of the CCZO. See also Sections 8.7 and 8.8 of RFA 11.

3.4.5 CCZO § 1180 Wetland Area Overlay

CCZO § 1181 Purpose:

The purpose of this zone is to protect significant wetland within the identified Wetland Areas as shown on the State Wetland Inventory and Local Wetland Inventories, from filling, drainage, or other alteration which would destroy or reduce their biological value. The Wetland Area Overlay does not apply to land legally used for commercial forestry operations or standard farm practices, both of which are exempt from these wetland area corridor standards. The use of land for commercial forestry is regulated by the Oregon Department of Forestry. The use of land for standard farm practices is regulated by the Oregon Department of Agriculture, with riparian area and water quality issues governed by ORS 568.210 to ORS 568.805.

The proposed location of the BESS is a developed are with impervious surface; no wetlands are present. PGE completed wetland surveys in the areas around the BESS and the spoils disposal area (RFA 11, Attachment 6). The surveys concluded that there are no wetlands or waterways located within these areas. Therefore, the proposed changes in this amendment request would not impact wetlands. See also Section 10.2 of RFA 11.

3.4.6 CCZO § 1190 Big Game Habitat Overlay

CCZO § 1191 Purpose:

To protect sensitive habitat areas for the Columbian White-tailed Deer and other Big Game by limiting uses and development activities that conflict with maintenance of the areas. This section shall apply to all areas identified in the Comprehensive Plan as a Major and Peripheral Big Game Range or Columbian White-tailed deer range, as shown on the 1995 Beak Consultant's Map, entitled "Wildlife Game Habitat" in the Comprehensive Plan in Appendix Part XVI, Article VIII(A).

The proposed changes in RFA 11 are not in the Big Game Habitat Overlay. Therefore, this standard does not apply.

3.4.7 CCZO § 1550 Site Design Review

The Site Design Review process shall apply to all new development, redevelopment, expansion, or improvement of all community, governmental, institutional, commercial, industrial and multi-family residential (4 or more units) uses in the County.

The standards applicable in Site Design Review for RFA 11 are set forth in CCZO § 1562, which addresses buffering, screening and fencing, and CCZO § 1563, which provides general standards of approval. In addition, PGE will submit a site plan to Columbia County as part of its building permit application consistent with Certificate Conditions D.4(2).

3.4.8 CCZO § 1562 Landscaping: Buffering, Screening and Fencing

These standards address protection of existing vegetation, use of buffering and screening to reduce impacts on adjacent uses that are of a different type, and standards for fencing and walls.

CCZO § 1562 A. General Provisions:

1. Existing plant materials on a site shall be protected to prevent erosion. Existing trees and shrubs may be used to meet landscaping requirements if no cutting or filling takes place within the dripline of the trees or shrubs.

2. All wooded areas, significant clumps or groves of trees, and specimen conifers, oaks or other large deciduous trees, shall be preserved or replaced by new plantings of similar size or character.

With respect to protection of vegetation, the BESS site and the temporary staging and laydown areas are located in areas that are currently paved. The spoils disposal area may be cleared of some vegetation prior to use but will be revegetated after construction activities have been completed, as required by the Site Certificate, specifically Section D.8. Fish and Wildlife Conditions 20-24.

The Site Certificate also includes conditions in Section D.6 Soil Protection for erosion control.

CCZO § 1562 B. Buffering Requirements

1. Buffering and/or screening are required to reduce the impacts on adjacent uses which are of a different type. When different uses are separated by a right of way, buffering, but not screening, may be required.

The purpose of the buffering and screening standards is to reduce impacts on adjacent uses that are of a different type. The Facility is surrounded by parcels with the same zoning (RIPD). The proposed changes at the Facility do not need to be buffered or screened from adjacent uses, because adjacent uses are not of a different type. They are similarly industrial in nature and would not be adversely affected by the addition of BESS to the Facility, as proposed.

The screening requirements are not applicable in the absence of differing uses and because proposed changes will not materially alter the visual setting of the Facility. The BESS will be relatively minor in size, scope, and effect compared to the existing built Facility (see RFA 11, Figure 1); it will be visually subordinate to the Facility

CCZO § 1562 D. Fences and Walls

1. Fences, walls or combinations of earthen berms and fences or walls up to four feet in height may be constructed within a required front yard. Rear and -265- DR side yard fences, or berm/fence combinations behind the required front yard setback may be up to six feet in height.

2. The prescribed heights of required fences, walls, or landscaping shall be measured from the lowest of the adjoining levels of finished grade.

3. Fences and walls shall be constructed of any materials commonly used in the construction of fences and walls such as wood, brick, or other materials approved by the Director. Corrugated metal is not an acceptable fencing material. Chain link fences with slats may be used if combined with a continuous evergreen hedge.

4. Re-vegetation: Where natural vegetation or topsoil has been removed in areas not occupied by structures or landscaping, such areas shall be replanted to prevent erosion.

The proposed changes in this amendment request do not include any new fences or changes to existing and approved external site fences. In the Site Certificate, Section D.8. Fish and Wildlife Conditions 20-24-address revegetation following construction or other disturbance.

3.4.9 CCZO § 1563 Standards for Approval

> *A. Flood Hazard Areas: See CCZO § 1100, Flood Hazard Overlay Zone. All development in Flood Hazard Areas must comply with State and Federal Guidelines.*

The changes proposed in this amendment request will be located outside flood hazard areas or are exempt from requiring a development permit in the special flood hazard area because they are for temporary storage (construction laydown area).

> *B. Wetlands and Riparian Areas: Alteration of wetlands and riparian areas shall be in compliance with State and Federal laws.*

As discussed in this amendment request, the proposed changes will not have any additional impact on wetlands or riparian areas. See also RFA 11, Attachment 6.

> *C. Natural Areas and Features: To the greatest practical extent possible, natural areas and features of the site shall be preserved.*

The BESS will be entirely within the fence line of the Facility, on previously developed impervious surface and will not change the developed footprint of the Facility. Section D.8. Fish and Wildlife Conditions 20-24of the Site Certificate address revegetation following construction or other disturbance.

> *D. Historic and Cultural sites and structures: All historic and culturally significant sites and structures identified in the Comprehensive Plan, or identified for inclusion in the County Periodic Review, shall be protected if they still exist.*

The proposed changes would not affect any historic resources identified because they would all be within the existing fence line or in areas previously used and approved for use by the Facility.

> *E. Lighting: All outdoor lights will be shielded so as not to shine directly on adjacent properties and roads.*

There will be no change to outdoor lighting as part of the changes proposed in RFA 11.

> *F. Energy Conservation: Buildings should be oriented to take advantage of natural energy saving elements such as the sun, landscaping and landforms.*
>
> The purpose of the BESS is to support the efficiency of the energy system it is therefore consistent with the energy conservation standard *G. Transportation Facilities: Off-site auto and pedestrian facilities may be required by the Planning Commission, Planning Director or Public Works Director consistent with the Columbia County Road Standards and the Columbia County Transportation Systems Plan.*

The BESS will not require any additional employees. Therefore, there will be no need for any off-site auto or pedestrian facilities.

4.0 Columbia County Comprehensive Plan

Columbia County's Comprehensive Plan contains policies that address overall planning goals adopted by the county. Although the policy statements do not contain specific substantive criteria, the relevant polices to RFA 11 are discussed below for purposes of completeness.

4.1 Economy

Goals:

1. To strengthen and diversify the economy of Columbia County and insure stable economic growth.

The Council found in the Final Order of the ASC (November 8, 2002) that:

> *The energy facility represents a substantial increase in the energy resource base of Columbia County. Moreover, the energy facility is expected to operate for at least 30 years, providing a stable contribution to the County's economy. The energy facility will employ about 25 employees during operation, and is expected to operate for at least 30 years. Additionally, during construction, the facility would generate about 300 jobs.*[14]

The changes proposed in this amendment request do not alter the estimated energy facility operating life or the estimates of employment during energy facility construction or operation.

2. To utilize Columbia County's natural resources and advantages for expanding and diversifying the economic base.

The Council found in the Final Order of the ASC (November 8, 2002) that:

> *The energy facility will take full advantage of the Columbia River to expand the County's industrial base. The energy facility will withdraw water from the Bradbury Slough under a water right held by the Port of St. Helens. The energy facility will make use of that resource, combined with the use of existing facilities and infrastructure on the Port Westward site (including an interstate natural gas pipeline, water intake, rail access, and transmission corridor), to expand and diversify the County's economic base.* [15]

The changes proposed in this amendment request do not alter the validity of this finding.

8. Reserve valuable industrial sites for industrial use.

The changes proposed in this amendment request take advantage of a valuable industrial site that is zoned to allow industrial use. Moreover, the temporary use of the laydown areas and the disposal of excess soil in the spoils disposal area will not preclude future industrial use of those areas.

[14] Final Order on the Application. 2002. Attachment D. Pg. 33.
[15] Final Order on the Application. 2002. Attachment D. Pg. 33.

4.2 Industrial Development

Goals:

1. To strengthen and diversify the economy of Columbia County and insure stable economic growth.

2. To utilize Columbia County's natural resources and advantages for expanding and diversifying the industrial base.

3. To encourage industrial growth in Columbia County to diversify its economy. New industry should locate to take maximum advantage of existing public and private investments.

The changes proposed in RFA11 meet and support these goals because they will continue industrial development on a site zoned and used for industrial use that will result in construction jobs. As discussed above, the Facility site takes advantage of Columbia County's natural resources, and is thereby consistent with the Economy element of the Comprehensive Plan.

Policies:

It shall be a policy of the County to establish, implement, and maintain an industrial program which:

9. Assures land which is already used as industrial or irrevocably committed to industry shall be so designated.

The Council found in the Final Order of the ASC (November 8, 2002) that: *The Port Westward Exception Statement reflects that the Port Westward Industrial Park is designated for industrial use due to its historic use for industrial purposes and its suitability for future industrial use. The Exception Statement identifies potential future uses of the property. All of the uses listed are industrial uses that would take advantage of the surrounding natural resources or facilities.*[16]

The changes proposed in RFA 11 do not affect the continued validity of this finding.

12. Is consistent with the exception statements for those sites requiring an exception to the applicable resource goal.

Columbia County took an exception to Statewide Planning Goal 3, Agriculture to zone land outside of the Urban Growth Boundary as industrial land. The Port Westward Exception Statement is included as part of the Columbia County Comprehensive Plan. The Exception Statement discusses the site's existing character and facilities, history, and surrounding uses. The Exception Statement demonstrates that the Port Westward site is ideally suited for further industrial development that is consistent with its proximity to the Columbia River as well as other existing facilities. The changes proposed in this amendment request are consistent with the identified goals and future uses of the Port Westward tract.

[16] Final Order on the Application. 2002. Attachment D. Pg. 35

4.3 Resource Industrial Development

Goal:

It is a goal of the County to provide for industrial development on rural lands when such development can be shown to support, utilize, or in some manner be dependent upon, the natural resources of the area.

The Council found in the Final Order of the ASC (November 8, 2002) that: *The RIPD zone provides a zone that conditionally allows industrial development on rural lands provided they use the surrounding natural resources. As discussed above with respect to the CCZO §§ 681 and 683, the energy facility will use the natural resources available at the Port Westward tract consistent with the Resource Industrial Development element of the Comprehensive Plan. For the reasons outlined above with respect to the Industrial Development element and CCZO §§ 681 and 683, the facility is consistent with the policies of the Resource Industrial Development element as well.*[17]

The changes proposed in this amendment request do not alter the continued validity of this finding.

4.4 Public Facilities and Services

Goal:

To plan and develop a timely, orderly, and efficient arrangement of public services as a framework for urban and rural development.

Policies:

It shall be the County policy to:

4. Encourage new development on lands within urban growth boundaries or built and committed exception areas.

The Port Westward Industrial Park is a "committed" exception area. Therefore, the changes proposed as new development implement this policy.

13. Support a level of fire safety and service in all areas of the County sufficient to minimize the risk of fire damage to life and property.

Condition D.13(8) of the Site Certificate requires that the certificate holder:

… construct a fire protection system within the buildings and yard areas of the energy facility site that meets the requirements of the Uniform Fire Code, as amended by Oregon and the National Fire Protection Association standards, and all other applicable fire protection standards in effect at the time of construction.

With this condition, the facility minimizes the risk of fire damage to life and property. In addition, the BESS will have an internal fire protection system that will include alarms and fire suppression

[17] Final Order on the Application. 2002. Attachment D. Pg. 35.

systems that will meet the battery chemistry requirements of the BESS. The fire suppression system will contain a fire for a minimum of 90 minutes, providing ample time to respond to an alarm. A fire alarm panel at the BESS will connect to the Facility Control Room so that operators are able to receive, acknowledge, and silence alarms and initiate human response.

4.5 Open Space, Scenic and Historic Areas, and Natural Resources

Energy Sources

> The Council found in the Final Order of the ASC (November 8, 2002) that: *The Comprehensive Plan lists the Trojan Nuclear Plant, the Beaver Generating Plant, and the natural gas wells in the Mist area as the primary sources of energy in the County. The Trojan Plant is no longer producing energy. The energy facility will significantly enhance the electrical generating capacity of the County.*[18]

The BESS will enhance the electrical production effectiveness and efficiency for a key energy source in Columbia County.

Habitat

Protection of habitat is implemented through CCZO § 1170 (Riparian Corridors, Wetlands, Water Quality, and Fish and Wildlife Habitat Protection Overlay Zone), CCZO § 1180 (Wetland Area Overlay) and CCZO § 1190 (Big Game Habitat Overlay). Compliance with those standards is addressed above in the discussion of the respective sections of the CCZO. See also Sections 8.7, 8.8, and 10.2 of RFA 11.

Wetlands

Protection of wetlands is implemented through CCZO § 1180 (Wetland Area Overlay). Compliance with those standards is addressed above in the discussion of CCZO § 1180. The changes proposed in this amendment request would not impact wetlands. See also Section 10.2 of RFA 11.

Riparian Areas

Protection of riparian corridors is addressed above in the discussion of CCZO § 1170.

Air, Land, and Water Resources

Goal:

To maintain and improve land resources and the quality of the air and water of the County.

The facility as proposed will satisfy this goal through its compliance with all applicable federal and state standards. See also Section 5.1 and Section 7 of RFA 11.

Policies:

It shall be the policy of Columbia County to:

[18] Oregon Energy Facility Siting Council, Final Order on the Application for Site Certificate for Port Westward Generating Project, November 8, 2002, Attachment D, p. 11

1. Work with the appropriate State and Federal agencies to insure that State and Federal water, air, and land resource quality standards are met.

The proposed changes do not affect compliance with state or federal water, air and land quality standards, except during construction. PGE maintains an agreement with the Port of Columbia County (formerly the Port of St. Helens) to discharge industrial wastewaters through the Port of Columbia County's National Pollutant Discharge Elimination System permit. No modifications to this agreement are required since no wastewater will be generated by the BESS during construction or operation. See Section 5.1 of RFA 11.

2. Comply with all applicable State and Federal standards and regulations regarding noise pollution.

The BESS will not affect compliance with state noise regulations. See Section 10.1 of RFA 11.

5.0 Directly Applicable State Provisions, Applicable Administrative Rules

OAR 345-022-0030(2)(b)(A) requires the Facility to comply with new or amended statewide planning goals, LCDC administrative rules, and land use statutes that are directly applicable to the energy project under ORS 197.646(3). In the Final Order, the only "directly applicable statewide planning goals, LCDC administrative rules or land use statutes applied to exclusive farm use (Statewide Planning Goal 3) zones and forestry (Statewide Planning Goal 4) zones.[19] There are no goals, rules or statutes directly applicable to uses within the RIPD zone.

6.0 Federal Land Management Plans

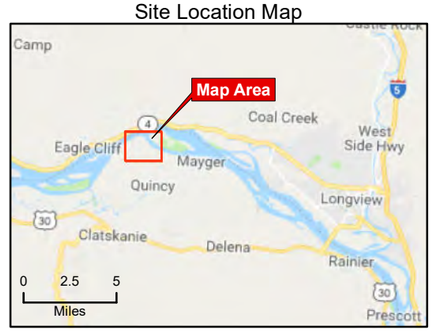
The Facility is not located on lands under federal land use jurisdiction. As a result, there are no federal land management plans applicable to this amendment request.

7.0 Conclusion

Based on the foregoing analysis, the PGE has demonstrated compliance with all applicable substantive criteria in Columbia County's acknowledged comprehensive plan and land use regulations that are required by the statewide planning goals and were in effect on the date the application was submitted, as well as any statewide planning goals, LCDC administrative rules and land use statutes directly applicable to the Facility.

[19] Final Order on the Application. 2002. Attachment D. Pg. 44-49.

Site Location Map



Map Features

- Proposed Battery Storage Area
- Energy Facility Site Boundary
- PGE Lease Boundary

0 400 800
Feet

PGE

N
W E
S

Portland General Electric
Portland, Oregon

Figure 2.1

Proposed Battery Storage Setback Area

Port Westward Generating Project

Date:	Drawn By:	Rev.:
4/8/2019	J.B. Hoy	

Drawing File: J:\Port_Westward\PW2\Maps\PW2_Battery_Storage_Lease.mxd

Appendix A. Columbia County Comments on Substantive Criteria

From: Matt Laird
To: Solsby, Anneke
Cc: Deborah Jacob
Subject: Re: PGE Port Westward Generating Facility - Proposed Battery Storage
Date: Friday, March 29, 2019 11:02:10 AM

Hi Anneke,

It was nice to talk with you on the phone today. As we discussed, besides the criteria that you have listed below, I would also add the following:

CCZO Sec. 1100
CCZO Sec. 1400
CCZO Sec. 1450

As far as local land use process is concerned, we would typically request a pre-application conference followed by a Type II Design Review. The Pre-Application conference can be waived if it is determined to be un-necessary, but can often be quite helpful in order to get an early preview of the comments you might receive from the County Departments during the Design Review Process.

Feel free to contact me if you would like to discuss this matter further.

Cordially,

Matt Laird,
Planning Manager
Columbia County
503-397-7217

From: Deborah Jacob
Sent: Tuesday, March 26, 2019 3:56 PM
To: Solsby, Anneke; Matt Laird
Subject: Re: PGE Port Westward Generating Facility - Proposed Battery Storage

Anneke,

Thank you for providing this additional information to Columbia County Land Development Services concerning the applicable land use criteria for the proposed amendment (RFA 11) of the PGE Port Westward Generating Facility that was originally authorized in 2002.

It appears that in previous amendments have been processed by the County Planning Manager. Consequently, I am forwarding your email to my supervisor, Matt Laird who is the Columbia County Planning Manager, for him to respond to this current request. I expect Matt to be contacting you in the near future if he needs additional information and/or clarification .

Best regards,

Deborah S. Jacob
Planner III
503-397-7260

From: Solsby, Anneke <Anneke.Solsby@tetratech.com>
Sent: Tuesday, March 26, 2019 12:43:38 PM
To: Deborah Jacob
Cc: Fossum, Linnea; Richard H. Allan; Erica.Amt@pgn.com
Subject: PGE Port Westward Generating Facility - Proposed Battery Storage

Hello, Deborah,

Thank you for taking the time to talk with me yesterday regarding the PGE Port Westward Generating Facility, an energy facility under Energy Facility Siting Council (EFSC) jurisdiction. The Facility first received a site certificate from EFSC in 2002 and since then has requested 10 amendments to the site certificate. As discussed, PGE is proposing to add battery storage to the Facility. Therefore, we are in the process of preparing the eleventh request to the site certificate (RFA 11) to add battery storage to the Facility to submit to the Oregon Department of Energy (ODOE). ODOE's Siting Division is technical staff to EFSC and administers the site certificate application and amendment process. Please see the attached for a description for the Port Westward Battery Energy Storage System (PWBESS) and associated site map. For your use, please also see attached tax lot map (SECTION 15 T.8N. R.4W. W.M. Tax lot 100) and link to online GIS map: https://geo.maps.arcgis.com/home/webmap/viewer.html?webmap=5f58fa2370004bf6b42cafe8187badae&find=Port%20Westward%20Generating%20Project&mapOnly=true.

As part of RFA 11, we need to address the applicable land use criteria from the affected local government's acknowledged comprehensive plan and land use ordinances. Below is a list of sections of the Columbia County Zoning Ordinance (CCZO; adopted 1984 and amended thru 2018) and Columbia County Comprehensive Plan (adopted 1984 and amended thru 2011) that we are addressing for RFA 11 which were also addressed as part of the original site certificate application and subsequent amendments. Are there other land use standards or ordinances that should be addressed?

- CCZO Section 680 Resource Industrial – Planned Development
- CCZO § 683 Uses Permitted Under Prescribed Conditions
- CCZO § 685 Standards
- CCZO § 1503 Conditional Uses
- CCZO § 1170 Riparian Corridors, Wetlands, Water Quality and Fish and Wildlife Habitat Overlay Zone
- CCZO § 1173 Activities Prohibited within the Riparian Corridor Boundary
- CCZO § 1175 Permitted Uses and Activities
- CCZO § 1177 Permitted Uses and Activities
- CCZO § 1180 Wetland Area Overlay
- CCZO § 1190 Big Game Habitat Overlay
- CCZO § 1550 Site Design Review
- CCZO § 1562 Landscaping: Buffering, Screening and Fencing
- Columbia County Comprehensive Plan Sections:
    - Economy

Industrial Development

- Resource Industrial Development
- Public Facilities and Services
- Open Space, Scenic and Historic Areas, and Natural Resources

In addition, please provide copies of conditional use or other land use permits for the Port Westward Generating Facility. Please let me know if you have any questions or need additional information.

Thank you!

Anneke Solsby | **Environmental Planner**
Anneke.Solsby@tetratech.com

Tetra Tech | **Portland**
1750 SW Harbor Way, Suite 400 | Portland, OR 97201
Direct: 503.721.7217 | Fax: 503.227.1287 | Cell: 503.860.9076

Attachment 3. Decommissioning Costs

Decommissioning Estimate – Lithium-Ion Batteries

CBS Outline Report
TETRA TECH EC, INC.
Job Code: Port Westward
Description: Energy Storage Decommissioning Estimate

From Cost Item: . **To Cost Item: .**

Code	Description	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)	User Defined 1
1	PORT WESTWARD BESS REMOVAL					
1.1	Mob / Demob	1.00	Lump Sum	23,779.34	23,779.34	
1.1.1	Equipment Mob	1.00	Lump Sum	20,300.00	20,300.00	
1.1.2	Crew Mob & Site Setup	1.00	Day	1,739.67	1,739.67	
1.1.3	Crew Demob & Site Cleanup	1.00	Day	1,739.67	1,739.67	
1.2	Field Management	4.00	Week	11,674.55	46,698.22	
1.3	UG Utility & Ground Removal	2.00	Day	1,202.19	2,404.37	
1.5	6 MW Energy Storage System Removal - Lithium Ion	1.00	Lump Sum	25,385.61	25,385.61	
1.5.1	Battery Removal & Disposal	6.00	MW	2,577.45	15,464.70	
1.5.1.1	Remove Batteries, Load For Transport	5.00	Day	1,737.94	8,689.70	
1.5.1.2	Transport Batteries	1.00	Each	1,375.00	1,375.00	
1.5.1.2.1	Trucking - Per Load	1.00	Each	1,375.00	1,375.00	
1.5.1.3	Disposal Fee's	27.00	Ton	200.00	5,400.00	
1.5.2	Structure & Components Removal	2.00	Each	2,300.00	4,600.00	
1.5.2.1	Trucking - Per Load	2.00	Each	2,000.00	4,000.00	
1.5.2.2	Disposal Cost	20.00	Ton	30.00	600.00	
1.5.3	Concrete foundation Breaking & Excavation	33.00	Cubic Yard	124.96	4,123.57	
1.5.4	Concrete Transport Offsite	33.00	Cubic Yard	36.28	1,197.34	
1.6	Restoration Pavement	2,400.00	Square Feet	4.00	9,600.00	
1.7	Home Office, Project Management (5% Of Cost)	1.00	Lump Sum	5,393.40	5,393.40	
1.8	Contractor Contingency (5% Of Cost)	1.00	Lump Sum	5,663.05	5,663.05	
1.9	Contractor OH & Fee (15% Of Cost)	1.00	Lump Sum	17,838.60	17,838.60	
Total:	**PORT WESTWARD BESS REMOVAL**				**136,762.59**	
Grand Total:					**136,762.59**	

Estimate Summary
TETRA TECH EC, INC.
Job Code: Port Westward
Description: Energy Storage Decommissioning Estimate

CBS Position Code	Quantity	UM	Description	Days	UM/Day	Cost Source	Currency	Unit Cost	Total Cost
1	1.00	Lump Sum	PORT WESTWARD BESS REMOVAL	35.00	0.03	Detail	U.S. Dollar	136,762.59	136,762.59
1.1	1.00	Lump Sum	Mob / Demob	2.00	0.50	Detail	U.S. Dollar	23,779.34	23,779.34
1.1.1	1.00	Lump Sum	Equipment Mob	0.00	0.00	Detail	U.S. Dollar	20,300.00	20,300.00

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
UERNTRLG	Rental Equip Transp-Large		2.00	Each	U.S. Dollar	10,000.00	20,000.00
UERNTRSM	Rental Equip Transp-Small		2.00	Each	U.S. Dollar	150.00	300.00

1.1.2	1.00	Day	Crew Mob & Site Setup	1.00	1.00	Detail	U.S. Dollar	1,739.67	1,739.67

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
L060100	GENERAL LABORER	20.00	2.00	Each (hourly)	U.S. Dollar	38.04	760.75
L010101	OPERATOR	20.00	2.00	Each (hourly)	U.S. Dollar	48.95	978.93

1.1.3	1.00	Day	Crew Demob & Site Cleanup	1.00	1.00	Detail	U.S. Dollar	1,739.67	1,739.67

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
L060100	GENERAL LABORER	20.00	2.00	Each (hourly)	U.S. Dollar	38.04	760.75
L010101	OPERATOR	20.00	2.00	Each (hourly)	U.S. Dollar	48.95	978.93

1.2	4.00	Week	Field Management	24.00	0.17	Detail	U.S. Dollar	11,674.55	46,698.22

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
L90FXX02	Field - Proj Superintendent	240.00	1.00	Each (hourly)	U.S. Dollar	83.18	19,963.68
RPUTRK05	F-250 4X4 3/4 TON PICKUP	480.00	2.00	Each (hourly)	U.S. Dollar	11.07	5,311.20
L90FXX03	Field - SHSO	240.00	1.00	Each (hourly)	U.S. Dollar	89.26	21,423.34

1.3	2.00	Day	UG Utility & Ground Removal	2.00	1.00	Detail	U.S. Dollar	1,202.19	2,404.37

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
L010101	OPERATOR	20.00	1.00	Each (hourly)	U.S. Dollar	48.95	978.93
L060100	GENERAL LABORER	20.00	1.00	Each (hourly)	U.S. Dollar	38.04	760.75
RBACKH09	Deere 710J BACKHOE, 1.62CY	20.00	1.00	Each (hourly)	U.S. Dollar	33.24	664.70

1.5	1.00	Lump Sum	6 MW Energy Storage System Removal - Lithium Ion	7.00	0.14	Detail	U.S. Dollar	25,385.61	25,385.61
1.5.1	6.00	MW	Battery Removal & Disposal	5.00	1.20	Detail	U.S. Dollar	2,577.45	15,464.70
1.5.1.1	5.00	Day	Remove Batteries, Load For Transport	5.00	1.00	Detail	U.S. Dollar	1,737.94	8,689.70

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
L060100	GENERAL LABORER	200.00	4.00	Each (hourly)	U.S. Dollar	38.04	7,607.45
RLIFTS05	JCB 508C, 8,000lbs FRKLFT	50.00	1.00	Each (hourly)	U.S. Dollar	21.65	1,082.25

Notes: **********
12 modules per 163.7 KW, for a total of 444 modules.
Modules are flammable, and must be carefuly packaged for transport.
****

1.5.1.2	1.00	Each	Transport Batteries	0.00	0.00	Detail	U.S. Dollar	1,375.00	1,375.00
1.5.1.2.1	1.00	Each	Trucking - Per Load	0.00	0.00	Detail	U.S. Dollar	1,375.00	1,375.00

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
USTRUCKING	Trucking Sub		1,375.00	Each	U.S. Dollar	1.00	1,375.00

1.5.1.3	27.00	Ton	Disposal Fee's	0.00	0.00	Detail	U.S. Dollar	200.00	5,400.00

CBS Position Code	Quantity	UM	Description	Cost Item Days	Cost UM/Day	Cost Source	Currency	Unit Cost	Total Cost
Resource Code	**Description**			**Hours**	**Quantity**	**UM**	**Currency**	**Unit Cost**	**Total Cost**
USDISPOSAL	Disposal Fee's				5,400.00	Each	U.S. Dollar	1.00	5,400.00
Notes:	12 modules per 163.7 KW, for a total of 444 modules. Each module is 119 lbs, for a total of 27 tons of modules.								
1.5.2	2.00	Each	Structure & Components Removal		0.00	0.00	Detail	U.S. Dollar	2,300.00	4,600.00
1.5.2.1	2.00	Each	Trucking - Per Load		0.00	0.00	Detail	U.S. Dollar	2,000.00	4,000.00
Resource Code	**Description**			**Hours**	**Quantity**	**UM**	**Currency**	**Unit Cost**	**Total Cost**
USTRUCKING	Trucking Sub				4,000.00	Each	U.S. Dollar	1.00	4,000.00
Notes:	Containers w/contents to be transported by flat bed semi to local recycle/disposal facility								
1.5.2.2	20.00	Ton	Disposal Cost		0.00	0.00	Detail	U.S. Dollar	30.00	600.00
Resource Code	**Description**			**Hours**	**Quantity**	**UM**	**Currency**	**Unit Cost**	**Total Cost**
USDISPOSAL	Disposal Fee's				600.00	Each	U.S. Dollar	1.00	600.00
Notes:	2 containers w/contents, assumed to weigh 10 tons each								
1.5.3	33.00	Cubic Yard	Concrete foundation Breaking & Excavation		1.00	33.00	Detail	U.S. Dollar	124.96	4,123.57
Notes:	Assumed that each container will be supported by concrete footings								
1.5.4	33.00	Cubic Yard	Concrete Transport Offsite		1.00	33.00	Detail	U.S. Dollar	36.28	1,197.34
Resource Code	**Description**			**Hours**	**Quantity**	**UM**	**Currency**	**Unit Cost**	**Total Cost**
RDUTRK06	CAT D350D, 18CY-24CY			10.00	1.00	Each (hourly)	U.S. Dollar	74.29	742.90
L080940	TEAMSTER			10.00	1.00	Each (hourly)	U.S. Dollar	45.44	454.44
1.6	2,400.00	Square Feet	Restoration Pavement		0.00	0.00	Detail	U.S. Dollar	4.00	9,600.00
Resource Code	**Description**			**Hours**	**Quantity**	**UM**	**Currency**	**Unit Cost**	**Total Cost**
USMISC	Misc Sub				9,600.00	Each	U.S. Dollar	1.00	9,600.00
Notes:	Disturbed areas to be restored with compacted base and asphalt pavement								
1.7	1.00	Lump Sum	Home Office, Project Management (5% Of Cost)		0.00	0.00	Detail	U.S. Dollar	5,393.40	5,393.40
Resource Code	**Description**			**Hours**	**Quantity**	**UM**	**Currency**	**Unit Cost**	**Total Cost**
USMARKUP5	5% Markup				107,868.00	Each	U.S. Dollar	0.05	5,393.40
1.8	1.00	Lump Sum	Contractor Contingency (5% Of Cost)		0.00	0.00	Detail	U.S. Dollar	5,663.05	5,663.05
Resource Code	**Description**			**Hours**	**Quantity**	**UM**	**Currency**	**Unit Cost**	**Total Cost**
USMARKUP5	5% Markup				113,261.00	Each	U.S. Dollar	0.05	5,663.05
1.9	1.00	Lump Sum	Contractor OH & Fee (15% Of Cost)		0.00	0.00	Detail	U.S. Dollar	17,838.60	17,838.60
Resource Code	**Description**			**Hours**	**Quantity**	**UM**	**Currency**	**Unit Cost**	**Total Cost**
USMARKUP	15% Markup				118,924.00	Each	U.S. Dollar	0.15	17,838.60
Report Total:					35.00				136,762.59

CBS Position Code	Quantity	UM	Description	Cost Item Days	Cost UM/Day	Cost Source	Currency	Unit Cost	Total Cost
Category									**Total**
Labor									56,407.59
Rented Equipment									10,184.95
Subcontract									70,170.05

Decommissioning Estimate – FLOW Batteries

CBS Outline Report
TETRA TECH EC, INC.
Job Code: Port Westward
Description: Energy Storage Decommissioning Estimate

From Cost Item: . **To Cost Item: .**

Code	Description	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)	User Defined 1
1	PORT WESTWARD BESS REMOVAL					
1.1	Mob / Demob	1.00	Lump Sum	23,779.34	23,779.34	
1.1.1	Equipment Mob	1.00	Lump Sum	20,300.00	20,300.00	
1.1.2	Crew Mob & Site Setup	1.00	Day	1,739.67	1,739.67	
1.1.3	Crew Demob & Site Cleanup	1.00	Day	1,739.67	1,739.67	
1.2	Field Management	4.00	Week	11,674.55	46,698.22	
1.3	UG Utility & Ground Removal	2.00	Day	1,202.19	2,404.37	
1.4	6 MW Energy Storage System Removal	1.00	Lump Sum	420,434.11	420,434.11	
1.4.1	Battery Removal & Disposal	6.00	MW	68,418.87	410,513.20	
1.4.1.1	Remove Batteries, Load For Transport	600.00	Each	86.90	52,138.20	
1.4.1.2	Trucking - Per Load	49.00	Each	1,375.00	67,375.00	
1.4.1.3	Disposal Fee's	1,455.00	Ton	200.00	291,000.00	
1.4.2	Structure & Components Removal	2.00	Each	2,300.00	4,600.00	
1.4.2.1	Trucking - Per Load	2.00	Each	2,000.00	4,000.00	
1.4.2.2	Disposal Cost	20.00	Ton	30.00	600.00	
1.4.3	Concrete foundation Breaking & Excavation	33.00	Cubic Yard	124.96	4,123.57	
1.4.4	Concrete Transport Offsite	33.00	Cubic Yard	36.28	1,197.34	
1.5	Restoration Pavement	2,400.00	Square Feet	4.00	9,600.00	
1.6	Home Office, Project Management (5% Of Cost)	1.00	Lump Sum	25,145.80	25,145.80	
1.7	Contractor Contingency (5% Of Cost)	1.00	Lump Sum	26,403.10	26,403.10	
1.8	Contractor OH & Fee (15% Of Cost)	1.00	Lump Sum	83,169.75	83,169.75	
Total:	**PORT WESTWARD BESS REMOVAL**				**637,634.69**	
Grand Total:					**637,634.69**	

Estimate Summary
TETRA TECH EC, INC.
Job Code: Port Westward
Description: Energy Storage Decommissioning Estimate

CBS Position Code	Quantity	UM	Description	Days	UM/Day	Cost Source	Currency	Unit Cost	Total Cost
			Cost Item						
1	1.00	Lump Sum	PORT WESTWARD BESS REMOVAL	60.00	0.02	Detail	U.S. Dollar	637,634.69	637,634.69
1.1	1.00	Lump Sum	Mob / Demob	2.00	0.50	Detail	U.S. Dollar	23,779.34	23,779.34
1.1.1	1.00	Lump Sum	Equipment Mob	0.00	0.00	Detail	U.S. Dollar	20,300.00	20,300.00

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
UERNTRLG	Rental Equip Transp-Large		2.00	Each	U.S. Dollar	10,000.00	20,000.00
UERNTRSM	Rental Equip Transp-Small		2.00	Each	U.S. Dollar	150.00	300.00

1.1.2	1.00	Day	Crew Mob & Site Setup	1.00	1.00	Detail	U.S. Dollar	1,739.67	1,739.67

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
L060100	GENERAL LABORER	20.00	2.00	Each (hourly)	U.S. Dollar	38.04	760.75
L010101	OPERATOR	20.00	2.00	Each (hourly)	U.S. Dollar	48.95	978.93

1.1.3	1.00	Day	Crew Demob & Site Cleanup	1.00	1.00	Detail	U.S. Dollar	1,739.67	1,739.67

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
L060100	GENERAL LABORER	20.00	2.00	Each (hourly)	U.S. Dollar	38.04	760.75
L010101	OPERATOR	20.00	2.00	Each (hourly)	U.S. Dollar	48.95	978.93

1.2	4.00	Week	Field Management	24.00	0.17	Detail	U.S. Dollar	11,674.55	46,698.22

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
L90FXX02	Field - Proj Superintendent	240.00	1.00	Each (hourly)	U.S. Dollar	83.18	19,963.68
RPUTRK05	F-250 4X4 3/4 TON PICKUP	480.00	2.00	Each (hourly)	U.S. Dollar	11.07	5,311.20
L90FXX03	Field - SHSO	240.00	1.00	Each (hourly)	U.S. Dollar	89.26	21,423.34

1.3	2.00	Day	UG Utility & Ground Removal	2.00	1.00	Detail	U.S. Dollar	1,202.19	2,404.37

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
L010101	OPERATOR	20.00	1.00	Each (hourly)	U.S. Dollar	48.95	978.93
L060100	GENERAL LABORER	20.00	1.00	Each (hourly)	U.S. Dollar	38.04	760.75
RBACKH09	Deere 710J BACKHOE, 1.62CY	20.00	1.00	Each (hourly)	U.S. Dollar	33.24	664.70

1.4	1.00	Lump Sum	6 MW Energy Storage System Removal	32.00	0.03	Detail	U.S. Dollar	420,434.11	420,434.11
1.4.1	6.00	MW	Battery Removal & Disposal	30.00	0.20	Detail	U.S. Dollar	68,418.87	410,513.20
1.4.1.1	600.00	Each	Remove Batteries, Load For Transport	30.00	20.00	Detail	U.S. Dollar	86.90	52,138.20

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
L060100	GENERAL LABORER	1,200.00	4.00	Each (hourly)	U.S. Dollar	38.04	45,644.70
RLIFTS05	JCB 508C, 8,000lbs FRKLFT	300.00	1.00	Each (hourly)	U.S. Dollar	21.65	6,493.50

Notes: **********
Flow batteries are assumed to conist of individual 10KW
self contained units, 100 units per MW, 4850 lbs. per unit.
Removal and ready for transport: 30 crew minutes per unit.
****

1.4.1.2	49.00	Each	Trucking - Per Load	0.00	0.00	Detail	U.S. Dollar	1,375.00	67,375.00

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
USTRUCKING	Trucking Sub		67,375.00	Each	U.S. Dollar	1.00	67,375.00

Notes: **********
Flow batteries are assumed to conist of individual 10KW
self contained units, 100 units per MW, 4850 lbs. per unit.
Total battery weight for 6 MW - 1455 tons
Trucking @ 30 tons per load
****

CBS Position Code	Quantity	UM	Description	Days	Cost UM/Day	Cost Source	Currency	Unit Cost	Total Cost
1.4.1.3	1,455.00	Ton	Disposal Fee's	0.00	0.00	Detail	U.S. Dollar	200.00	291,000.00

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
USDISPOSAL	Disposal Fee's		291,000.00	Each	U.S. Dollar	1.00	291,000.00

Notes: **********
Flow batteries are assumed to conist of individual 10KW
self contained units, 100 units per MW, 4850 lbs. per unit.
Total battery weight for 6 MW - 1455 tons
****

1.4.2	2.00	Each	Structure & Components Removal	0.00	0.00	Detail	U.S. Dollar	2,300.00	4,600.00
1.4.2.1	2.00	Each	Trucking - Per Load	0.00	0.00	Detail	U.S. Dollar	2,000.00	4,000.00

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
USTRUCKING	Trucking Sub		4,000.00	Each	U.S. Dollar	1.00	4,000.00

Notes: **********
Containers w/contents to be transported by flat bed semi
to local recycle/disposal facility
****

1.4.2.2	20.00	Ton	Disposal Cost	0.00	0.00	Detail	U.S. Dollar	30.00	600.00

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
USDISPOSAL	Disposal Fee's		600.00	Each	U.S. Dollar	1.00	600.00

Notes: **********
2 containers w/contents, assumed to weigh 10 tons each
****

1.4.3	33.00	Cubic Yard	Concrete foundation Breaking & Excavation	1.00	33.00	Detail	U.S. Dollar	124.96	4,123.57

Notes: **********
Assumed that each container will be supported by concrete footings
****

1.4.4	33.00	Cubic Yard	Concrete Transport Offsite	1.00	33.00	Detail	U.S. Dollar	36.28	1,197.34

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
RDUTRK06	CAT D350D, 18CY-24CY	10.00	1.00	Each (hourly)	U.S. Dollar	74.29	742.90
L080940	TEAMSTER	10.00	1.00	Each (hourly)	U.S. Dollar	45.44	454.44

1.5	2,400.00	Square Feet	Restoration Pavement	0.00	0.00	Detail	U.S. Dollar	4.00	9,600.00

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
USMISC	Misc Sub		9,600.00	Each	U.S. Dollar	1.00	9,600.00

Notes: **********
Disturbed areas to be restored with compacted base
and asphalt pavement
****

1.6	1.00	Lump Sum	Home Office, Project Management (5% Of Cost)	0.00	0.00	Detail	U.S. Dollar	25,145.80	25,145.80

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
USMARKUP5	5% Markup		502,916.00	Each	U.S. Dollar	0.05	25,145.80

1.7	1.00	Lump Sum	Contractor Contingency (5% Of Cost)	0.00	0.00	Detail	U.S. Dollar	26,403.10	26,403.10

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
USMARKUP5	5% Markup		528,062.00	Each	U.S. Dollar	0.05	26,403.10

1.8	1.00	Lump Sum	Contractor OH & Fee (15% Of Cost)	0.00	0.00	Detail	U.S. Dollar	83,169.75	83,169.75

Resource Code	Description	Hours	Quantity	UM	Currency	Unit Cost	Total Cost
USMARKUP	15% Markup		554,465.00	Each	U.S. Dollar	0.15	83,169.75

CBS Position Code	Quantity	UM	Description	Cost Item Days	Cost UM/Day	Source	Currency	Unit Cost	Total Cost
Report Total:				60.00					637,634.69

Category	Total
Labor	94,444.84
Rented Equipment	15,596.20
Subcontract	527,593.65

Attachment 4a. Redline Version Revegetation and Noxious Weed Control Plan

Style Definition: TOC 1: Font: Not Bold

Revegetation and ~~Invasive Species Monitoring~~Noxious Weed Control Plan
Port Westward Generating Project

Submitted by:

Portland General Electric

~~October 2006~~Revision 1, April 2019

TABLE OF CONTENTS

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1.0 INTRODUCTION

Portland General Electric Company (PGE) began commercial operation of Unit 1 of the Port Westward Generating Project (PGWP Unit1) in June 2007. Construction of PGWP Unit 2 began in May 2013 and the project started commercial operation on December 30, 2014. Major soil disturbance activities associated with plant site preparation and construction included rough grading, excavation, filling, stockpiling, and final grading. Following the completion of construction activity, erosion control and revegetation measures were conducted as required in the original site certificate (Unit 1) and tenth amended site certificate (Unit 2) issued by the Oregon Energy Facility Siting Council (OR-EFSC 2006, 2013) and consistent with the project Erosion and Sediment Control Plan and the original Revegetation and Invasive Species Monitoring Plan (RISMP, PGE 2006).

Revegetation and monitoring of temporary disturbance areas associated with PGWP Unit 1 was conducted in 2007 through 2011 (PGE 2011). Monitoring of PWGP Unit 2 temporary disturbance areas is in progress, with the initial five-year monitoring program to be completed in 2019 (PGE 2018).

Construction of PGWP Unit 2 began in May 2013 and the project started commercial operation on December 30, 2014. Major soil disturbance activities associated with plant site preparation and construction included rough grading, excavation, filling, stockpiling, and final grading. Following the completion of construction activity, erosion control and revegetation measures were conducted as required in the tenth Amended Site Certificate issued by the Oregon Energy Facility Siting Council (OR-EFSC 2013) and consistent with the project's Erosion and Sediment Control Plan (Black and Veatch 2013) and the Revegetation and Invasive Species Monitoring Plan (RISMP, PGE 2006).

~~Portland General Electric is scheduled to complete construction of the Port Westward Generating Project by March 2007. Construction site preparation activities included installing stone columns, clearing and grubbing, and excavation work. Subsequent construction and site stabilization activities include constructing new structures and equipment, installing buried water and gas lines, regrading the site, installing a plant access road, seeding soil disturbance areas outside of the power block area, and putting down aggregate surfacing inside the power block area. Soil disturbing activities include rough grading, excavation, filling, stockpiling, and final grading. The above construction activities, including equipment staging areas, construction trailers and temporary parking areas occur over approximately 20 acres at the immediate plant construction site. Potential soil disturbance areas also include approximately 14 acres of pipeline corridor, and a 13.5 acre spoils stockpiling and disposal site.~~

~~The Port Westward to Trojan Transmission Line portion of the Project will be completed by October 31, 2006. Transmission line construction consisted of right-of-way clearance, erecting steel transmission towers on concrete piers, and stringing conductors between towers. Ground-disturbing construction activities consisted of minor leveling, foundation excavation, concrete placement, pulling of conductor wire, and associated construction vehicle disturbance and staging of equipment/materials. Total work area along the right-of-way, including soil disturbance areas, staging areas and work areas, is estimated to be 24 acres, distributed among 103 tower foundation sites. There also were some limited soil disturbance impacts and vegetation~~

~~clearing in riparian areas associated with right-of-way clearance and temporary stream crossings for construction vehicles.~~

~~During all construction activity, PGE implemented mitigation measures as required by the Project Site Certificate issued by the Oregon Facility Siting Council and as described in the Generating Plant and Transmission Line Sediment and Erosion Control Plans. The Project Site Certificate includes specific measures for revegetation of soil and riparian disturbance areas following completion of the Project. The Site Certificate also requires follow-up monitoring of soil and riparian disturbance areas for revegetation success, soil erosion issues, and invasive plant species.~~

This revised revegetation monitoring plan ~~This Revegetation and Invasive Species Monitoring Plan~~ will apply to completion of revegetation monitoring for Unit 2 construction as well as revegetation and monitoring of any additional temporary disturbance areas that result from construction of the Port Westward Battery Storage project (Amendment 11)~~covers the Port Westward Generating Project, including the generating plant construction site, associated pipeline construction, and the Port Westward to Trojan Transmission line.~~ The plan ~~reviews revegetation measures conducted to date,~~ specifies methods and schedule for evaluating the success of revegetation measures and implementing follow-up remedial measures (reseeding~~,~~ ~~replanting of native woody species,~~ and invasive species control) as necessary, and details revegetation success criteria and reporting requirements. ~~As required by the Site Certificate, T~~the plan is being submitted for approval by the Oregon Department of Energy (Department) as required by the Site Certificate,. ~~prior to commencement of monitoring work.~~

2.0 REVEGETATION MEASURES

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Following construction, PGE will implement~~ed~~ the revegetation measures stipulated in the Site Certificate. As appropriate at specific locations, revegetation measures include~~d~~:

- Reseeding of all soil disturbance areas to restore vegetation;
- Application of mulch and straw wattles to prevent soil erosion during vegetation re-establishment.~~;~~
- ~~Revegetation of disturbed riparian areas with appropriate plant species;~~
- ~~Planting of native woody species (according to the Typical Re-vegetation Plan, ASC, Exhibit Q, Page Q-6.1) in riparian shrub and forest habitat where canopy cover of less than 25 percent resulted from construction impacts.~~

PGE plans to use the following seed mix for revegetation of any upland disturbance areas associated with the battery storage project or for any necessary follow-up seedings of the Unit 2 revegetation areas. This seed mix may be changed with concurrence of ~~Prior to reseeding disturbance areas, PGE obtained~~ Oregon Department of Fish and Wildlife (ODFW) and the Department. ~~concurrence for the use of the following seed mixes as appropriate for each disturbance site:~~

~~Riparian Area Mix~~Upland Mix (50% grasses, 35% perennial flowers, 15% annual flowers)

California Brome - *Bromus carinatus*
California oatgrass (*Danthonia californica*)
Red fescue (*Festuca rubra*)
Streambank Lupine - *Lupinus rivularis*
California Poppy - *Eschscholzia californica*
Farewell to Spring - *Clarkia amoena*
Western Yarrow - *Achillea millefolium*
Lance Self-heal - *Prunella vulgaris v. lanceolata*
Baby Blue Eyes - *Nemophila menziesii*

~~46% Blue Wildrye~~
~~38% Native Red Fescue~~
~~12% Tufted Hairgrass~~
~~2% Western Mannagrass~~
~~2% American Sloughgrass~~

~~Riparian and/or upland mix~~
~~60% Blue Wildrye~~
~~30% Native Red Fescue~~
~~10% California Brome~~

~~40% Delaware Dwarf Perennial Ryegrass~~
~~20% Creeping Red Fescue~~
~~20% Annual Ryegrass~~
~~10% Highland Bentgrass~~
~~10% New Zealand White Clover~~

~~Pasture mix~~
~~30% Orchardgrass~~
~~30% Perennial Ryegrass~~
~~20% Bronson Tall Fescue~~
~~10% Annual Ryegrass~~
~~5% Tuuka Timothy~~
~~5% Kentucky Bluegrass~~

~~Erosion Control Mix~~

3.0 MONITORING METHODS AND SCHEDULE

~~During the 12 months following completion of construction for each project phase (i.e. transmission line and generating plant), at least two surveys will be conducted of all construction disturbance areas to evaluate the success of revegetation measures and identify any soil erosion concerns.~~ Annual surveys will be conducted for a period of five years to monitor revegetation success and invasive species control needs at ~~the plant construction site and at riparian areas disturbed during transmission line construction.~~all temporary disturbance areas impacted by project construction. The five-year monitoring period for Unit 2 disturbance areas will be completed in 2019, after which PGE will consult with ODFW and ODOE regarding success criteria (See Section 5.0).

~~3.1 Initial Monitoring Survey (January/February 2007)~~

~~Following approval of this plan by the Department, PGE will conduct an initial monitoring survey of transmission line construction disturbance areas and any soil disturbance areas at the generating plant site where construction has been completed to date.~~ All revegetation~~construction~~ areas will be visually surveyed by a qualified PGE biologist. During ~~the first~~each annual monitoring visit, the surveyor will collect the following information:

Commented [AB1]: Possibly include more diverse mix with input from seed suppliers informed by site conditions.

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Commented [AB2]: Seed mix subject to change following input from seed suppliers and approval by ODFW/ODOE.

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Commented [AB3]: Five year requirement from D.8(19) and D.8(20) included here. Remove from Site Cert.

- Confirmation that all areas requiring revegetation have been seeded;
- Success of vegetation establishment as measured by:~~,~~

~~a)~~ Percent ~~total~~ vegetative cover by species; percent bare soil; and percent other ground covers (i.e., gravel or litter) (ocular estimate using 10, randomly-located, $1m^2$ sampling quadrats in each revegetation area). Paired plots may also be used to compare sampling results to vegetation in nearby undisturbed areas;~~,~~

~~b) Percent bare soil (ocular estimate);~~

- Presence of invasive plant species (species listed as noxious under the Oregon Department of Agriculture Noxious Weed Control Program), and density estimates by species if present (in sampling quadrats and overall ocular estimated by revegetation area);
- Presence of erosion problems that require further mitigation measures.~~; and,~~
- ~~Status of native woody species plantings in riparian corridors,~~

~~a) Confirmation of adequate initial planting density,~~

~~b) Percent survival of planted native woody species.~~

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~~**3.2 Second Monitoring Survey** (May-June 2007)~~

~~All construction disturbance areas will be surveyed in spring 2007 to confirm vegetation establishment and note any areas that require further measures. Data collection will consist of the same information collected during the initial survey. This survey will also serve as the first of five annual monitoring surveys for revegetation success and invasive plant species in riparian revegetation areas (annual surveys described below).~~

~~**3.3 Third Monitoring Survey (as required)**~~

~~This monitoring survey will be conducted at all areas where less than two surveys have been conducted to date (such as generation plant areas that were not covered in the November-December 2006 surveys), and at any sites where ongoing problems exist (i.e., soil erosion problems, significant areas of bare soil where seeded vegetation failed to establish, less than 80 percent survival of planted native woody species in riparian areas). This survey will focus on ensuring that all sites have been properly stabilized and revegetated prior to the 2007-2008 rainy season.~~

~~**3.4 Annual Monitoring Surveys**~~

~~Starting in 2007, PGE will conduct annual surveys for five years. Surveys will be conducted in the spring (May/June) of each year. The purpose of the surveys will be to:~~

~~1) Monitor the success of riparian area revegetation efforts; and,~~

~~2) Monitor for the presence of invasive plant species in 1) riparian areas and wetlands along the transmission line right-of-way, and 2) in areas temporarily disturbed by construction of the~~

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~~raw water, gas, and process water discharge lines, in the temporary construction staging and laydown area northwest of the energy facility site, and in the soils disposal site.~~

~~Annual surveys will be conducted by a qualified PGE biologist, and the following information will be collected:~~

- ~~Percent survival of planted native woody species;~~
- ~~Presence of erosion problems that require further mitigation measures; and,~~
- ~~Presence of invasive plant species and density estimates by species if present.~~

4.0 FOLLOW-UP RESTORATION MEASURES

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Following each of the surveys described above, PGE will conduct follow-up measures as needed to address remaining soil impacts and revegetation requirements not achieved through initial plantings. Such follow-up measures may include:

- Reseeding of select areas where significant areas of bare soil remain after establishment of initial seeding;
- ~~Planting of additional native woody species in riparian revegetation areas where an 80 percent survival was not achieved; and,~~
- Control of invasive plant species by qualified personnel using appropriate methods for the target species (i.e. herbicides applied per label requirements if herbicides required).

5.0 REVEGETATION SUCCESS CRITERIA

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Revegetation will generally be considered successful when the revegetated areas support non-noxious plant communities that are at a minimum similar in vegetation percent cover and erosion potential comparable to surrounding undisturbed areas. When the site certificate holder determines that an area of the project has been successfully restored by satisfying all success criteria, this will be stated in the annual revegetation report. If ODFW and the Department concur, the site certificate holder will conclude that it has no further obligation to perform revegetation activities in that area of the project.

The goal for each soil disturbance site will be a minimum of 80 percent vegetation cover (of seeded vegetation and desirable, naturally-recruiting species and excluding invasive plant/noxious weed cover) and no ongoing erosion issues. Reseeding or replanting efforts will occur, in consultation with ODFW and the Department, in any area where monitoring identifies a restoration failure.

Commented [AB4]: Condition D.8(19) included here. Remove from Site Cert.

Commented [AB5]: D.8(24) included here and in last sentence of Section 6 below. Remove from Site Cert.

The following criteria will be used to determine success of revegetation efforts:

1. The vegetation percent cover by native species and desirable non-native species (i.e., non-noxious weeds, both seeded and naturally recruited) is 80 percent or more, or the native species component is not significantly less than the native species percent cover of surrounding undisturbed areas.
2. Noxious weeds are absent or constitute only a small percentage (<5%) of vegetation otherwise dominated by native or desirable non-native species.
3. The percentage of bare soil (excluding rocky areas) in the sample plot is <10%, or not

significantly greater than the percentage of bare soil in surrounding undisturbed areas.

4. Vegetation percent cover goals may be adjusted to match the typical percent cover in nearby undisturbed areas as measured with paired monitoring plots.

~~5.0~~6.0 REPORTING SCHEDULE

~~Beginning in 2007 and continuing through 2010,~~ Within one year after completion of construction of any phase of the facility PGE shall provide a summary report to ODFW and the Department that identifies the revegetation actions it took and the results of revegetation monitoring conducted to that time. PGE will submit an annual report to ODFW and the Department by December 31 of each year during the five-year monitoring period required for each revegetation area. ~~In 2011,~~ tThe final annual report will be submitted within three months of the final annual monitoring survey~~, as required in the Site Certificate~~. ~~The~~ Aannual reports will identify revegetation actions taken in construction disturbance areas at the Port Westward Generating Project, the results of vegetation monitoring, and invasive species control measures implemented to date. The final annual report will document achievement of success criteria, or, if criteria have not been met, propose additional mitigation and monitoring measures to be implemented.

Commented [AB6]: D.8(22) included here. Remove from Site Cert.

Commented [AB7]: D.8(21) included here. Remove from Site Cert.

Commented [AB8]: D.8(23) included hear. Remove from Site Cert.

7.0 AMENDMENT OF PLAN

This Plan may be amended from time to time by agreement of the certificate holder and the Oregon Energy Facility Siting Council ("Council"). Such amendments may be made without amendment of the site certificate. The Council authorizes the Department to agree to amendments to this Plan. The Department shall notify the Council of all amendments, and the Council retains the authority to approve, reject, or modify any amendment of this Plan agreed to by the Department.

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Attachment 4b. Clean Version Revegetation and Noxious Weed Control Plan

Revegetation and Noxious Weed Control Plan
Port Westward Generating Project

Submitted by:

Portland General Electric

Revision 1, April 2019

TABLE OF CONTENTS

1.0 INTRODUCTION

Portland General Electric Company (PGE) began commercial operation of Unit 1 of the Port Westward Generating Project (PGWP Unit1) in June 2007. Construction of PGWP Unit 2 began in May 2013 and the project started commercial operation on December 30, 2014. Major soil disturbance activities associated with plant site preparation and construction included rough grading, excavation, filling, stockpiling, and final grading. Following the completion of construction activity, erosion control and revegetation measures were conducted as required in the original site certificate (Unit 1) and tenth amended site certificate (Unit 2) issued by the Oregon Energy Facility Siting Council (OR-EFSC 2006, 2013) and consistent with the project Erosion and Sediment Control Plan and the original Revegetation and Invasive Species Monitoring Plan (RISMP, PGE 2006).

Revegetation and monitoring of temporary disturbance areas associated with PGWP Unit 1 was conducted in 2007 through 2011 (PGE 2011). Monitoring of PWGP Unit 2 temporary disturbance areas is in progress, with the initial five-year monitoring program to be completed in 2019 (PGE 2018).

This revised revegetation monitoring plan will apply to completion of revegetation monitoring for Unit 2 construction as well as revegetation and monitoring of any additional temporary disturbance areas that result from construction of the Port Westward Battery Storage project (Amendment 11). The plan specifies methods and schedule for evaluating the success of revegetation measures and implementing follow-up remedial measures (reseeding and invasive species control) as necessary, and details revegetation success criteria and reporting requirements. The plan is being submitted for approval by the Oregon Department of Energy (Department) as required by the Site Certificate.

2.0 REVEGETATION MEASURES

Following construction, PGE will implement the revegetation measures stipulated in the Site Certificate. As appropriate at specific locations, revegetation measures include:

- Reseeding of all soil disturbance areas to restore vegetation;
- Application of mulch and straw wattles to prevent soil erosion during vegetation re-establishment.

PGE plans to use the following seed mix for revegetation of any upland disturbance areas associated with the battery storage project or for any necessary follow-up seedings of the Unit 2 revegetation areas. This seed mix may be changed with concurrence of Oregon Department of Fish and Wildlife (ODFW) and Department concurrence.

Upland Mix (50% grasses, 35% perennial flowers, 15% annual flowers)

California Brome - *Bromus carinatus*
California oatgrass (*Danthonia californica*)
Red fescue (*Festuca rubra*)
Streambank Lupine - *Lupinus rivularis*
California Poppy - *Eschscholzia californica*
Farewell to Spring - *Clarkia amoena*
Western Yarrow - *Achillea millefolium*
Lance Self-heal - *Prunella vulgaris v. lanceolata*
Baby Blue Eyes - *Nemophila menziesii*

3.0 MONITORING METHODS AND SCHEDULE

Annual surveys will be conducted for a period of five years to monitor revegetation success and invasive species control needs at all temporary disturbance areas impacted by project construction. The five-year monitoring period for Unit 2 disturbance areas will be completed in 2019, after which PGE will consult with ODFW and ODOE regarding success criteria (See Section 5.0).

All revegetation areas will be visually surveyed by a qualified PGE biologist. During each annual monitoring visit, the surveyor will collect the following information:

- Confirmation that all areas requiring revegetation have been seeded;
- Success of vegetation establishment as measured by: percent vegetative cover by species; percent bare soil; and percent other ground covers (i.e., gravel or litter) (ocular estimates using 10, randomly-located, $1m^2$ sampling quadrats in each revegetation area). Paired plots may also be used to compare sampling results to vegetation in nearby undisturbed areas;
- Presence of invasive plant species (species listed as noxious under the Oregon Department of Agriculture Noxious Weed Control Program), and density estimates by species if present (in sampling quadrats and overall ocular estimated by revegetation area); and
- Presence of erosion problems that require further mitigation measures.

4.0 FOLLOW-UP RESTORATION MEASURES

Following each of the surveys described above, PGE will conduct follow-up measures as needed to address remaining soil impacts and revegetation requirements not achieved through initial plantings. Such follow-up measures may include:

- Reseeding of select areas where significant areas of bare soil remain after establishment of initial seeding;
- Control of invasive plant species by qualified personnel using appropriate methods for the target species (i.e. herbicides applied per label requirements if herbicides required).

5.0 REVEGETATION SUCCESS CRITERIA

Revegetation will generally be considered successful when the revegetated areas support non-noxious plant communities that are at a minimum similar in vegetation percent cover and erosion potential comparable to surrounding undisturbed areas. When the site certificate holder

determines that an area of the project has been successfully restored by satisfying all success criteria, this will be stated in the annual revegetation report. If ODFW and the Department concur, the site certificate holder will conclude that it has no further obligation to perform revegetation activities in that area of the project.

The goal for each soil disturbance site will be a minimum of 80 percent vegetation cover (of seeded vegetation and desirable, naturally-recruiting species and excluding invasive plant/noxious weed cover) and no ongoing erosion issues. Reseeding or replanting efforts will occur, in consultation with ODFW and the Department, in any area where monitoring identifies a restoration failure.

The following criteria will be used to determine success of revegetation efforts:

1. The vegetation percent cover by native species and desirable non-native species (i.e., non-noxious weeds, both seeded and naturally recruited) is 80 percent or more, or the native species component is not significantly less than the native species percent cover of surrounding undisturbed areas.
2. Noxious weeds are absent or constitute only a small percentage (<5%) of vegetation otherwise dominated by native or desirable non-native species.
3. The percentage of bare soil (excluding rocky areas) in the sample plot is <10%, or not significantly greater than the percentage of bare soil in surrounding undisturbed areas.
4. Vegetation percent cover goals may be adjusted to match the typical percent cover in nearby undisturbed areas as measured with paired monitoring plots.

6.0 REPORTING SCHEDULE

Within one year after completion of construction of any phase of the facility PGE shall provide a summary report to ODFW and the Department that identifies the revegetation actions it took and the results of revegetation monitoring conducted to that time. PGE will submit an annual report to ODFW and the Department by December 31 of each year during the five-year monitoring period required for each revegetation area. The final annual report will be submitted within three months of the final annual monitoring survey. Annual reports will identify revegetation actions taken in construction disturbance areas at the Port Westward Generating Project, the results of vegetation monitoring, and invasive species control measures implemented to date. The final annual report will document achievement of success criteria, or, if criteria have not been met, propose additional mitigation and monitoring measures to be implemented.

7.0 AMENDMENT OF PLAN

This Plan may be amended from time to time by agreement of the certificate holder and the Oregon Energy Facility Siting Council ("Council"). Such amendments may be made without amendment of the site certificate. The Council authorizes the Department to agree to amendments to this Plan. The Department shall notify the Council of all amendments, and the Council retains the authority to approve, reject, or modify any amendment of this Plan agreed to by the Department.

Attachment 5. Scenic Resources Tribal Notification

From:	Christian Nauer
To:	Mini Ogle
Cc:	Robert Brunoe
Subject:	Re: Port Westward Battery Storage project
Date:	Wednesday, March 06, 2019 4:45:56 PM
Attachments:	PastedGraphic-1.pdf
Importance:	High

Dear Mini,

Thank you for the opportunity to provide comment on the Port Westward Battery Storage Project.

General Comment:

As the technical reviewer for NHPA Section 106 and other cultural resource issues for the Confederated Tribes of the Warm Springs Reservation of Oregon (CTWSRO), the CTWSRO Tribal Historic Preservation Office (THPO) has concerns with the potential effects to historic properties or cultural resources within the Project APE. The Project APE is within the areas of concern for the CTWSRO.

Project-specific Comment(s):

In consideration of the scope of the Project (no ground disturbance), this office has no comments on the Project at this time.

If, however, I am not reading this right, and there is significant ground disturbance, this office would like to recommend additional investigations in order to cosider potential Project effects on historic properties or cultural resources. There are several precontact sites in the area and the Project APE is within a landform that has a high potential for containing sites. Please get back to me if you have questions, or would like to further qualify the Project scope of work. This office has no information at this time on traditional use areas or potential visual impacts related to the Project.

Thanks again for your consideration,

Christian Nauer, MS

Archaeologist
Confederated Tribes of the Warm Springs Reservation of Oregon
Branch of Natural Resources

christian.nauer@ctwsbnr.org

Office 541.553.2026
Cell 541.460.8448

Standard Disclaimers:

*The Confederated Tribes of the Warm Springs Reservation of Oregon have reserved treaty rights in Ceded Lands, as well as Usual and Accustomed and Aboriginal Areas, as set forth through the Treaty with the Middle Tribes of Oregon, June 25, 1855.

*Please know that review by the Tribal Historic Preservation Office does not constitute Government-to-Government consultation. Please ensure that appropriate Government-to-Government consultation is made with the Confederated Tribes of the Warm Springs Tribal Council.

> On Feb 7, 2019, at 10:29 AM, Mini Ogle <Mini.Sharma-Ogle@pgn.com> wrote:
>
> Good Morning Bobby,
>
> This is a follow-up a to a voice mail I left you last week regarding PGE's proposed battery storage system at our existing Port Westward project. Attached is a formal letter of consultation and two maps that may be relevant as you peruse this project. As always, I appreciate your time and effort in reviewing this project.
>
> Please let me know if I can provide any other information at this time.
>
> Sincerely,
>
> Mini
>
> <image001.png>Mini Sharma-Ogle
> Archaeologist- Senior Environmental Specialist
> Diversity, Equity & Inclusion Consultant
> Portland General Electric
> 121 SW Salmon Street 3WTC0403| Portland, OR 97204
>
> Office: 503-464-8657|Cell: 850-491-6333
>
> For Cultural Resources Inadvertent Discoveries please call: 503-464-BONE

<PW2_Battery_Storage_Site.pdf><PW2_Battery_Storage_Scenic.pdf><Tribal Consultation Letter_Warm Springs.docx>

Attachment 6. Port Westward Battery Energy Storage System Wetland Delineation Report

WETLAND DELINEATION / DETERMINATION REPORT COVER FORM

Fully completed and signed report cover forms and applicable fees are required before report review timelines are initiated by the Department of State Lands. Make checks payable to the Oregon Department of State Lands. To pay fees by credit card, go online at: https://apps.oregon.gov/DSL/EPS/program?key=4.

Attach this completed and signed form to the front of an unbound report or include a hard copy with a digital version (single PDF file of the report cover form and report, minimum 300 dpi resolution) and submit to: **Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279.** A single PDF of the completed cover from and report may be e-mailed to: **Wetland_Delineation@dsl.state.or.us**. For submittal of PDF files larger than 10 MB, e-mail DSL instructions on how to access the file from your ftp or other file sharing website.

Contact and Authorization Information

☐ Applicant ☒ Owner Name, Firm and Address:
Port of Columbia County
Attn: Sean Clark
PO Box 190
Columbia City, OR 97018

Business phone # (503) 410-5915
Mobile phone # (optional)
E-mail:

☒ Authorized Legal Agent, Name and Address (if different):
Colin MacLaren, PWS, Wetland Ecologist
Portland General Electric - environmental Services
121 SW Salmon St., 3WTC0403
Portland, OR 97204

Business phone # (503) 464-8061
Mobile phone # (optional) (503) 407-1923
E-mail: colin.maclaren@pgn.com

I either own the property described below or I have legal authority to allow access to the property. I authorize the Department to access the property for the purpose of confirming the information in the report, after prior notification to the primary contact.

Typed/Printed Name: Colin MacLaren **Signature:** Colin MacLaren

Date: 03/19/2019 Special instructions regarding site access: Secured area. Contact PGE for access

Project and Site Information

Project Name: Port Westward Battery Energy Storage System

Latitude: 46.1708 Longitude: -123.1690
decimal degree - centroid of site or start & end points of linear project

Proposed Use:
Battery energy storage facility

Tax Map # 8041500
Tax Lot(s) 500

Tax Map #
Tax Lot(s)

Project Street Address (or other descriptive location):
81566 Kalluniki Road. North end of Kallunki Road at Port Westward generation facility, northeast of Clatskanie, OR

Township T8N Range R4W Section 22 QQ

Use separate sheet for additional tax and location information

City: n/a County: Columbia

Waterway: n/a River Mile:

Wetland Delineation Information

Wetland Consultant Name, Firm and Address:

Phone #
Mobile phone # (if applicable)
E-mail:

The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge.

Consultant Signature: Date: 03/18/2019

Primary Contact for report review and site access is ☐ Consultant ☐ Applicant/Owner ☒ Authorized Agent

Wetland/Waters Present? ☒ Yes ☐ No Study Area size: Total Wetland Acreage:

Check Applicable Boxes Below

☐ R-F permit application submitted
☐ Mitigation bank site
☐ Industrial Land Certification Program Site
☐ Wetland restoration/enhancement project (not mitigation)
☐ Previous delineation/application on parcel
If known, previous DSL # _____

☒ Fee payment submitted $ _____
☐ Fee ($100) for resubmittal of rejected report
☐ Request for Reissuance. See eligibility criteria. (no fee)
DSL # _____ Expiration date _____
☐ LWI shows wetlands or waters on parcel
Wetland ID code _____

For Office Use Only

DSL Reviewer: _____ Fee Paid Date: ___/___/___ DSL WD # _____

Date Delineation Received: ___/___/___ Scanned: ☐ Electronic: ☐ DSL App.# _____

PORT WESTWARD BATTERY ENERGY STORAGE SYSTEM
WETLAND DELINEATION REPORT

PORT WESTWARD PROJECT
Columbia County, OR
Township 8 North, Range 4 West, Section 22
Tax Map 8041500, Lot 500

Prepared by

Portland General Electric Company
Environmental & Licensing Services
121 SW Salmon St.
Portland, Oregon 97204

March 2019

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1.0 INTRODUCTION

Portland General Electric Company (PGE) is proposing to construct a battery energy storage system at its Port Westward Generating Plant located at 81566 Kalluniki Road in Columbia County, Oregon (Figure 1). The land is owned by the Port of Columbia County (formerly Port of St. Helens). PGE holds a long-term lease to the property.

The Port Westward is a natural gas plant. Unit 1 began power generating operations in 2007 and Unit 2 was constructed at the same location and became operational in late 2014. PGE is now proposing to add a battery energy storage system (BESS) to the facility to improve service and create efficiency and load flexibility.

The proposed battery system is to be located adjacent to the existing plant (Figure 1). Construction for the battery system may involve foundation work that may generate fill material composed of historic dredge spoils. This area is identified as Study Area A. Study Area A is approximately 0.25 acres in area. The fill is proposed to be placed in an upland spoils area that was also used during construction of the Port Westward facility in 2006 (Figure 1; Study Area B). Study Area B is approximately 10.1 acres in area.

2.0 LANDSCAPE AND LAND USE SETTING

The project area is located in the lower Columbia River system. A study to identify possible historical habitats using early (c. 1878) U.S. Coast Survey Charts among other sources identified the study area as having most likely supported low tidal marsh habitat (CREST 1995). The current landscape and land use is reclaimed industrial land, located over dredge spoils, and farmland in lower lying areas. The principal farm crop within the study area appears to be hay.

3.0 SITE ALTERATIONS

Historically, the study area has undergone alterations that have significantly modified natural conditions. As noted above, historic conditions likely supported tidally-influenced lowland marsh. Over several years, dredge spoils, diking and draining, and farming have obscured any evidence of lowland marsh habitat. The BESS will be located on historic dredge spoils. The spoils disposal area also is located over historic dredge spoils as well as fill material generated during development of Port Westward Units 1 and 2. Areas that appear less affected by fill placement are actively farmed.

4.0 PRECIPITATION DATA AND ANALYSIS

The wetlands climate analysis (WETS) station used to obtain historic precipitation data for the project site was the Clatskanie main station. The WETS table shows that the area receives 55.62 inches of rain annually. The growing season at this location is 264 days extending from March 1 to November 20.

Recent precipitation data obtained from the NOAA Regional Climate Center's Applied Climate Information System AgACIS web site for Columbia County is shown in Table 1. In the three months prior to fieldwork, recorded precipitation was below normal for two of the three months.

Table 1. Precipitation Data – Monthly Averages Based on the Climate Period 1971 to 2000

Month	Average (Inches)	30% Chance Will Have (inches)		Observed Precipitation (Inches)	Within Normal Range?
		Less Than	More Than		
November	9.00	5.92	10.59	5.17	Below Normal (57%)
December	9.12	6.35	10.83	8.43	Normal (92%)
January	8.84	5.13	10.00	4.70	Below normal (53%)

Source: NOAA 2019

Rainfall data for the water year through January was 22.71 inches, which is 7.61 inches below average rainfall (i.e., 75 percent of average) for that period. In the two weeks prior to fieldwork, 4.87 inches of rain and 2.0 inches of snowfall were recorded. Overall, conditions were drier than normal in the months prior to fieldwork and relatively normal in the days and weeks preceding fieldwork.

5.0 METHODS

The methodology used to determine the presence/absence and location of wetlands followed the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coastal Region (Version 2.0)* (USACE 2010), used by both USACE and the Oregon Department of State Lands (DSL). Fieldwork for documenting site conditions and delineating the wetland boundary was conducted February 22, 2019 by Colin MacLaren, PWS. Soils were documented at 6 sample plot locations on standardized wetland determination data sheets (Appendix B). Sample plot locations and wetland boundaries were documented using a hand-held Trimble Geo7X GPS device capable of sub-meter accuracy. Sample plot locations and boundaries can be relocated in the field if requested by agency staff. Representative ground-level photographs were collected at each sample plot location, and are shown in Appendix C.

Two soils were mapped within the study area:

- Udipsamments, nearly level, protected
- Crims silt loam, protected

The Udipsamments map unit comprises approximately 90 percent of the overall study area, with the Crims map unit occurring in the southernmost portion of the site. (NRCS 2019). Udipsamment soils consist of sand dunes and sandy areas that have been stabilized by vegetation. Permeability is very rapid and available water capacity is low.

Crims soils are described as deep, very poorly drained soils that formed in organic materials underlain by silty alluvium at 16 to 40 inches. Crims soils are on flood plains.

Fieldwork for this wetland study was conducted seven days before the start of the growing season. It is our judgment, however, that conditions during fieldwork were a good representation of conditions expected to be encountered during the growing season. This judgment is based on the presence of emerged and developing herbaceous plants, flowering herbaceous plants (e.g. *Cardamine oligosperma* – an early spring taxon), and bud burst observed in nearby deciduous trees (i.e. *Populus balsamifera* var. *trichocarpa*).

The southeastern portion of Study Area B is actively farmed. That area, however, appears to be in hay production and does not show evidence of recent plowing, tilling, ripping, or other soils disturbance. It also appears that grass species within the farmed area are not actively managed other than seasonal cutting and collection for hay or straw. Because of lack of evidence for soil disturbance and because plant populations appear to have adjusted to existing conditions, it was determined that standard delineation methods would apply.

6.0 DESCRIPTION OF ALL WETLANDS AND NON-WETLAND WATERS

Wetland (3.09 acres; extends beyond study area boundary)

One wetland was identified within the study area. This feature is located along the low-lying, southern margin of the study site. Vegetation within this feature is predominantly reed canarygrass (*Phalaris arundinacea*) with scattered soft rush (*Juncus effusus*), perennial ryegrass (*Lolium perenne*), and American speedwell (*Veronica americana*). Transitional areas include reed canarygrass, orchardgrass (*Dactylis glomerata*), and Himalayan blackberry (*Rubus armeniacus*). Elevated, upland areas mostly support orchardgrass, hairy-cat's ears (*Hypochaeris radicata*), perennial ryegrass, and lanceleaf plantain (*Plantago lanceolata*).

Soils in wet areas were found to be dark grayish brown sandy loam with distinct redoximorphic features (mottles). Upland soils tended to be dark brown or very dark brown sandy loam and gravelly sandy loam both with and without mottling. Evidence of wetland hydrology included a shallow water table, saturation, drift lines, algal mats, and stressed vegetation. Non-wetland areas lacked wet soils and, in Study Area B, supported burrowing mammal activity.

No wetlands were identified in Study Area A. In Study Area B, wetlands are found along the southeastern portion of the study area. The line between wetland and upland is distinct in the western portion of this area based on relatively pronounced elevational differences but becomes less distinct to the east as the land surface flattens and levels.

The line between wetland and non-wetland was determined based on topography, vegetative growth patterns, drift line locations. The boundary was also based on the limits of mammal burrowing activity, which appeared to correlate strongly with elevation and observed hydrology. and Wetlands extend outside the study area boundary to the south.

There are no non-wetland waters within the study area.

7.0 DEVIATION FROM NWI MAPPING

The National Wetland Inventory mapping for the site shows the footprint of the wetland extending farther north than was documented in the field.

8.0 MAPPING METHOD

Wetland boundaries and sample plot locations were collected with a Trimble Geo7X handheld GPS unit. Map accuracy is within 1m. GPS data points were transferred to maps (Figures 5a and 5b) using ArcGIS software.

9.0 ADDITIONAL INFORMATION

The study area is located behind flood protection levees.

10.0 RESULTS AND CONCLUSIONS

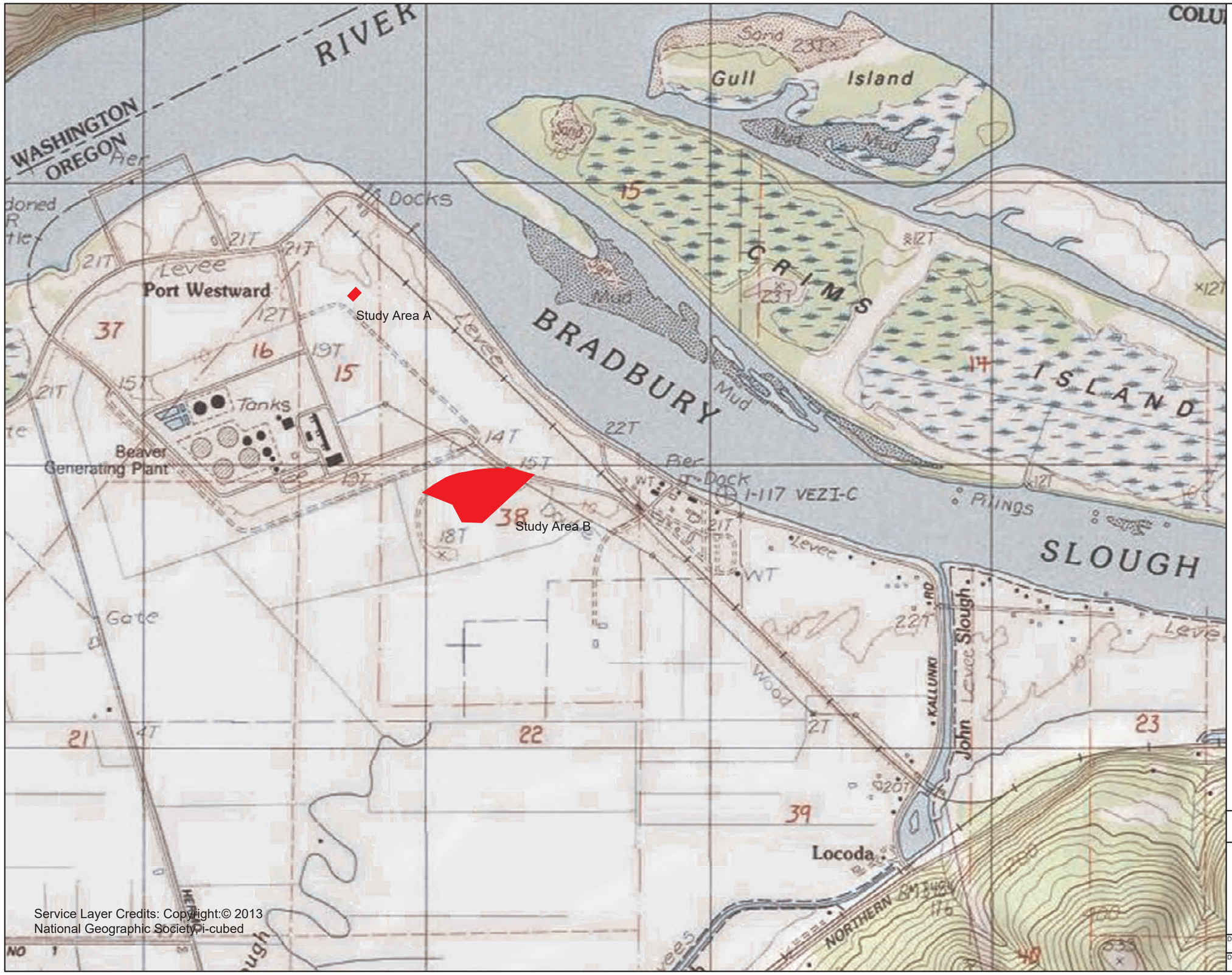
No wetlands were identified in Study Area A. A palustrine emergent 3.09-acre wetland was identified in Study Area B (Figure 6). This wetland feature extends southeast beyond the study area boundary.

11.0 REQUIRED DISCLAIMER

This report documents field and office investigations, best professional judgment, and conclusions of the investigator. It is accurate and complete to the best of my knowledge. Results and conclusions should be considered preliminary unless and until they have been reviewed and approved in writing by the Oregon Department of State Lands (DSL) in accordance with the Oregon Administrative Rules in place when the study was completed.

12.0 LIST OF PREPARERS

Colin MacLaren, PWS, CERP
Wetland Ecologist



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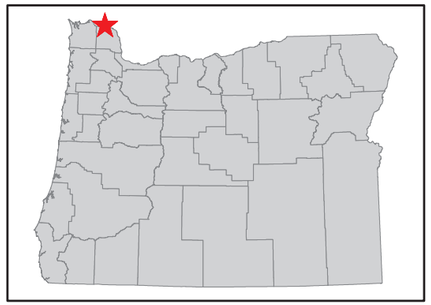


Map Extent

Map Features

Study Area Boundary

0 200 400

Meters

N W E S

Portland General Electric

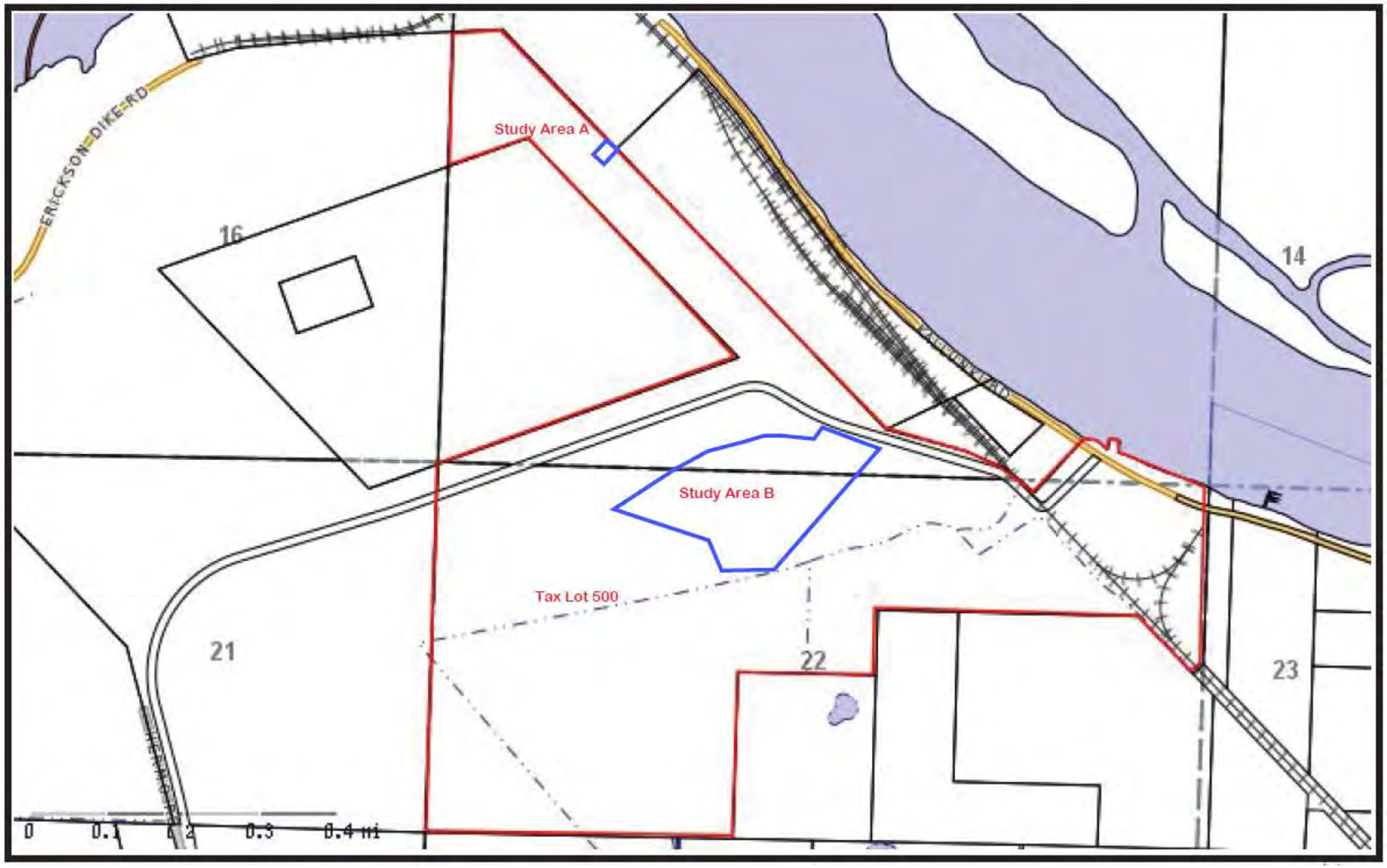
Portland, Oregon

Figure 1. Wetland Study Location

Battery Storage Facility

Date:	Drawn By:	Rev.:
3/15/2019	Brad Wymore	

Drawing File: V:\ES\Wetlands\Wetland_gdb\Maps\MXD\2019\Wetland_project_battery_storage_facility_locator_031519.mxd



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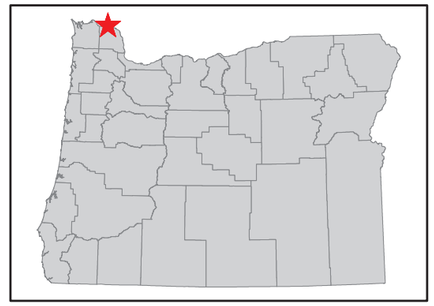


Map Extent

Map Features

Study Area Boundary

0 100 200
Meters

All points collected were accurate < 1 meter and any final correction were done by using control points recorded in the field. Then georeferencing was performed based on aerial photography.

Portland General Electric
Portland, Oregon

Figure 2. Columbia County Tax Map 8041500
Battery Storage Facility

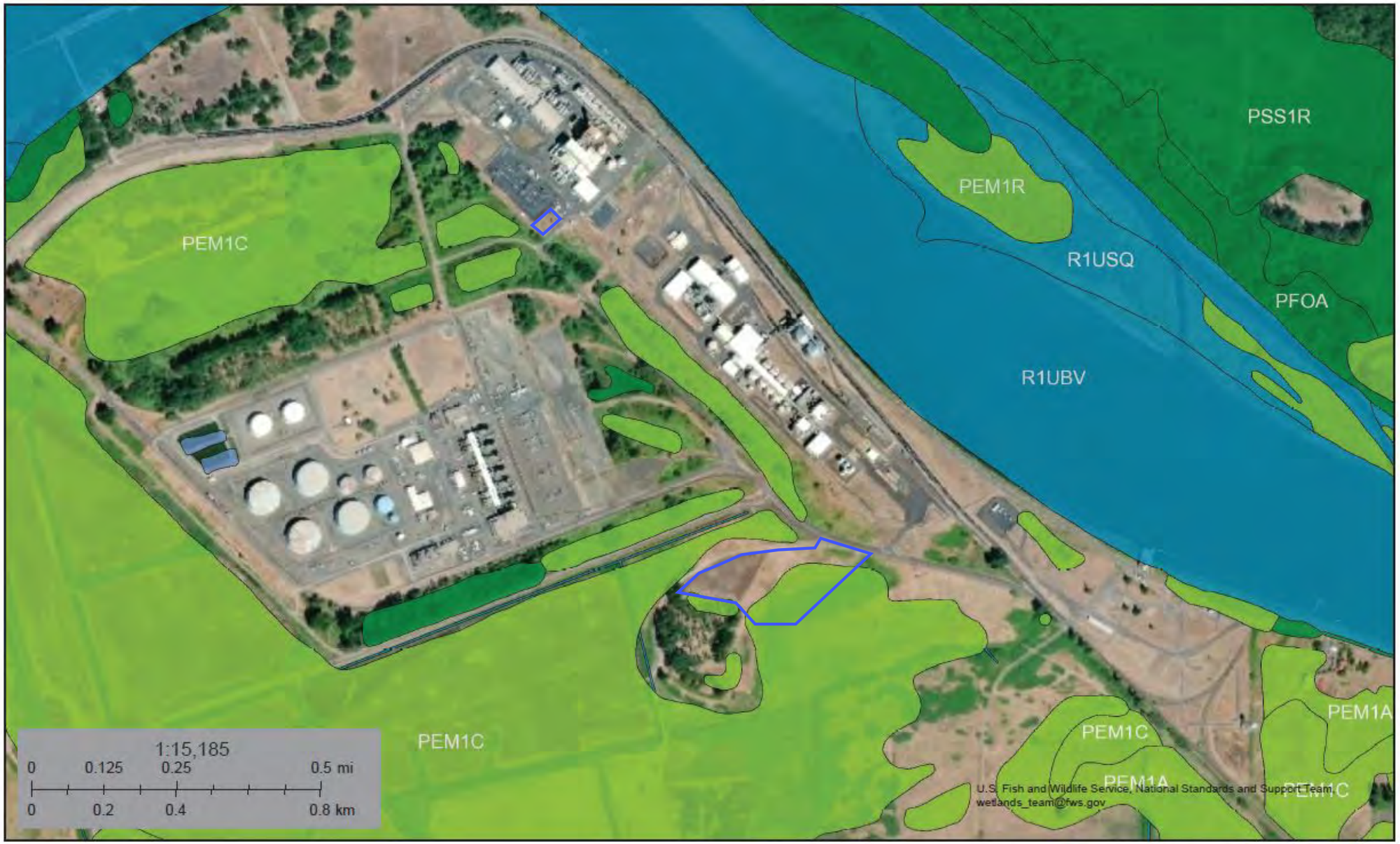
Date:	Drawn By:	Rev.:
3/15/2019	Brad Wymore	

Drawing File: V:\ES\Wetlands\Wetland_gdb\Maps\MXD\2019\Wetland_project_battery_storage_facility_figure5a_031519.mxd

U.S. Fish and Wildlife Service

National Wetlands Inventory

Port Westward - Battery Storage



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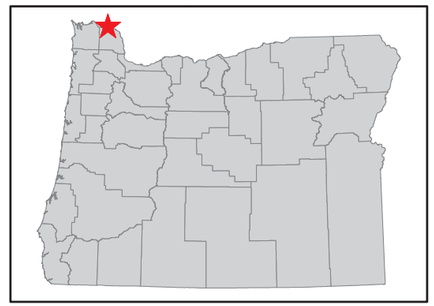

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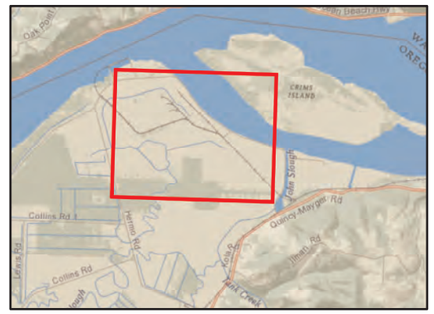


Map Features

Study Area Boundary

0 100 200
Meters

All points collected were accurate < 1 meter and any final correction were done by using control points recorded in the field. Then georeferencing was performed based on aerial photography.

Portland General Electric
Portland, Oregon

Figure 3. NWI Map

Battery Storage Facility

Date:	Drawn By:	Rev.:
3/15/2019	Brad Wymore	

Drawing File: V:\ES\Wetlands\Wetland_gdb\Maps\MXD\2019\Wetland_project_battery_storage_facility_figure5a_031519.mxd

February 27, 2019

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

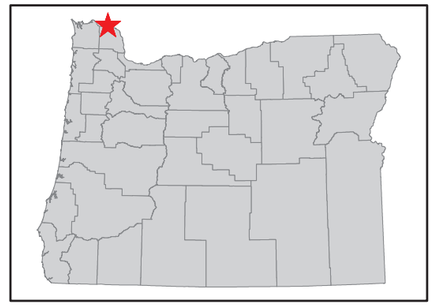
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
15	Crims silt loam, protected	18.2	4.8%
61	Udipsamments, nearly level, protected	298.0	78.4%
W	Water	63.8	16.8%
Totals for Area of Interest		**380.0**	**100.0%**

SampleLocation



Map Extent

Map Features

Study Area Boundary

0 100 200

Meters

All points collected were accurate < 1 meter and any final correction were done by using control points recorded in the field. Then georeferencing was performed based on aerial photography.

Portland General Electric

Portland, Oregon

Figure 4. Soils Map

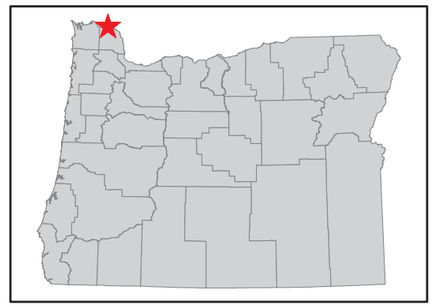
Battery Storage Facility

Date:	Drawn By:	Rev.:
3/15/2019	Brad Wymore	

Drawing File: V:\ES\Wetlands\Wetland_gdb\Maps\MXD\2019\Wetland_project_battery_storage_facility_figure5a_031519.mxd

Wetlands extend beyond the study area boundary.

SampleLocation



Map Extent

Map Features

- Sample Points
- Wetland Boundary
- Study Area Boundary

0 12.5 25

Meters

All points collected were accurate < 1 meter and any final correction were done by using control points recorded in the field. Then georeferencing was performed based on aerial photography.

Portland General Electric

Portland, Oregon

Figure 5a
Wetland Delineation

Battery Storage Facility

Date:	Drawn By:	Rev.:
3/15/2019	Brad Wymore	

Drawing File:
V:\ES\Wetlands\Wetland_gdb\Maps\MXD\2019\Wetland_project_battery_storage_facility_figure5a_031519.mxd

Wetlands extend beyond the study area boundary.

Existing Spoils Pile

sp02

Non-wetland

sp05

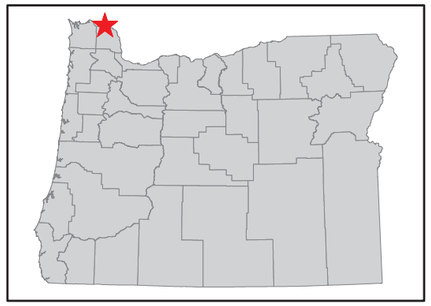
sp06

sp03

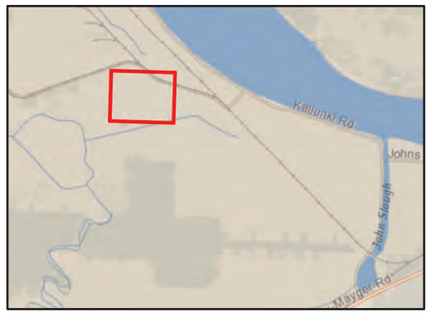
Wetland

sp04

SampleLocation



Map Extent



Map Features

- Sample Points
- Wetland Boundary
- Study Area Boundary
- Approved Soil Disposal Site

0 20 40

Meters

All points collected were accurate < 1 meter and any final correction were done by using control points recorded in the field. Then georeferencing was performed based on aerial photography.

Portland General Electric

Portland, Oregon

Figure 5b
Wetland Delineation

Battery Storage Facility

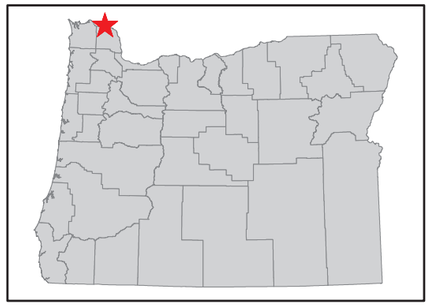
Date:	Drawn By:	Rev.:
3/15/2019	Brad Wymore	

Drawing File: V:\ES\Wetlands\Wetland_gdb\Maps\MXD\2019\Wetland_project_battery_storage_facility_figure5a_031519.mxd

Wetlands extend beyond the study area boundary.

Service Layer Credits: Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

SampleLocation



Map Extent

Map Features

- Sample Points
- Wetland Boundary
- Study Area Boundary

0 100 200
Meters

All points collected were accurate < 1 meter and any final correction were done by using control points recorded in the field. Then georeferencing was performed based on aerial photography.

Portland General Electric
Portland, Oregon

Figure 6
Wetland Delineation

Battery Storage Facility

Date:	Drawn By:	Rev.:
3/15/2019	Brad Wymore	

Drawing File: V:\ES\Wetlands\Wetland_gdb\Maps\MXD\2019\Wetland_project_battery_storage_facility_figure5a_031519.mxd

APPENDIX A: AERIAL PHOTOGRAPHS


July 2018
Port Westward Battery Energy Storage System
Legend
Columbia Pacific Bio Refinery
Kallunki Rd
N
1000 ft
Google earth


June 2017
Port Westward Battery Energy Storage System
Legend
Columbia Pacific Bio Refinery
Kallunki Rd
N
1000 ft
Google earth


July 2014
Port Westward Battery Energy Storage System
Legend
Columbia Pacific Bio Refinery
Kallunki Rd
N
1000 ft
Google earth


July 2012
Port Westward Battery Energy Storage System
Legend
Columbia Pacific Bio Refinery
Kallunki Rd
Google earth
N
1000 ft


November 2011
Port Westward Battery Energy Storage System
Legend
Columbia Pacific Bio Refinery
Kallunki Rd
Google earth
Image USDA Farm Service Agency
N
1000 ft


September 2009
Port Westward Battery Energy Storage System
Legend
Columbia Pacific Bio Refinery
Kallunki Rd
Google earth
Image USDA Farm Service Agency
N
1000 ft


August 2006
Port Westward Battery Energy Storage System
Legend
Columbia Pacific Bio Refinery
Kallunki Rd
N
1000 ft
Google earth
Image USDA Farm Service Agency


July 2005
Port Westward Battery Energy Storage System
Legend
Columbia Pacific Bio Refinery
Kallunki Rd
Google earth
Image USDA Farm Service Agency
N
1000 ft

APPENDIX B: DATA SHEETS

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Port Westward – Battery Site City/County: Columbia Sampling Date: 2/22/19
Applicant/Owner: Portland General Electric State: OR Sampling Point: SP-01
Investigator(s): C. MacLaren Section, Township, Range: Sec 22, T8N, R4W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Flat Slope (%): 0
Subregion (LRR): A – NW Forests & Coast Lat: 46.1708 Long: -123.1690 Datum:
Soil Map Unit Name: Udipsamments, nearly level NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No X	**Is the Sampled Area within a Wetland?**	**Yes ___ No X**
Hydric Soil Present?	Yes ___	No X		
Wetland Hydrology Present?	Yes ___	No X		

Remarks: Rainfall is below average for the 3 months preceding fieldwork. Sample plot located along lowest (SW edge) of proposed battery storage site

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10')			
1. *Dactylis glomerata*	25	Y	FACU
2. *Schedonorus arundinaceus*	20	Y	FAC
3. *Hypochaeris radicata*	15	Y	FACU
4. *Trifolium repens*	10	N	FAC
5. *Geranium* sp.	10	N	-
6. *Achillea millefolium*	10	N	FACU
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks:

SOIL

Sampling Point: SP-01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/3	100					Sandy loam	gravels
8-15+	10YR 3/2	100					Sandy loam	gravels

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks: Coarse angular gravels throughout – appears to be historic fill associated with facility development

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: no evidence noted.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Port Westward – Battery Site City/County: Columbia Sampling Date: 2/22/19
Applicant/Owner: Portland General Electric State: OR Sampling Point: SP-02
Investigator(s): C. MacLaren Section, Township, Range: Sec 22, T8N, R4W
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): flat Slope (%): 0%
Subregion (LRR): A – NW Forests & Coast Lat: 46.1708 Long: -123.1690 Datum:
Soil Map Unit Name: Udipsamments, nearly level NWI classification: PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No X	**Is the Sampled Area within a Wetland?**	**Yes ___ No X**
Hydric Soil Present?	Yes ___	No X		
Wetland Hydrology Present?	Yes ___	No X		

Remarks: Rainfall is below average for the 3 months preceding fieldwork. Plot is paired with SP-04. Strong vegetation community and topographic break between SP-03 and SP-04. Plot is on terrace at base of large berm to S. and N. of low-lying, concave feature.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. Cytisus scoparius	5	Y	UPL
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10')			
1. Dactylis glomerata	40	Y	FACU
2. Lolium perenne	30	Y	FAC
3. Agrostis sp.	10	N	-
4. Hypochaeris radicata	2	N	FACU
5. Cardamine oligosperma	2	N	FAC
6. Plantago lanceolata	Tr	N	FACU
7.			
8.			
9.			
10.			
11.			
	~80 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ~15

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: Mixed grasses and weedy species.

SOIL

Sampling Point: SP-02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/3	100					Sandy loam	Angular gravels
6-9	10YR 2/1	100					Sandy loam	Charcoal pieces
9-16+	10YR 3/3	100					Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks: Top 6 inches included many angular gravels. Below 6 inches is a 3-inch layer of dark soils containing numerous charcoal pieces

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Soils slightly moist in upper 12 inches, dry below

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Port Westward – Battery Site City/County: Columbia Sampling Date: 2/22/19
Applicant/Owner: Portland General Electric State: OR Sampling Point: SP-03
Investigator(s): C. MacLaren Section, Township, Range: Sec 22, T8N, R4W
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): flat Slope (%): 0%
Subregion (LRR): A – NW Forests & Coast Lat: 46.1708 Long: -123.1690 Datum:
Soil Map Unit Name: Udipsamments, nearly level NWI classification: PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No X	**Is the Sampled Area within a Wetland?**	**Yes ___ No X**
Hydric Soil Present?	Yes ___	No X		
Wetland Hydrology Present?	Yes ___	No X		

Remarks: Rainfall is below average for the 3 months preceding fieldwork. Plot is paired with SP-04. Strong vegetation community and topographic break between SP-03 and SP-04. Plot is on terrace at base of large berm to S. and N. of low-lying, concave feature.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10')			
1. Agrostis sp. (poss. A. capillaris)	50	Y	(FAC)
2. Dactylis glomerata	20	Y	FACU
3. Schedonorus arundinaceus	10	N	FAC
4. Tanacetum vulgare	5	N	FACU
5. Achillea millefolium	3	N	FACU
6. Hypochaeris radicata	3	N	FACU
7. Daucus carota	1	N	FACU
8. Plantago lanceolata	tr	N	FACU
9. Cruciferae sp.	Tr	N	-
10.			
11.			
	~90 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: Mixed grasses and weedy species.

SOIL

Sampling Point: SP-03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/3	100					Sandy loam	
5-20+	2.5Y 4/2	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Soils slightly moist in upper 12 inches, dry below

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Port Westward – Battery Site City/County: Columbia Sampling Date: 2/22/19
Applicant/Owner: Portland General Electric State: OR Sampling Point: SP-04
Investigator(s): C. MacLaren Section, Township, Range: Sec 22, T8N, R4W
Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): convex Slope (%): <2%
Subregion (LRR): A – NW Forests & Coast Lat: 46.1708 Long: -123.1690 Datum:
Soil Map Unit Name: Crims silt loam, protected NWI classification: PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ___
Hydric Soil Present? Yes X No ___
Wetland Hydrology Present? Yes X No ___

Is the Sampled Area within a Wetland? Yes X No ___

Remarks: Rainfall is below average for the 3 months preceding fieldwork. Plot is paired with SP-03. Strong vegetation community and topographic break between SP-03 and SP-04.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 10')			
1. Phalaris arundinacea	90	Y	FACW
2. Juncus effusus	5	N	FACW
3. Poa sp. (poss. P. palustris)	5	N	-
4. Veronica americana	5	N	OBL
5. Ranunculus sp. (poss. R. repens)	2	N	-
6. Alopecurus pratensis	1	N	FACW
7.			
8.			
9.			
10.			
11.			
	108 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___	x 1 =	___
FACW species	___	x 2 =	___
FAC species	___	x 3 =	___
FACU species	___	x 4 =	___
UPL species	___	x 5 =	___
Column Totals:	___ (A)		___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: Area appears to be farmed for hay/straw. Woody species are absent and cutting, raking, and baling equipment are staged nearby. Ground is relatively flat.

SOIL

Sampling Point: SP-04

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR 4/2	95	7.5YR 4/4-5/4	5	C	M	Sandy loam	Coarse redox
11-18+	10YR 4/2	90	7.5YR 4/4-5/4	10	C	M	Sandy loam	Med/coarse redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks: coarse sands in upper 11 inches of sandy loam matrix giving way to finer sandy loam below 11 inches

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): 10”

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 4”

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Strong evidence of persistently wet conditions in a broad, shallowly concave feature. Evidence of burrowing mammals absent from this area – several burrows, mole hills located upslope to the north.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Port Westward – Battery Site City/County: Columbia Sampling Date: 2/22/19
Applicant/Owner: Portland General Electric State: OR Sampling Point: SP-05
Investigator(s): C. MacLaren Section, Township, Range: Sec 22, T8N, R4W
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): flat Slope (%): 1% to flat
Subregion (LRR): A – NW Forests & Coast Lat: 46.1708 Long: -123.1690 Datum:
Soil Map Unit Name: Udipsamments, nearly level NWI classification: PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** ___ **No** X

Remarks: Rainfall is below average for the 3 months preceding fieldwork. Plot is paired with SP-06. Less defined vegetation community and topographic break between SP-05 and SP-06 (compared to SP-03 and -04). Burrowing mammal activity to northwest (higher elevation) and lines of drift deposition to southeast (lower elevation). Sample plot appears to be in upper portion of transition zone. Upland call based on soils and hydrology.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10')			
1. Phalaris arundinacea	30	Y	FACW
2. Dactylis glomerata	20	Y	FACU
3. Lolium perenne	20	Y	FAC
4. Alopecurus pratensis	10	N	FACW
5. Hypochaeris radicata	5	N	FACU
6. Rumex acetosella	1	N	FACU
7. Geranium sp.	2	N	-
8.			
9.			
10.			
11.			
	~90 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks:. Lolium is a common hay crop grass and may introduced in this location.

SOIL

Sampling Point: SP-05

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-5	10YR 3/3	100					Sandy loam	
5-15	10YR 3/3	98	5YR 4/4	2	C	M	Sandy loam	Fine/med redox
15-20+	10YR 3/2	95	7.5YR 4/4	5	C	M	Sandy loam	Med/coarse redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:. Drift lines to southeast, and burrowing animal activity northwest of this sample plot. Soils moist only.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Port Westward – Battery Site City/County: Columbia Sampling Date: 2/22/19
Applicant/Owner: Portland General Electric State: OR Sampling Point: SP-06
Investigator(s): C. MacLaren Section, Township, Range: Sec 22, T8N, R4W
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): flat Slope (%): 0%
Subregion (LRR): A – NW Forests & Coast Lat: 46.1708 Long: -123.1690 Datum:
Soil Map Unit Name: Crims silt loam, protected NWI classification: PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ___
Hydric Soil Present? Yes X No ___
Wetland Hydrology Present? Yes X No ___

Is the Sampled Area within a Wetland? Yes X No ___

Remarks: Rainfall is below average for the 3 months preceding fieldwork. Plot is paired with SP-05.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 10')			
1. Phalaris arundinacea	90	Y	FACW
2. Alopecurus pratensis	5	N	FACW
3. Geranium sp.	Tr	N	-
4. Cardamine oligosperma	Tr	N	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	~95 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___	x 1 =	___
FACW species	___	x 2 =	___
FAC species	___	x 3 =	___
FACU species	___	x 4 =	___
UPL species	___	x 5 =	___
Column Totals:	___ (A)		___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: Similar to conditions at SP-03

SOIL

Sampling Point: SP-06

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-4	10YR 3/3	98	10YR 4/4	2	C	M	Sandy loam	Fine redox
4-7	10YR 4/2	95	7.5YR 4/4	5	C	M	Sandy loam	Fine-med redox
7-18	10YR 4/2	90	7.5YR 4/4, 4/6	10	C	M	Sand	Coarse redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- x Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- x Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	___	No	X	Depth (inches):	___
Water Table Present?	Yes	X	No	___	Depth (inches):	17”
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches):	7”

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hummocky area. Drift lines to south and north (topographically below and above, respectively). Multiple burrows to north of sample plot.

APPENDIX C: GROUND LEVEL COLOR PHOTOGRAPHS

Photo 1. Sample Plot SP-01 looking south at Study Area A. February 2019.

Photo 2. Closeup of Sample Plot SP-01

Photo 3. Sample Plot SP-02 in Study Area B. Photo facing west-northwest

Photo 4. Closeup of SP-02

Photo 5. Sample plot SP-03. Photo taken facing south towards farmed, lowland area.

Photo 6. Sample plot SP-04, located in low, convex feature. Photo facing south.

Photo 7. Closeup of SP-04.

Photo 8. Sample plot SP-05.

Photo 9. Closeup of SP-05.

Photo 10. Sample plot SP-06. Photo facing north. Note increase in burrowing activity in background.

Photo 11. Closeup of Sample Plot SP-06

APPENDIX D: CLIMATE DATA

Rainfall for the Preceding 3-Month Period (Antecedent Rainfall) **WETS Station: Clatskanie, 1971-2000** **Measured Rainfall: CLATSKANIE, 2018-2019 Water Year**								
Prior Months Most Recent Last		WETS Rainfall Percentile 30th inches	 70th	Measured Rainfall inches	Condition Drier, Wetter, Normal	Conditions Value 1=dry, 2=normal, 3=wet	Month Weight	Multiply Previous Two Columns
1st	November	5.92	10.59	5.17	Drier	1	1	1
2nd	December	6.35	10.83	8.43	Normal	2	2	4
3rd	January	5.13	10.00	4.7	Drier	1	3	3
		Precipitation conditions in the prior period were:			Drier than normal (sum 6-9) Normal (sum 10-14) Wetter than normal (sum 15-18)		**Sum:**	**8**
							Drier than Normal	

APPENDIX E: LITERATURE CITED AND REVIEWED

Columbia River Estuary Study Taskforce. 1995. *Historic Habitats of the Lower Columbia River.* Unpublished white paper. 16 p.

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Attachment 7. Redline Site Certificate

~~TENTH~~ ELEVENTH AMENDED

SITE CERTIFICATE

FOR THE

PORT WESTWARD GENERATING PROJECT

Issued By

OREGON ENERGY FACILITY SITING COUNCIL
625 MARION STREET NE
SALEM OR 97301-3737

PHONE: 503-378-4040
FAX: 503-373-7806

~~August~~ Month xx, ~~2013~~2019

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SITE CERTIFICATE
FOR THE
PORT WESTWARD GENERATING PROJECT

A. INTRODUCTION

This site certificate for the Port Westward Generating Project ("PWGP or Project") 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 ("Council"), and the Portland General Electric Company ("PGE" or "Certificate Holder").

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, which by this reference are incorporated herein: (a) the Council's Final Order in the Matter of the Application for a Site Certificate for the Port Westward Generating Project, which the Council granted on November 8, 2002; (b) the Council's Final Order in the Matter of the Site Certificate for the Port Westward Generating Project Request for Amendment No. One, which the Council granted on December 5, 2003; (c) the Council's Final Order in the Matter of the Site Certificate for the Port Westward Generating Project Request for Amendment No. Two, which the Council granted on September 24, 2004; (d) the Council's Final Order in the Matter of the Site Certificate for the Port Westward Generating Project Request for Amendment No. Three, which the Council granted on January 28, 2005; and (e) the Council's Final Order in the Matter of the Fourth Request to Amend the Site Certificate for the Port Westward Generating Project, which the Council granted on May 19, 2006; (f) the Council's Final Order in the Matter of the Fifth Request to Amend the Site Certificate for the Port Westward Generating Project, which the Council granted on September 29, 2006, (g) the Council's Final Order in the Matter of the Sixth Request to Amend the Site Certificate for the Port Westward Generating Project, which the Council granted on March 27,2009 (h) the Council's Final Order in the Matter of the Seventh Request to Amend the Site Certificate for the Port Westward Generating Project, which the Council granted on March 12, 2010; (i) the Council's Final Order in the Matter of the Eighth Request to Amend the Site Certificate for the Port Westward Generating Project, which the Council granted on August 19, 2011; (j) the Council's Final Order in the Matter of the Ninth Request to Amend the Site Certificate for the Port Westward Generating Project, which the Council granted on March 15, 2013; and (k) the Council's Final Order in the Matter of the Tenth Request to Amend the Site Certificate, which the Council granted on August ~~xx~~23, 2013. (l) the Council's Final Order in the Matter of the Eleventh Request to Amend the Site Certificate for the Port Westward Generating Project, which the Council granted on Month xx, 2019. [Amendments No. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 & ~~10~~11]. Collectively, we refer to the Final Orders listed in (a) through (~~k~~l) as "the Orders".

In interpreting this site certificate, any ambiguity shall be clarified by reference to, and in the following priority: this Site Certificate, the record of the proceedings that led to the Orders, and

the Application for a Site Certificate for the Port Westward Generating Project. As used in this Site Certificate, the "application for site certificate" or the "ASC" includes: (a) the Application for a Site Certificate for the Port Westward Generating Project, which the Department of Energy ("Department") filed on April 11, 2002; (b) the Certificate Holder's Request for First Amendment to the Site Certificate for the Port Westward Generating Project, which the Council received on October 25, 2003; (c) the Certificate Holder's Request for Second Amendment to the Site Certificate for the Port Westward Generating Project, which the Council received on May 7, 2004; (d) the Certificate Holder's Request for Third Amendment to the Site Certificate for the Port Westward Generating Project, which the Council received on November 3, 2004, (e) the Certificate Holder's Request for Fourth Amendment to the Site Certificate for the Port Westward Generating Project, which the Council received on January 18, 2006, (f) the Certificate Holder's Request for Fifth Amendment to the Site Certificate for the Port Westward Generating Project, which the Council received on July 18, 2006, (g) the Certificate Holder's Request for Sixth Amendment to the Site Certificate for the Port Westward Generating Project, which the Council received on November 7,2008, (h) the Certificate Holder's Request for Seventh Amendment to the Site Certificate for the Port Westward Generating Project, which the Council received on September 18, 2009, (i) the Certificate Holder's Request for the Eighth Amendment to the Site Certificate for Port Westward Generating Project, which the Council received on November 4, 2010, (j) the Certificate Holder's Request for the Ninth Amendment to the Site Certificate for Port Westward Generating Project, which the Council received on October 30, 2012, ~~and~~ (k) the Certificate Holder's Request for the Tenth Amendment to the Site Certificate for Port Westward Generating Project, which the Council received on May 28, 2013, and (l) the Certificate Holder's Request for the Eleventh Amendment to the Site Certificate for Port Westward Generating Project, which the Council received on April xx, 2019. **[**Amendments 1 through ~~10~~11]**.**

The terms used in this Site Certificate shall have the same meaning set forth in ORS 469.300, 469.503(2)(e) and Oregon Administrative Rules (OAR) 345-001-0010, except where otherwise stated or where the context clearly indicates otherwise.

B. SITE CERTIFICATION

1. To the extent authorized by State law and subject to the conditions set forth herein, the State approves and authorizes the Certificate Holder to construct, operate and retire a natural gas-fired, combined cycle combustion turbine energy facility, together with certain related or supporting facilities, at the site as described in Section C of this Site Certificate, near Clatskanie, Oregon. ORS 469.401(1).

2. This site certificate shall be effective (1) until it is terminated pursuant to OAR 345-027-0110 or the rules in effect on the date that termination is sought, or (2) until the Site Certificate is revoked pursuant to 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).

3. This Site Certificate does not address, and is not binding with respect to, matters that were not addressed in the Council's Final Order, as amended. 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 Project; 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 469.401(4) and 469.503(3).

4. Both the State and the Certificate Holder shall abide by local ordinances and state law and the rules of the Council in effect on the date this Site Certificate is executed. In addition, upon a clear showing of a significant threat to the 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).

5. 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).

6. Subject to the conditions herein, this Site Certificate binds the State and all counties, cities and political subdivisions in this state as to the approval of the site and the construction, operation and retirement of the Project as to matters that are addressed in and governed by this Site Certificate. ORS 469.401(3).

7. 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).

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

9. 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 assure that the Project is being operated consistently with the terms and conditions of this Site Certificate. ORS 469.430.

10. The Certificate Holder may develop the energy facility in two phases. Phase 1 would consist of the southernmost generating unit ("Unit 1"), including one combustion turbine generator, heat recovery steam generator, steam generator, one step-up transformer bank, auxiliary transformer, and cooling tower. Phase 1 would also include all of the energy facility components common to the two units and the related or supporting facilities common to the

two units. Phase 2 would consist of the northernmost generating unit ("Unit 2") and its associated facilities. All conditions of this Site Certificate apply equally to Phase 1 and Phase 2, unless a condition specifies different obligations for Phase 1 or Phase 2. [Amendments No. 1, 3 & ~~3~~11]

C. SITE DESCRIPTIONS

C.1. FACILITY

C.1.a. Major Structures and Equipment

Major Structures and Equipment. The net electric power output of the energy facility will be about 650 MW comprised of base load generation, power augmentation (i.e., duct burning ~~and non-base load generation.~~), and non-base load generation. The power augmentation and non-base load generation provide flexible peaking, load-following, and wind integration services that are needed to maintain a reliable and stable utility system. [Amendment No. 7 & 11]

Unit 1 of the energy facility will consist of one heavy-duty frame-type combustion turbine generator (Mitsubishi G Class), one heat recovery steam generator ("HRSG"), and one steam turbine. It will burn natural gas in the combustion turbine and duct burners. Expanding gases from combustion will turn the rotor within the turbine that is connected to an electric generator~~-~~. The hot gases exhausted from the combustion turbine and duct burners will be used to raise steam in the HRSG. Steam from the HRSG will be expanded through the steam turbine driving its own electric generator. [Amendments No. 1 & 7.]

For Unit 1, the combustion turbine will be housed in a turbine building that provides thermal insulation, acoustical attenuation and fire extinguishing media containment. The turbine building, occupying a footprint measuring about 150 feet by 250 feet and standing about 90 feet high, will also house the steam turbine generator, condenser and balance of plant equipment. The enclosure will allow access for routine inspection and maintenance. The administration building, occupying a footprint measuring about 110 feet by 140 feet and standing about 30 feet high, includes the control room and administrative offices. [Amendment No. 7 & 11]

For Unit 1, the HRSG will occupy a footprint measuring about 50 feet by 150 feet and will stand about 110 feet high. A stack will be provided for the HRSG. The stack will be about 36 feet in diameter and 200 feet high. [Amendment No. 7]

For Unit 2, aeroderivative combustion turbine generators will be equipped with outdoor enclosures with thermal insulation, acoustical attenuation and fire extinguishing media containment. Reciprocating engine generators will be housed in an engine building, occupying a footprint measuring up to 100 feet by 500 feet and standing about 30 to 40 feet high. [Amendment No. 7]

Six transformers will step-up the generator voltages to the substation voltage of 230 kilovolts ("kV"). Two auxiliary transformers will supply power for plant auxiliary loads. [Amendments No. 1 & 7**]**

Two mechanical-draft cooling towers will be used to remove the waste heat from the main condenser and the plant auxiliary heat exchangers. The cooling towers and circulating water pumps will cover an area of about 75 feet by 650 feet and will stand about 50 feet high. [Amendment No. 7]

A switchyard or dead-end transmission structure will interconnect the plant's output to the 230-kV transmission network. The switchyard footprint will measure about 300 feet by ~~500~~ 550 feet. [Amendment No. 1 & 11]

An auxiliary boiler will supply steam for plant start-ups and short duration shut-downs. The auxiliary boiler will be fueled with natural gas. [Amendment No. 3]

Additional facilities will include: a plant services/warehouse building, a boiler feed pump building; a fire water pump building; a water treatment building; a clarifier; a settling basin; a condensate tank, ~~a~~ two fire water/service water storage tanks and ~~-~~ two demineralized water storage tanks (~~44~~880,000 gallon and 1,100,000 gallon capacity respectively); lubricating oil tanks**;** a natural gas metering station; natural gas compressor stations with electric compressors of 1,000 to 7,000 horsepower total, enclosed in buildings with acoustical insulation; and~~,~~ aqueous ammonia storage tanks (each with up to 70,000-gallon capacity and equipped with containment). [Amendments No. 1, 7 & ~~7~~11]

Natural gas will not be stored at the energy facility site. Diesel fuel for the fire pumps and reciprocating engine micro-pilot systems will be stored in aboveground tanks. Water treatment chemicals will be stored in permanent aboveground storage tanks or portable plastic tanks (totes). To prevent storm water runoff from chemical storage, all fuel and chemical storage will be inside buildings or under cover in paved areas with a curb. All individual spill containment areas will be designed to hold at least 110 percent of the volume of liquids stored within them. [Amendment No. 7]

A complete fire protection system will be installed within the buildings and yard areas at the energy facility site. The system will be designed to meet the requirements of the Uniform Fire Code, as amended by Oregon and the National Fire Protection Association, and all other applicable fire protection standards. The fire protection system will include a fire water system, a dry chemical extinguishing system, a carbon dioxide ("CO2") extinguishing system, and portable fire extinguishers. The road system within the energy facility site will be designed for access by large trucks needed for equipment and material deliveries. The minimum turning inside radius for roads will be 40 feet.

The fire water system will include a fire water supply loop, fire hydrants, sprinkler systems, and hoses placed at appropriate locations. Reserved capacity ~~in the~~of 180,000-gallons within the Unit 1 fire water/service water storage tank and 400,000 gallons in the Unit 2 fire water tank will serve as the firewater source (total of 580,000 gallons).

The combustion turbine enclosures will be protected by foam or CO2 systems. If the systems were to activate, an alarm will sound and/or a visual indicator will light up on the gas turbine control panel.

Portable fire extinguishers will be placed at key locations within the energy facility site. The type and number of portable fire extinguishers will conform to applicable code requirements.

The Certificate Holder may develop the whole facility at the same time or it may develop only one of the generating units and the related or supporting facilities ("Phase 1") or the two units of the energy facility in two distinct phases ("Phase 1" and "Phase 2"). As referred to in this Site Certificate, the Certificate Holder would develop Phase 1 first if it develops the energy facility in phases. Phase 1 would consist of the southernmost generating unit ("Unit 1"), including a combustion turbine generator, heat recovery steam generator, steam generator, one step-up transformer bank, auxiliary transformer, and cooling tower. Phase 1 would also include all of the energy facility components common to the two units and the related or supporting facilities common to the two units. [Amendments No. 1, 3 & ~~3~~11]

Output. The net electric power output of the energy facility will be up to 650 MW, comprised of base load generation, power augmentation (i.e. duct burning), and non-base load generation. The power augmentation and non-base load generation provide flexible peaking, load-following, and wind integration services that are needed to maintain a reliable and stable utility system. [Amendments No. 1, 3 & 7]

The Certificate Holder proposes to operate Unit 1 with power augmentation technologies for 3,000 hours annually on average. The Certificate Holder proposes to operate Unit 2 as a non-base load power plant. [Amendments No. 1, 3 & 7]

Fuel Use. The energy facility will use natural gas as the only fuel to power the turbines, reciprocating engines, and the power augmentation technologies. It will use up to approximately 4,700 MMBtu per hour of natural gas at full load with the duct burners in operation at the average annual site condition. [Amendments No. 1, 3, 7 & ~~7~~11]

Water Use. The energy facility will obtain water to generate steam and to cool the steam process from an existing PGE intake structure on the Bradbury Slough of the Columbia River. For Unit 1, the Certificate Holder obtained a permanent transfer of 5.4 cfs of a water right associated with PGE's Trojan Nuclear Plant, Certificate No. 81969. For Unit 2, PGE will obtain a

permanent transfer of an additional 3.0 cfs under the same water right.[1] [Amendments No. 1, 3 &7]

Average water demand over at the energy facility will be about 2,800 gallons per minute ("gpm"), or 4.03 -million gallons per day ("gpd"). Peak water demand will be about 3,770 gpm, 5.4 million gpd, or 8.4 cubic feet per second ("cfs"). [Amendments No.1, 3 & 7]

PGE owns and operates an existing intake structure on the Bradbury Slough, which will be the authorized point of diversion for surface water rights transferred for use at the energy facility site. To serve the energy facility, PGE will place additional pumps within the existing intake facility. PGE will employ fish screens compliant with National Marine Fisheries Service ("NMFS") screening criteria and Oregon Department of Fish and Wildlife ("ODFW") criteria. [Amendments No. 1& 7]

Wastewater. Process blowdown is washdown water, filter backwash or other non-sanitary liquid waste produced within the energy facility. The average volume of process blowdown for both units combined will be about 30 gpm. Cooling system blowdown is water withdrawn from the cooling system to control the buildup of dissolved salts. The average volume of cooling system blowdown for both units combined will be about 970- gpm, but it could vary depending on the quality of the river water supply. The energy facility will discharge its process and cooling system blowdown to the Columbia River under a National Pollution Discharge Elimination System ("NPDES") permit that the Port of St. Helens has requested from DEQ. [Amendments No. 1 & 7].

The Certificate Holder will discharge sanitary sewage to an engineered septic tank and drain field at a rate of about 500 gallons per day, ~~as permitted by a Water Pollution Control Facilities permit~~under the oversight of Columbia County. The Certificate Holder will route storm water from roofs and paved areas to pervious areas to percolate into the shallow groundwater.

C.1.b. Related or Supporting Facilities

The energy facility will include the following related or supporting facilities:

Natural Gas Pipelines. Natural gas will fuel the combustion turbine generators, reciprocating engines, and duct burners. The energy facility will be served by the Kelso-Beaver Pipeline, an existing FERC-regulated interstate pipeline with a current capacity of ~~193~~200,~~000~~913 decatherms per day. PGE owns the pipeline jointly with two other parties. To create the additional capacity that will be required to serve the energy facility, PGE will add 1,000 to 7,000 compressor horsepower to the Port Westward site and/or up to 8,000 compressor horsepower to the Kelso-Beaver Pipeline. All work on the existing pipeline will be subject to FERC approval. The addition of compressor horsepower is intended to ensure 300 to 1000 psig gas pressure at

[1] WRD will issue the transferred water right a new number, replacing #81969

the Port Westward Industrial Area with total capacity of 310 million standard cubic feet/day. [Amendments No. 1, 7 & ~~7~~11]

The interconnecting pipeline, about 18 inches in diameter, between the existing Kelso-Beaver Pipeline and the energy facility will be about 1,000 feet long and will be installed below grade with appropriate cathodic protection.

In addition, the facility will include as a related or supporting facility a secondary natural gas pipeline that will connect the energy facility to an extension of the existing 20-inch NW Natural Beaver Lateral. The connecting pipeline will be approximately 2,000 feet long and about 12 inches in diameter. The new pipeline will be installed below grade with appropriate cathodic protection. The new pipeline will be owned and operated by NW Natural. [Amendment No. 5]

Water Supply Pipeline. Water supply for the energy facility will be drawn from Bradbury Slough at about River Mile 53.8 of the Columbia River from an existing PGE intake facility for the PGE Beaver Generating Plant. The pump capacity of the existing intake facility will be expanded. No major structural improvements or modifications to the intake facility will be required. However, PGE will upgrade the fish screens to comply with NMFS and ODFW criteria regardless of whether it builds the Port Westward Generating Project. The Certificate Holder will install a water supply pipeline about 20 inches in diameter and 6,000 feet long to convey water from the intake facility to the energy facility. The water supply pipeline will traverse upland areas and will avoid wetlands. [Amendment No. 1]

Chlorination and Electrical Control Buildings. Two small structures will be constructed on upland south of the intake facility. One structure, with a footprint of about 600 square feet, will be for chlorination. The other structure, with a footprint of about 150 feet, will be for electrical control. Underground lines in a 25-foot wide corridor will connect these structures to the intake structure. [Amendment No. 3]

Wastewater Pipeline. Process and cooling wastewater discharged from the energy facility will be collected in a settling basin and returned to the Columbia River about one-half mile northwest of the energy facility, pursuant to the Port of St. Helens' NPDES permit. [Amendment No. 1]

Battery Energy Storage System

The Battery Energy Storage System (BESS) will add 4 to 6 MW of battery energy storage at PWGP as a related or supporting facility to Unit 2. The BESS will be factory built with batteries, enclosures, power conversion systems (inverters), an interconnection system, and step-up transformers. The point of interconnect will be the switchgear in the existing switchyard.

Utility Lines Between the Energy Facility Site and the PGE Beaver Generating Plant. The Certificate Holder will construct water, backup electricity and communications lines between the existing PGE Beaver Generating Plant and the energy facility. The Certificate Holder will install the lines below ground within existing roadways. Potable water may be conveyed to the

energy facility in a pipeline from the potable water storage tank located in the vicinity of the PGE water intake facility that currently serves the PGE Beaver Generating Plant. The potable water pipeline will be about two inches in diameter. The Certificate Holder will install the potable water line underground. The potable water line will join the energy facility's water supply pipeline corridor at their intersection as shown on revised Figure B-2. [Amendment No. 1]

The Certificate Holder may also construct a demineralized water pipeline about six inches in diameter from the PGE Beaver Generating Plant to the energy facility. If the Certificate Holder constructs the demineralized water pipeline, it will not construct a water treatment building as part of the energy facility. The Certificate Holder will install a backup 13.8 kV electrical distribution line and a communications line in a conduit from the PGE Beaver Generating Plant to the energy facility. The demineralized water line, communications line, and backup electricity lines will be about 1,~~-~~200 feet long, and the portion of the potable water line between the potable water storage tank and the water supply pipeline corridor will be about 1,700 feet long [Amendments No. 1 & 3]

Temporary Construction Staging and Laydown Areas. Temporary construction staging and laydown areas totaling approximately 12.4 acres will be located around the energy facility site. Another laydown area of about 6 acres will be located on upland south of the existing PGE water intake structure. The areas will be used for storing equipment and materials and as staging areas for constructing the power plant. Construction laydown and staging areas are as depicted on Figure B-2 rev.1, submitted with the Fourth Request for Amendment on January 18, 2006. [Amendment No. 4]

In addition to the temporary construction staging and laydown areas approved through RFA #4 and through the Change Order issued April 29, 2013, which allows the Certificate Holder to use a 9.13-acre graveled area within the fence line of the adjacent Beaver Generating Plant for laydown and staging area used in the construction of Unit 2, the Certificate Holder is authorized to use an additional approximately 10.9 acres for temporary laydown, as depicted in Figures 1-3 of the Final Order approving Amendment #10. Specifically, the previously approved laydown area north of the energy facility site is expanded by approximately 1.9 acres; the previously approved laydown area to the south, in the vicinity of the water intake structure, is expanded by approximately 5.7 acres; and the Certificate Holder is authorized to use approximately 3.3 acres within the fence line of the Beaver Generating Plant. [Amendment No. 10]

Spoils Disposal Area. Excess soils from construction at the energy facility site will be spread across the spoils disposal site of about 11.6 acres, which will be located southeast of the PGE Beaver Generating Plant. [Amendment No. 3].

Electric Transmission Line. The energy facility will deliver electric power to the regional grid by means of a new transmission line consisting of one 230 kV circuit on monopole towers (up to 120 feet high) routed along existing power line easements. There ~~are~~ were two transmission

line alternatives routes under consideration, with two other short alternative segments in the vicinity of the BPA Allston Substation:

Alternative One. The first alternative will entail routing the transmission line from the energy facility to the Bonneville Power Administration ("BPA") Allston Substation near Alston, Oregon (a distance of about 10 miles).

Alternative Two. The second alternative will entail routing the transmission line from the energy facility to the PGE Trojan Substation near Goble, Oregon (a distance of about 20 miles).

PWGP and the Summit Project present a unique situation regarding the transmission lines for their facilities. The two proposed energy projects will be located close to each other and will use the same existing transmission corridor and the same towers from Port Westward to the vicinity of the BPA Allston Substation, Alternative One. The towers will be double-circuited, with PWGP on one side and the Summit Project on the other.

The Portland General Electric Transmission Group will build the transmission lines for either or both projects, depending on which energy facilities are eventually constructed. The transmission line for each project is a related or supporting facility for that project, and therefore, must be built to Council standards. However, because the Council is reviewing the applications for both projects simultaneously, because they will use the same towers, and because the same company will build and operate the transmission lines, the Council has consolidated the reviews within the PWGP proceeding and is placing conditions for the transmission lines in the site certificate for the Port Westward Generating Project.

Some conditions account for the possibility that the Certificate Holder may construct the Port Westward to BPA Allston Substation Transmission Line separately from constructing the energy facility. Additionally, if the Certificate Holder for PWGP does not construct the energy facility within the time specified in its Site Certificate or if it terminates its Site Certificate, the Council intends that the Certificate Holder of the Summit Project must amend its Site Certificate to include the 230 kV transmission line from the Summit Project to the BPA Allston Substation.

C.2. LOCATION OF THE FACILITY

C.2.a. The Energy Facility Site

The energy facility will be located about seven miles by road northeast of the city of Clatskanie in Columbia County, Oregon. The energy facility site will be located on an approximately 852-acre parcel leased to PGE by the Port of St. Helens in Section 15, Township 8 North, Range 4 West, Willamette Meridian. The energy facility site will be fenced and will comprise about 26 acres of the larger parcel [Amendments No. 1, 2 & 7]

Bradbury Slough of the Columbia River lies to the northeast of the energy facility site. Access to the energy facility site will be by traveling about 1.5 miles north on Kallunki Road from its intersection with Alston-Mayger Road. The existing PGE Beaver Generating Plant is located about one-half mile southwest of the energy facility site.

C.2.b. Related or Supporting Facility Sites

Natural Gas Pipeline Corridors. The primary natural gas pipeline will be about 18 inches in diameter and will interconnect with the existing Kelso-Beaver Pipeline about 1,000 feet west of the energy facility site. The natural gas pipeline corridor will lie within the 852-acre parcel leased to PGE by the Port of St. Helens and situated within Section 15, Township 8 North, Range 4 West, Willamette Meridian.

The secondary natural gas pipeline will be about 12 inches in diameter, extending from the energy facility to an extension of the existing NW Natural Beaver Lateral, near the northeast corner of the Beaver Generating Plant. The related or supporting portion of the new natural gas pipeline corridor will be approximately 2,000 feet long and will lie within the 852-acre parcel leased to PGE by the Port of St. Helens and situated within Sections 15 and 16, Township 8 North, Range 4 West, Willamette Meridian. [Amendment No. 5]

Water Supply Pipeline Corridor. The proposed water supply pipeline will supply raw water to the energy facility from the existing PGE Beaver Generating Plant water intake structure in Bradbury Slough of the Columbia River. The pipeline right-of-way will be about 50 feet wide and 6,000 feet long, will cover an area of about 7 acres, and will lie within the 852-acre parcel leased to PGE by the Port of St. Helens and situated within Section 15, Township 8 North, Range 4 West, Willamette Meridian.

Chlorination and Electrical Control Buildings. Two small structures will be constructed on upland south of the existing PGE Beaver Generating Plant water intake structure in Bradbury Slough. The two structures, with a combined footprint of about 750 square feet, will lie within the 852-acre parcel leased to PGE by the Port of St. Helens and situated within Section 15, Township 8 North, Range 4 West, Willamette Meridian. [Amendment No. 3].

Wastewater Pipeline Corridor. Water discharged from the energy facility will be returned to the Columbia River about one-half mile northwest of the energy facility. The wastewater pipeline corridor will be about 100 feet wide and 2,400 feet long, will cover an area of about 6 acres, and will lie primarily within the 852-acre parcel leased to PGE by the Port of St. Helens and situated within Section 15 and 16, Township 8 North, Range 4 West, Willamette Meridian. [Amendment No. 1]

Battery Energy Storage System

The BESS will be installed within the energy facility site described in Section C.2.a.

Utility Line Corridor Between the Energy Facility Site and the PGE Beaver Generating Plant. The Certificate Holder will construct a potable water pipeline, backup electricity line, communications line and possibly a demineralized water pipeline from the PGE Beaver Generating Plant or the potable water tank to the energy facility site. It will install the lines a minimum depth of three feet below grade in existing roadways entirely with the 825-acre parcel that the Port of St. Helens has leased to PGE. The parcel is located within Section 15 and 22, Township 8 North, Range 4 West, Willamette Meridian. [Amendment No. 1]

Temporary Construction Staging and Laydown Areas. Temporary construction staging and laydown areas totaling approximately 12.4 acres will be located around the energy facility site, within the 852-acre parcel leased to PGE by the Port of St. Helens and situated within Sections 15 and 16, Township 8 North, Range 4 West, Willamette Meridian. Another laydown area of about 6 acres will be located on upland south of the existing PGE water intake structure within Section 15, Township 8 North, Range 4 West, Willamette Meridian. The areas will be used for storing equipment and materials and as staging areas for constructing the power plant. Construction laydown and staging areas are as depicted on Figure B-2 rev.1 as submitted with the Request for Fourth Amendment on January 18, 2006 [Amendment No. 4]

Spoils Disposal Area. Excess soils from construction at the energy facility site will be spread across the spoils disposal site of about 11.6 acres, which will be located southeast of the PGE Beaver Generating Plant, within the 852-acre parcel leased to PGE by the Port of St. Helens and situated within Sections 15 and 22, Township 8 North, Range 4 West, Willamette Meridian. [Amendment No. 3]

Transmission Line Corridor. The transmission line will follow one of two alternative routes:

Alternative One. Under this alternative, the energy facility will deliver electric power to the BPA Allston Substation near Alston, Oregon, by means of a new 230-kV circuit on monopole steel structures, except where it will have to cross the existing BPA lines. A separate 230 kV circuit will carry the output of the Summit Project on the same structures, as noted above. The new transmission line will be routed on an existing PGE right-of-way that is 250 feet wide, except at the BPA Allston Substation where a new right-of-way may be required. The structures will be placed on or near the centerline of the unused north half of the right-of-way. The transmission line corridor will be about 125 feet wide and 10 miles long, will occupy an area of about 300 acres, and will pass through Sections 15, 22, 23, 26, 35 and 36, Township 8 North, Range 4 West, and Sections 31, 5, 6, 4, 3 and 10, Township 7 North, Range 3 West, Willamette Meridian.

Alternative Two. Under this alternative, the energy facility will deliver electric power to Trojan near Goble, Oregon, by means of a new 230-kV circuit on monopole steel structures. Between PWGP and the BPA Allston Substation, the new transmission line will be routed on an existing PGE right-of-way 250 feet wide as described in Alternative One. The structures will be placed on or near the centerline of the unused north half of the right-of-way. Between the BPA Allston Substation and Trojan, the new transmission line will run parallel to an existing BPA transmission line. This section of the transmission line corridor will be about 125 feet wide and

ten miles long, will occupy an area of about 300 acres, and will pass through Sections 10, 11, 15, 14, 23 and 24, Township 7 North, Range 3 West, and Sections 19, 30, 29, 28, 33 and 34, Township 7 North, Range 2 West, and Sections 3 and 2, Township 6 North, Range 2 West, Willamette Meridian.

Alternates 3 and 4. These short alternate segments are in the vicinity of the BPA Allston Substation. They provide flexibility for interconnecting with the substation.

Unanalyzed Options. As shown on Figure C-2 of the ASC, and in particular the enlarged detail of the BPA Allston Substation, there is a segment of Alignment 1 identified as "2nd (future) circuit." This Site Certificate does not address that proposed segment of Alignment 1.

D. COUNCIL SITING STANDARDS

D.1. [PLACEHOLDER]

[No Conditions]

D.2. ORGANIZATIONAL EXPERTISE

(1) The Certificate Holder shall report to the Department of Energy ("Department") in a timely manner any change in the ownership of Portland General Electric Company ("PGE").

(2) Before beginning construction of the energy facility, the Port Westward to Bonneville Power Administration ("BPA") Allston Substation Transmission Line, or other related or supporting facilities, the Certificate Holder shall identify to the Energy Facility Siting Council ("Council") whom it has chosen to act in the role of the engineering, procurement and construction ("EPC") contractor(s) for specific portions of the work.

(3) If the Certificate Holder chooses a third-party contractor to operate the facility, the Certificate Holder shall submit to the Council the identity of the contractor so the Council may review the qualifications and capability of the contractor to meet the standards of OAR 345-0022-0010. If the Council finds that a new contractor meets these standards, the Council shall not require an amendment to the Site Certificate for the Certificate Holder to hire the contractor.

(4) Any matter of non-compliance under this Site Certificate shall be the responsibility of the Certificate Holder. Any notice of violation issued under the Site Certificate will be issued to the Certificate Holder. Any civil penalties levied shall be levied on the Certificate Holder.

(5) The Certificate Holder shall contractually require the EPC contractor(s) and all independent contractors and subcontractors involved in the construction and operation of the facility to comply with all applicable laws and regulations and with the terms and

conditions of the Site Certificate. Such contractual provision shall not operate to relieve the Certificate Holder of responsibility under the Site Certificate.

(6) The Certificate Holder shall obtain necessary state and local permits or approvals required for the construction, operation and retirement of the facility or ensure that its contractors obtain the necessary state and local permits or approvals.

(7) [Deleted]. [Amendments No. 1 & 7]

(8) Before beginning construction of the energy facility, the Certificate Holder shall deliver to the Department evidence that the Oregon Department of Environmental Quality has issued to the Port of St. Helens a National Pollutant Discharge Elimination System ("NPDES") permit that provides for the discharge of non-sanitary wastewater from the Port Westward Industrial Site, including all non-sanitary wastewater produced by the energy facility.

(9) Before beginning construction of the energy facility, the Certificate Holder shall deliver to the Department a copy of the agreement between the Certificate Holder and the Port of St. Helens that provides for discharge of non-sanitary wastewater from the energy facility by means of the NPDES permit issued to the Port of St. Helens.

D.3. RETIREMENT AND FINANCIAL ASSURANCE

(1) 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, and prepared pursuant to Condition D.3(2).

(2) Two years before closure of the energy facility, the Certificate Holder shall submit to the Department a proposed final retirement plan for the facility and site, pursuant to OAR 345-027-0110, including:

(a) A plan for retirement that provides for completion of retirement within two years of permanent cessation of operation of the energy facility and that protects the public health and safety and the environment;

(b) A description of actions the Certificate Holder proposes to take to restore the site to a useful, non-hazardous condition; and,

(c) A detailed cost estimate, a comparison of that estimate with the dollar amount secured by a bond or letter of credit and any amount contained in a retirement fund, and a plan for assuring the availability of adequate funds for completion of retirement.

(3) 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.

(4) A retirement plan that the Certificate Holder submits may provide transmission lines constructed and operated under this Site Certificate remain in operation to serve other energy facilities. [Amendment No. 3]

(5) The Certificate Holder shall submit to the State of Oregon, through the Council, a bond or letter of credit in the amount described below, naming the State of Oregon, acting by and through the Council, as beneficiary or payee [Amendments No. 3 & 7]

(a) Before beginning construction of Unit 1, the Certificate Holder submitted a bond or letter of credit in the amount of $3,698,000 (in 2004 dollars as of the fourth quarter). Upon execution of the Seventh Amended Site Certificate**,** the Certificate Holder shall adjust the amount of the bond or letter of credit to $5,201,000 (in 1st Quarter 2010 dollars)**.** [Amendments No. 1, 3 & 7**]**

~~-~~(b) Before beginning construction of Unit 2, the Certificate Holder shall submit a bond or letter of credit in an amount equal to the sum of (i) $5,201,000 (in 1st Quarter 2010 dollars) for Unit 1, plus (ii) an amount for Unit 2 determined by application of the Department's Facility Retirement Cost and Estimating Guide[2] subject to review and approval by the Department. [Amendments No. 3 & 7]

(c) [Deleted]. [Amendments No. 1 & 3]

(d) The form of the bond or letter of credit and identity of the issuer shall be subject to approval by the Council.

(e) The Certificate Holder shall maintain a bond or letter of credit in effect at all times until the energy facility or the Port Westward to BPA Allston Substation Transmission Line has been retired, as appropriate.

(f) The calculation of ~~-~~1st quarter 2010 dollars or X quarter 2019 dollars (or 2002 dollars for purposes of any five year supplemental payments for carbon dioxide offsets for power augmentation on Unit 1) shall be made 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")[3]. If at any time the Index is no longer published, the Council shall

[2] The Department's Facility Retirement Cost and Estimating Guide is available from the Oregon Department of Energy

[3] DAS maintains the Index and places it on line at http://www.oregon.gov/DAS/OEA/docs/economic/econdata/other-quarterly.xls

select a comparable calculation of 2002, 2004, 2010 and ~~2010~~ 2019 dollars. [Amendments No. 3, 6, 7 and ~~7~~11]

(g) The amount of the bond or letter of credit account shall increase annually by the percentage increase in the Index.

(h) The Certificate Holder shall not revoke or reduce the bond or letter of credit before retirement of the facility without approval by the Council.

(6) The Certificate Holder shall describe in the annual report submitted to the Council, pursuant to OAR 345-026-0080, the status of the retirement fund or other instrument to ensure it has adequate funds to restore the site.

(7) Before beginning construction of the energy facility or BESS, the Certificate Holder shall prepare and submit to the Department a materials management and monitoring plan that addresses the handling of hazardous substances, the measures it will implement to prevent site contamination, and how it will document implementation of the plan during construction. The materials management and monitoring plan shall be subject to approval by the Department. For the purpose of this condition and Conditions D.3(8), D.3(10), D.3(11), and D.3(12) below, the terms "release" and "hazardous substances" shall have the meanings set forth at ORS 465.200. [Amendment No. 11]

(8) Before beginning operation of the energy facility or BESS, the Certificate Holder shall prepare and submit to the Department a materials management and monitoring plan that addresses the handling of hazardous substances, the measures it will implement to prevent site contamination, and how it will document implementation of the plan during operation. The materials management and monitoring plan shall be subject to approval by the Department. [Amendment No. 11]

(9) Not later than 10 years after the date of commercial operation of Phase 1 of the energy facility, and each 10 years thereafter during the life of the energy facility, the Certificate Holder shall complete an independent Phase I Environmental Site Assessment of the energy facility site. Within 30 days after its completion, the Certificate Holder shall deliver the Phase I Environmental Site Assessment report to the Department. [Amendment No. 1]

(10) In the event that any Phase I Environmental Site Assessment identifies improper handling or storage of hazardous substances or improper record keeping procedures, the Certificate Holder shall correct such deficiencies within six months after completion of the corresponding Phase I Environmental Site Assessment. It shall promptly report its corrective actions to the Department. The Council shall determine whether the corrective actions are sufficient.

(11) The Certificate Holder shall report any release of hazardous substances, pursuant to DEQ regulations, to the Department within one working day after the discovery of such

release. This obligation shall be in addition to any other reporting requirements applicable to such a release.

(12) If the Certificate Holder has not remedied a release consistent with applicable Oregon Department of Environmental Quality standards or if the Certificate Holder fails to correct deficiencies identified in the course of a Phase I Environmental Site Assessment within six months after the date of the release or the date of completion of the Phase I Environmental Site Assessment, the Certificate Holder shall submit within such six-month period to the Council for its approval an independently prepared estimate of the additional cost of remediation or correction.

(a) Upon approval of an estimate by the Council, the Certificate Holder shall increase the amount of its bond or letter of credit by the amount of the estimate.

(b) In no event, however, shall the Certificate Holder be relieved of its obligation to exercise all due diligence in remedying a release of hazardous substances or correcting deficiencies identified in the course of a Phase I Environmental Site Assessment.

(13) All funds received by the Certificate Holder from the salvage of equipment and buildings during retirement of the facility shall be committed to the restoration of the energy facility site to the extent necessary to fund the approved site restoration and remediation. [Amendment No. 11]

(14) 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.

(15) 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 and prepared pursuant to Condition D.3(2), the Council shall notify the Certificate Holder and request that the Certificate Holder submit a proposed final retirement plan to the Department within a reasonable time not to exceed 90 days.

(a) If the Certificate Holder does not submit a proposed final retirement plan by the specified date or if the Council rejects the retirement plan that the Certificate Holder submits, the Council may direct the Department to prepare a proposed a final retirement plan for the Council's approval.

(b) Upon the Council's approval of the final retirement plan prepared pursuant to subsection (a), the Council may draw on the bond or letter of credit described in Condition D.3(5) and shall use the funds 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.

(c) 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.

(d) 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.

(16) In the event that soils are removed from the temporary laydown areas approved through Amendment #10, the site certificate holder shall manage and dispose of the soil in a manner consistent with the *Hazardous Materials Management and Monitoring Plan* for Unit 2, and in accordance with state cleanup and solid waste statutes and rules. [Amendment No. 10]

(17) Before beginning construction of the BESS authorized by the Eleventh Amended Site Certificate the Certificate Holder shall submit a new bond or letter of credit, or increase the existing bond or letter of credit, in the amount of $136,736 for a lithium-ion BESS and $637,635 for a flow BESS, adjusted as described under D.3.5(f) and D.3.5(g). [Amendment No. 11]

D.4. LAND USE

(1) Before beginning construction of the energy facility, the Certificate Holder shall submit a landscaping plan for the energy facility to Columbia County as part of its building permit application for the energy facility. The landscaping plan shall be subject to County approval, provided that the plan is consistent with this Site Certificate and the Final Order. The Certificate Holder shall implement the landscaping plan.

(2) Before beginning construction of the energy facility, the Certificate Holder shall submit a site plan to Columbia County as part of its building permit application. Before beginning construction of the BESS, the Certificate Holder shall submit an updated site plan to Columbia County to reflect the addition of the BESS as a related or supporting facility. [Amendment No. 11]

(3) Before beginning construction of the energy facility, the Certificate Holder shall submit to Columbia County as part of its building permit application for the energy facility a final parking lot plan that complies with Section 1400 of the Columbia County Zoning Ordinance. The parking plan shall be consistent with this Site Certificate and Attachment D of the Final Order. The Certificate Holder shall implement the parking lot plan.

(4) Before beginning construction of the energy facility or the Port Westward to BPA Allston Substation Transmission Line, as appropriate, the Certificate Holder shall apply

for and obtain all appropriate land use permits from Columbia County and the City of Rainier.

(5) Before beginning construction of the energy facility, the Certificate Holder shall enter into a written contract with Columbia County that recognizes the rights of land owners who are adjacent to and nearby the corridor for the transmission line from the BPA Allston Substation to the Trojan Nuclear Plant where it crosses PF-76 and FA-19 zones to conduct forest operations consistent with the Forest Practices Act and Rules for uses authorized in OAR 660-006-0025, subsections (4)(e), (m), (s), (t), and (w).

D.5. STRUCTURAL STANDARD

(1) 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. In no event shall the recommended seismic design parameters be any less than those prescribed by the Oregon Uniform Building Code. As used in this condition, "seismic hazard" includes ground shaking, landslide, liquefaction, lateral spreading, tsunami inundation, fault displacement, and subsidence.

(2) If the Certificate Holder does not have subsurface information for design of the transmission lines that is acceptable to the Department and the Oregon Department of Geology and Mineral Industries ("DOGAMI"), then the Certificate Holder shall drill exploratory borings at critical locations during final design of the proposed transmission lines.

(3) Before beginning construction of the facility, the Certificate Holder shall provide the Department and DOGAMI with a report containing results of geotechnical investigations and recommendations for the design of the energy facility, transmission lines and other related or supporting facilities.

(a) The Certificate Holder shall prepare the report consistent with the study designs detailed in the Section D.5 of the Final Order and Section H.3 -the Application for a Site Certificate ("ASC").

(b) If DOGAMI is not able to review the reports, the Department shall arrange, in consultation with DOGAMI, for an independent review of the report by a qualified registered geologist.

(c) If the Certificate Holder begins construction of the Port Westward to BPA Allston Substation Transmission Line before beginning construction of other parts of the facility, Condition D.5(3) shall apply only to the Port Westward to BPA Allston Substation Transmission Line as long as it is the only part of the facility under construction.

(4) In addition to, or concurrent with Condition D.5(3), before beginning construction within the City of Rainier's Watershed zone, the Certificate Holder shall submit to the City of Rainier, the Department and DOGAMI a geotechnical report prepared by a registered engineer establishing that it can safely accomplish any construction in a known slide hazard area, flood hazard area, or drainage way, or on slopes exceeding 20 percent in that zone.

(5) If the geotechnical investigation reveals evidence that is not described in the ASC, the Certificate Holder shall revise the facility design parameters to comply with appropriate Uniform Building Code requirements.

(6) The Certificate Holder shall notify the Department, the State Building Codes Division and DOGAMI promptly if site investigations or trenching reveals that subsurface conditions differ significantly from those described in the ASC. After the Department receives the notice, the Council may require the Certificate Holder to consult with DOGAMI and the Building Codes Division and to propose mitigation actions.

(7) The Certificate Holder shall notify the Department, the Building Codes Division and DOGAMI promptly if shear zones, artesian aquifers, deformations, or clastic dikes are found at or in the vicinity of the facility site.

(8) The Certificate Holder shall design, engineer and construct the facility to avoid dangers to human safety presented by non-seismic or aseismic hazards affecting the site. As used in this condition, “non-seismic or aseismic hazards” includes settlement, landslides, groundwater, flooding, and erosion.

(9) The secondary gas supply pipeline constructed and operated by NWN shall be designed to accommodate the potential for different settlement and seismic induced differential deformation, particularly where the pipeline connects to the existing supply line.

(10) If additional geotechnical investigations are performed for the design of the BESS, the Certificate Holder shall provide the Department and DOGAMI with a report containing the results of the investigation. The report shall conform to Oregon State Board of Geologist Examiners Guideline for Preparing Engineering Geologic Reports. [Amendment No. 11]

D.6. SOIL PROTECTION

(1) Upon completion of construction in an area, the Certificate Holder shall use native seed mixes to restore vegetation to the extent practicable and shall landscape portions of the site disturbed by construction in a manner compatible with the surroundings and

proposed use. Conditions D.6(1) through D.6(6) shall apply to all soil disturbing activities, including maintenance, repair, reconstruction, and retirement of facilities. [Amendment No. 1]

(2) The Certificate Holder shall employ the following measures to control soil erosion and sediment runoff by water and wind erosion:

(a) Avoid excavation and other soil disturbances beyond that necessary for construction of the facility or confine equipment use to specific areas.

(b) Remove vegetation only as necessary.

(c) Apply water or mulch, as necessary, for wind erosion control during construction.

(d) Revegetate those construction areas that will no longer be used.

(e) Use temporary erosion and sediment control measures, such as sediment fences, straw wattles, bio-filter bags, mulch, permanent and temporary seeding, sediment traps and/or basins, rock check dams or gravel filter berms, and gravel construction entrances, and maintain these features throughout construction and restoration to reduce the potential for soil erosion and sediment runoff.

(f) Protect soil stockpiles with mulch and plastic sheeting.

(3) If excessively wet conditions occur during construction, the Certificate Holder shall limit construction activities during such periods to the degree practicable in areas susceptible to soil compaction.

(4) After completing construction in an area, the Certificate Holder shall monitor the construction area for a period of 12 months to evaluate whether construction-related impacts to soils are being adequately addressed by the mitigation procedures described in the Sediment Erosion and Control Plan. It shall submit its quality assurance measures to the Department for approval before beginning monitoring.

(5) After completing construction in an area, the Certificate Holder shall use the results of the monitoring program in Condition D.6(4) to identify remaining soil impacts associated with construction that require mitigation. As necessary, the Certificate Holder shall implement follow-up restoration measures to address those remaining impacts and shall report in a timely manner to the Department what measures it has taken.

(6) The Certificate Holder shall remove trapped sediment when the capacity of the sediment trap has been reduced by 50 percent and shall place such sediment in an upland area certified by a qualified wetland specialist.

(7) The Certificate Holder shall contain all fuel and chemical storage in paved spill containment areas with a curb or appropriately sized and compatible secondary containment. [Amendment No. 11]

(8) The Certificate Holder shall design all inside spill containment areas to hold at least 110 percent of the volume of liquids stored within them.

(9) The Certificate Holder shall design all spill containment areas located outdoors to hold at least 110 percent of the volume of liquids stored within them, together with the volume of precipitation that might accumulate during the 100-year return frequency storm.

(10) During operation, the Certificate Holder shall minimize drift from the cooling towers through the use of high efficiency drift eliminators that allow no more than 0.002 percent drift.

D.7. PROTECTED AREAS

[No Conditions]

D.8. FISH AND WILDLIFE HABITAT

(1) The Certificate Holder shall, to the extent practicable, avoid and, where avoidance is not possible, minimize construction and operation disturbance to areas of native vegetation and areas that provide important wildlife habitat. With respect to construction of the facility, the Certificate Holder shall mitigate possible impacts to wildlife by measures including, but not limited to, the following:

(a) Posting speed limit signs throughout the energy facility construction zone.

(b) Instructing construction personnel, including construction contractors and their personnel, on sensitive wildlife of the area and on required precautions to avoid injuring or destroying wildlife.

(c) Instructing construction personnel, including construction contractors and their personnel, to watch out for wildlife while driving through the facility site, to maintain reasonable driving speeds so as not to harass or strike wildlife accidentally, and to be cautious and drive at slower speeds in a period from one hour before sunset to one hour after sunrise when some wildlife species are the most active.
(d) Requiring construction personnel, including construction contractors and their personnel, to report any injured or dead wildlife detected at the facility site.

(2) The Certificate Holder shall construct, operate and retire the facility to minimize impacts to vegetation and habitat.

(a) The energy facility shall be located within previously disturbed Habitat Category 6, non-native grassland Habitat Category 4, and palustrine emergent and forested/scrub-shrub wetlands Habitat Category 3.

(b) The Certificate Holder shall limit Habitat Category 3 impacts to 0.43 acres of permanent impact within palustrine emergent and forested/scrub-shrub wetlands.

(3) The Certificate Holder shall site transmission towers outside wetlands and waterways to the greatest extent practicable. If the Certificate Holder must site transmission towers in riparian zones or wetlands, the Certificate Holder shall use a monopole design for the transmission towers to minimize ground impacts and vegetation control, except where it would have to cross the existing BPA lines.

(4) The Certificate Holder shall prohibit construction and maintenance equipment from entering perennial and intermittent streams, except as follows:

(a) Construction equipment may cross a stream if it is dry;

(b) Construction equipment may cross streams that are not dry by using temporary structures to bridge the stream in a manner that minimizes disturbance to the bed, banks and water of the stream;

(c) Construction equipment may cross a wet stream if the Certificate Holder notifies the Division of State Lands, the Oregon Department of Fish and Wildlife ("ODFW") and the Department of its intent to cross the stream prior to the crossing and these agencies concur that the crossing is acceptable.

(A) The Certificate Holder shall return any stream bed or bank that it disturbs during construction or maintenance to conditions that are comparable to pre-disturbed conditions, including stabilizing the bed and banks and revegetating the riparian area with appropriate plant species.

(B) The Certificate Holder shall construct wet stream crossings within the ODFW-designated in-water work period.

(C) The Certificate Holder shall keep the wet stream crossing width to the minimum needed.

(5) The Certificate Holder shall take advantage of existing roads to the extent practicable.

(6) Before beginning construction of the energy facility or beginning construction of the transmission lines, and in the appropriate season, the Certificate Holder shall conduct

wildlife surveys within 0.25 miles of the site to locate great blue heron rookeries. Should it locate rookeries, the Certificate Holder shall consult with ODFW and the Department to determine the action necessary to avoid adverse impacts. If it cannot avoid impacts, the Certificate Holder shall suspend construction in the affected areas during the critical nesting period of the species, as determined by the Department in consultation with ODFW.

(7) The Certificate Holder will confirm breeding status and nest location of the Crims Island bald eagles each year and consult with the Department and ODFW concerning the need for monitoring and/or modifications to construction activities if:

a) the project scope changes in a manner that may affect the bald eagles; and/or,

b) the location(s) of bald eagle nests on Crims Island changes (e.g. moves closer to the project construction site). [Amendment No. 7]

(8) As possible and practicable, the Certificate Holder shall conduct site preparation for construction of the PW2 facility, or the BESS, in a manner that minimizes potential for impacting nesting native birds protected by the Migratory Bird Treaty Act (MBTA), such as conducting initial site clearing outside of the breeding season for most birds (generally March-July). Prior to commencement of construction activity during the breeding season, a qualified biologist will conduct a walk-down of the construction site to determine the presence of any active bird nests and to rescue and relocate any nongame protected wildlife (OAR 635-045-0002) that may be encountered according to the methods provided by ODFW. Surveys will be conducted by a qualified wildlife biologist and will include complete coverage of all areas to be disturbed using systematic transects spaced a maximum of 5 meters apart. As applicable considering construction schedule, PGE will also conduct a survey beginning in March prior to construction to detect any streaked horned larks that could be using the very limited amount of potential breeding habitat on site. PGE's survey protocol methods will be coordinated with ODFW. Construction personnel will be trained regarding avian awareness issues and reporting of bird nests and dead birds found at the construction site (also see Condition D.8(1) for wildlife awareness requirements). The Certificate Holder will consult with USFWS and ODFW regarding any active bird nests found within the construction disturbance area. [Amendments No. 7, 9 & 911]

(9) The Certificate Holder shall schedule construction at the existing raw water intake pump station to avoid the purple martin nesting season (April 1 through June 30). Before beginning construction at the existing raw water intake pump station, the Certificate Holder shall conduct a survey to determine the exact location of any purple martin nests. Should the Certificate Holder cause unavoidable impacts to occur to any purple martin nest, it shall construct, install and maintain an artificial nest site at a

nearby location. It shall pick an appropriate location in consultation with ODFW and the Department.

(10) When working around riparian areas or waterways, the Certificate Holder shall use only herbicide labeled for use in those areas. The Certificate Holder shall abide by all labeling instructions when using herbicides for vegetation maintenance associated with the energy facility and transmission lines rights-of-way.

(11) The Certificate Holder shall locate chemical storage, servicing of construction and maintenance equipment and vehicles, and overnight storage of wheeled vehicles associated with construction and maintenance of the transmission line at least 330 feet from any wetland or waterway. [Amendment No. 11].

(12) The Certificate Holder shall not construct any structure other than fences, signs and the water supply pipeline within 50 feet of any Class I river, stream or the emergent vegetation adjacent to such a river or stream or within 25 feet of any other rivers, streams, and sloughs or the emergent vegetation adjacent to such a river, stream, or slough or within the riparian corridors established under Columbia County Zoning Ordinance Section 1172, as appropriate for the local jurisdiction. [Amendment No. 2]

(13) To mitigate for impacts to 19 acres of non-native grassland, the Certificate Holder shall protect 19 acres of on-site emergent wetland habitat identified in the ASC by execution of a conservation easement for the life of the energy facility. Before beginning construction of Phase 1 of the energy facility, the Certificate Holder shall provide a copy of the conservation easement or similar conveyance to the Department. [Amendment No. 1]

(14) The Certificate Holder shall restore temporary upland and wetland disturbance areas by returning the areas to their original grade and seeding, with appropriate seed mixes as recommended by ODFW and as described in ~~Exhibit P, Section P.8.1, of Certificate Holder's Request for Amendment No. 7,~~[4]the Revegetation and Noxious Weed Control Plan included as Attachment 4b of Amendment Request No. 11 ~~and by mulching the areas with straw~~. [Amendment No. 7 & 11]

(15) The Certificate Holder shall not clear any more riparian vegetation than is necessary for the permitted land use, including clearing required for safety purposes, during construction or operation of the facility.

[4] ~~PGE submitted revised Exhibit P of its request for amendment 7 in a November 19, 2009 letter from Rick Tetzloff to Adam Bless "Port Westward Generating Project – Revisions to Request to Amend Site Certificate (Amendment 7) to address ODFW comments." Revised section P.8.1 is attached to this Site Certificate as Attachment D.~~

(16) During construction of the transmission line(s) and maintenance of the rights-of-way, the Certificate Holder shall limit clearing of vegetation in riparian areas and wetlands to that needed to prevent contact with the transmission line and to meet clearance standards for safety and transmission line reliability, as provided in the appropriate sections of the National Electrical Code. [Amendment No. 2]

(17) The Certificate Holder shall mitigate for impacts to riparian shrub and forest habitat that result in canopy cover of less than 25 percent by revegetating these areas with appropriate native woody species according to the Typical Revegetation Plan (ASC, Exhibit Q, page Q-6.1).

(18) The Certificate Holder ~~1~~ shall, as soon as practicable and appropriate after completing construction in an area, implement the mitigation measures specified in Conditions D.8(13), D.8(14) and D.8(17).

(19) [Deleted]~~The Certificate Holder shall monitor revegetated areas for a period of five years and shall ensure that new vegetation has an 80 percent survival rate~~. [Amendment No. 11]

(20)~~ The Certificate Holder shall monitor and control nuisance and invasive plant species annually for a period of five years in areas where vegetation removal and/or revegetation has occurred in (1) riparian areas and wetlands along the transmission line rights-of-way, and (2) in areas temporarily disturbed by construction of the raw water, gas, and process water discharge lines, in all temporary construction staging and laydown areas, and in the spoils disposal site~~[Deleted. [Amendments No. 3, 10 & ~~10~~11]

(21)~~ The Certificate Holder shall submit an annual monitoring report to ODFW and the Department during the five-year monitoring period specified in Condition D.8(20)~~[Deleted].[Amendment No.11]

(22)~~ Within one year after completion of construction of the facility or the Port Westward to BPA Allston Substation Transmission Line, if constructed separately, the Certificate Holder shall provide a summary report to ODFW and the Department that identifies the revegetation actions it took and the results of revegetation monitoring conducted to that time. If the Certificate Holder constructs the energy facility in phases, the Certificate Holder shall provide the summary report to ODFW and the Department within one year after completion of each phase~~[Deleted]. [Amendment No. 1 & 11]

(23)~~ Within three months after completion of the final annual monitoring survey, the Certificate Holder shall provide a report to ODFW and the Department that presents the results of its revegetation monitoring~~[Deleted].[Amendment No. 11]

(24) ~~If revegetation is not successful at establishing appropriate plant cover and controlling erosion, the Certificate Holder shall take remedial actions as the Department directs~~[Deleted].[Amendment No. 11]

(25) To mitigate for impacts to 8.5 acres of non-native grassland, the Certificate Holder shall protect and enhance at least 8.5 acres of on-site emergent wetland habitat identified in Certificate Holder's Request for Amendment No. 7 by execution of a conservation easement for the life of the energy facility. Habitat enhancement measures will include planting of trees and shrubs and controlling invasive plant species as described in revised Exhibit P, Section P.8.1 of Certificate Holder's Request for Amendment No. 7, November 19, 2009 revision (Attachment D of the Site Certificate). Before beginning construction of Unit 2 of the energy facility, the Certificate Holder shall provide a copy of the conservation easement or similar conveyance to the Department. [Amendment No. 7]

(26) [Delete]. [Amendment No. 10 & 11] ~~Within 120 days of completing construction of Unit 2, the Certificate Holder shall initiate restoration of all temporarily disturbed construction laydown areas by implementing the following measures:~~

~~(1) Removal of gravel and fabric~~

~~(2) Ground decompaction~~

~~(3) Revegetation with an ODFW-approved native seed mix.~~

~~The Certificate Holder shall maintain and monitor revegetated areas and report on the status of revegetation efforts until the Department determines that the each revegetated area has demonstrated successful uplift for two consecutive years. The Department shall determine successful uplift in consultation with ODFW, based on the following percent cover targets:~~

~~60% cover by native grasses~~
~~10% cover by native forbs~~
~~10% cover by bare ground~~
~~Not to exceed 20% cover by non-native plants.~~
~~[Amendment No. 10]~~

(27) The Certificate Holder shall not use the South Laydown Area prior to October 1, 2013, unless a qualified biologist has determined that the adjacent osprey nest is inactive, and the Department has concurred with that determination in writing. [Amendment No. 10]

(28) The Certificate Holder shall implement the Revegetation and Noxious Weed Control Plan included as Attachment 4b to RFA No.11. The Revegetation and Noxious Weed

Control Plan may be amended from time to time by agreement of the certificate holder and the Council. Such amendments may be made without amendment of the site certificate. The Council authorizes the Department to agree to amendments to this plan. The Department shall notify the Council of all amendments, and the Council retains the authority to approve, reject, or modify any amendment of this plan agreed to by the Department.

D.9. THREATENED AND ENDANGERED SPECIES

(1) Before beginning construction of the transmission line between the BPA Allston Substation and the Trojan Nuclear Plant, the Certificate Holder shall direct qualified personnel to conduct species ground surveys along the transmission line corridor and within 150 feet on either side of the transmission line corridor at the appropriate time of year to determine the presence of listed plant species. If listed plant species are identified in the course of the species ground surveys, their presence shall be noted on maps, and PGE shall provide copies of the maps to the Department and the Department of Agriculture.

(2) During construction of the transmission lines, the Certificate Holder shall manipulate construction equipment and site poles, towers and access roads to avoid impacts, except as provided in Condition D.9(4), to known populations of state- or federally-listed plant species.

(3) The Certificate Holder shall ensure that all maintenance practices along the transmission line corridor minimize impacts to known populations of listed plant species.

(4) In the event the Certificate Holder determines that it cannot avoid known populations of listed plant species, the Certificate Holder shall engage qualified personnel to determine whether the proposed action has the potential to reduce appreciably the likelihood of the survival or recovery of the listed species, notify the Department of its findings, and obtain approval from the Oregon Department of Agriculture before proceeding with construction activities that affect the listed plant species. (OAR 603-073-0090).

(5) Before beginning construction of the transmission line, the Certificate Holder shall employ measures to protect raptors in the design and construction of transmission lines. It shall design all energized transmission conductors with either a minimum separation of nine feet or other measures to reduce the potential for electrocution of raptors or other birds.

(6) The Certificate Holder shall not conduct construction activities at the transmission line terminus at the Trojan Nuclear Plant that generate extreme noise or high levels of visual disturbance during the peregrine falcon critical nesting period from January 1 to June 30. Such activities include pile driving, excavation, and grading for ground stabilization purposes and site preparation. Construction activities involving lower levels of visible activity and less noise are allowed throughout the year. These include such activities as excavating and

setting forms, pouring footings, erecting power line towers and bus duct, hanging conductor wires, installing control wires, and testing.

(a) Prior to beginning construction at the terminus site, the Certificate Holder shall provide the Department and ODFW with a final construction schedule that lists various construction activities, and time periods when specific work will be conducted. The schedule shall include information on the types of heavy construction equipment that will be used and the approximate number of workers and shall demonstrate that the construction activities are consistent with the limitations of this condition. The Certificate Holder shall provide scheduling updates as necessary to alert the Department and ODFW ahead of time of any proposed changes in the work schedule should the changes occur during the critical nesting period.

(b) The Certificate Holder shall monitor peregrine falcon activity at the transmission line terminus at the Trojan Nuclear Plant between January 1 to June 30 of construction years. Before beginning construction at the transmission line terminus at the Trojan Nuclear Plant, the Certificate Holder shall coordinate with ODFW and the Department and shall consequently prepare a peregrine falcon contingency plan. This contingency plan shall address actions that the Certificate Holder would undertake in the event that the Department and ODFW determine that monitoring shows the peregrine falcon pair's nesting activities are negatively affected by the transmission line construction activities.

(c) The Certificate Holder shall not proceed with construction activity at the transmission line terminus at the Trojan Nuclear Plant during the peregrine falcon critical nesting period from January 1 to June 30 to the extent that ODFW or the Department determines that the activity is not consistent with the limitations of this condition. [Amendment No. 3]

(7) The Certificate Holder shall plant suitable vegetative species for deer forage and cover within the wetland mitigation/enhancement area.

(8) The Certificate Holder shall coordinate with ODFW about whether to conduct site-specific fish sampling at waterways that do not have confirmation of species presence or absence along the transmission line corridor. If ODFW recommends that the Certificate Holder conduct site-specific sampling, the Certificate Holder shall do so and report the results to ODFW and the Department.

(9) [Deleted]]. [Amendments No. 11]~~The Certificate Holder shall not undertake construction at the energy facility site during the bald eagle nesting season unless it obtains a final Biological Opinion and Incidental Take Statement issued by the U.S. Fish and Wildlife Service that addresses potential impacts to the bald eagle nest site on the northwest tip (downstream end) of Crims Island.~~

~~(a) The Certificate Holder shall construct and operate the energy facility consistent with the final Biological Opinion and Incidental Take Statement issued by the U.S. Fish and Wildlife Service.~~

~~(b) If the requirements of the Biological Opinion and Incidental Take Statement conflict with any conditions imposed in this Site Certificate, the Certificate Holder shall consult with the Department and ODFW to resolve the conflicts prior to taking any action in reliance on the Biological Opinion and Incidental Take Statement. [Amendment No. 3]~~

D.10. SCENIC AND AESTHETIC VALUES

(1) During construction of the facility, the Certificate Holder shall ensure that contractors move equipment out of the construction area when it is no longer expected to be used. To the extent practical, contractors shall lower equipment with long arms, such as cranes, bucket trucks, backhoes, when not in use in order to minimize visibility.

(2) During construction of the facility, the Certificate Holder shall control dust through the application of water.

(3) During construction of the energy facility, the Certificate Holder shall use directing and shielding devices on lights to minimize off-site glare. When there is no nighttime construction activity, the Certificate Holder shall minimize night lighting consistent with safety and security requirements.

(4) During operation of the energy facility, the Certificate Holder shall use directing and shielding devices on lights to minimize off-site glare, consistent with safety and security requirements.

(5) Before beginning construction of the energy facility, the Certificate Holder shall submit to Columbia County and the Department an outdoor lighting plan that shows how it will minimize glare from the energy facility site, consistent with Conditions D.10(3) and D.10(4).

(6) The Certificate Holder shall paint structures with low-glare paint in colors selected to complement the surrounding foreground and background colors.

(7) After completion of construction of related and supporting pipelines in an area, the Certificate Holder shall re-vegetate any undeveloped areas disturbed by construction activities using native species, including grasses, shrubs, and trees. If necessary, the Certificate Holder shall water re-vegetated areas on a regular basis until the plant species have been successfully established.

D.11. HISTORIC, CULTURAL AND ARCHAEOLOGICAL RESOURCES

(1) Before beginning construction of the Port Westward to BPA Allston Substation Transmission Line or the BPA Allston Substation to Trojan Transmission Line, the Certificate Holder shall complete an archaeological survey of the approved transmission line corridors in consultation with the Oregon Historic Preservation Office ("SHPO"), the Confederated Tribes of the Warm Springs Indian Reservation of Oregon, the Confederated Tribes of the Grand Ronde Community of Oregon, the Confederated Tribes of the Siletz Indian Reservation of Oregon, the Chinook Tribe in Washington, and appropriate federal agencies. The Certificate Holder shall ensure that a qualified archaeologist evaluates all cultural resources identified during the cultural resources survey. The Certificate Holder shall report to SHPO and the Department about whether its archaeologist recommends that a discovery is significant or not significant. If SHPO determines that a discovery is significant, the Certificate Holder shall make recommendations to the Council for mitigation in consultation with SHPO, the Department, the tribes, and other appropriate parties. Mitigation measures shall include avoidance or data recovery. [Amendment No. 1]

(2) During construction of the facility, the Certificate Holder shall ensure that a qualified person instructs construction personnel in the identification of cultural materials.

(3) During construction of the facility, in the event any artifacts or other cultural materials are identified, the Certificate Holder shall cease all ground-disturbing activities until a qualified archaeologist can evaluate the significance of the find. The Certificate Holder shall report to SHPO and the Department about whether its archaeologist recommends the artifacts or cultural materials are significant or not significant. If SHPO determines that the materials are significant, the Certificate Holder shall make recommendations to the Council for mitigation in consultation with SHPO, the Department, the tribes, and other appropriate parties. Mitigation measures shall include avoidance or data recovery. The Certificate Holder shall not restart work in the affected area until it has demonstrated to the Department that it has complied with the archaeological permit requirements administered by SHPO. [Amendment No. 1]

(4) The Certificate Holder shall allow monitoring by the Confederated Tribes of the Warm Springs Indian Reservation of Oregon, the Confederated Tribes of the Grand Ronde Community of Oregon, the Confederated Tribes of the Siletz Indian Reservation of Oregon, and the Chinook Tribe in Washington of earth-moving activities within any areas with a potential for containing archaeological remains.

(5) Before beginning construction of the facility or of the Port Westward to BPA Allston Substation Transmission Line separately, the Certificate Holder shall notify the Confederated Tribes of the Warm Springs Indian Reservation of Oregon, the Confederated Tribes of the Grand Ronde Community of Oregon, the Confederated Tribes of the Siletz Indian Reservation of Oregon, and the Chinook Tribe in Washington

and provide their representatives the opportunity to be available for periodic on-site monitoring during construction activities. If the Certificate Holder constructs the energy facility in phases, the Certificate Holder shall notify the Tribes prior to construction of each phase. [Amendment No. 1]

(6) If construction activities for the secondary gas pipeline occur at a level below the sandy dredge fill (a depth of 10 feet), then the Site Certificate holder or NW Natural shall immediately contact the State Historic Preservation Officer. [Amendment 5]

D.12. RECREATION

[No Conditions]

D.13. PUBLIC SERVICES

(1) During construction, the Certificate Holder shall hire a contractor to provide chemical toilet services or other appropriate facilities for construction personnel.

(2) Prior to applying for construction permits for the second power generation unit, the Certificate Holder shall enter into an Amended Traffic Improvement Agreement and pay a new Traffic Improvement Contribution to Columbia County according to the Amended Traffic Improvement Agreement and consistent with a Traffic Impact Analysis Study for the second power generation unit performed according to parameters agreed to by Columbia County and the Certificate Holder. [Amendment No. 8]

(3) The Certificate Holder shall not agree to amend the Agreement with Columbia County to reduce, revoke or waive the requirement for payment of the appropriate TIC without prior approval of the Council; however, such approval by the Council shall not require an amendment to the Site Certificate.

(4) Before beginning construction of the energy facility, the Certificate Holder shall coordinate with Columbia County the improvement and maintenance of signage and striping at the mainline rail crossing on Kallunki Road, including the installation of "DO NOT STOP ON TRACKS" signs.

(5) If construction of the energy facility occurs concurrently with construction of other projects in the Port Westward Industrial Area, the Certificate Holder shall coordinate with other users of the Port Westward Industrial Area to provide a carpooling program that identifies and/or creates park-and-ride locations to facilitate carpooling.

(6) If construction of the energy facility occurs concurrently with construction of other projects in the Port Westward Industrial Area, the Certificate Holder shall coordinate with Columbia County and other users of the Port Westward Industrial Area on the

implementation of a staggered shift schedule if Columbia County determines that traffic conditions warrant it.

(7) During construction of the energy facility, the Certificate Holder shall use barge and railroad deliveries of bulk materials to the extent practicable to minimize the number of freight truck deliveries on local roads.

(8) The Certificate Holder shall construct a fire protection system within the buildings and yard areas of the energy facility site that meets the requirements of the Uniform Fire Code, as amended by Oregon and the National Fire Protection Association standards, and all other applicable fire protection standards in effect at the time of construction.

(9) The Certificate Holder shall provide a dedicated reserve capacity of 180,000 gallons in the raw water storage tank to serve as the fire suppression water source.

(10) For fire truck access, the minimum inside turning radius of curves in the road system on the energy facility site shall be 40 feet.

(11) Prior to start of construction of Unit 2 of the energy facility, the certificate holder shall obtain from the Water Resources Department (WRD) a permanent water right transfer subject to the following conditions:

a. the right to the use of the water is restricted to beneficial use at the place of use described in transfer application T-10955, and is subject to all other conditions and limitations contained in Certificate 81969 and any related decree.

b. The quantity of water diverted at the new point of diversion, shall not exceed the quantity of water (3.0 cfs) lawfully available at the original point of diversion.

c. WRD may require the water user to install a headgate, a totalizing flow meter, or other suitable measuring devices at the point of diversion. If WRD notifies the water user to install a headgate, a totalizing flow meter, or other measuring devices, the water user shall install such devices specified by WRD within the period allowed in the notice. Once installed, the water user shall maintain the meters or measuring devices in good working order and shall allow the Watermaster access to the meters or measuring devices.

d. The water user shall maintain and operate a fish screening and/or by-pass device, as appropriate, at the point of diversion consistent with the Oregon Department of Fish and Wildlife's operational and maintenance standards.

e. The approved changes shall be completed and full beneficial use of the water shall be made on or before October 1, 2015. A Claim of Beneficial Use prepared by a Certified Water Rights Examiner shall be submitted by the Certificate Holder to the

Department within one year after the deadline for completion of the changes and full beneficial use of the water.

f. Prior to issuance of the permanent transfer, the certificate holder shall provide to ODOE and WRD a report of land ownership for the lands to which the water right is appurtenant (the FROM lands). The report must be prepared by a title company. The title company's report must either be: 1) prepared within three months of the Energy Facility Siting Council's Final Order on PWGP Amendment 7, or 2) reflect ownership information within three months of the recording of any water right conveyance agreements for the property in the county deed records. The ownership report shall include:

(A) Date reflected by the ownership information

(B) List of owners at that time

(C) Legal description of the property to which the water right involved in the transfer is currently appurtenant, and

(D) A notarized statement of consent from any landowner listed in the ownership report who is not already included in the transfer application, or other information such as a water right conveyance agreement, if applicable. [Amendments No. 7 & 9]

D.14. WASTE MINIMIZATION, OAR 345-022-0120

(1) During construction, operation and retirement of the energy facility, the Certificate Holder shall separate recyclable materials from the solid waste stream to the extent practicable, store those materials on site until sufficient quantities exist to make recycling economic, and periodically deliver or sell those materials to a recycling facility.

(2) During construction, operation and retirement of the energy facility, the Certificate Holder shall segregate all used oil, mercury-containing lights~~,~~; and lead-acid, lithium-ion, and nickel-cadmium batteries, store such materials on site, and deliver such materials to a recycling firm specializing in the proper disposal of such materials.

(3) Upon completion of construction, the Certificate Holder shall dispose of all temporary structures not required for facility operation and all timber, brush, refuse, and flammable or combustible material resulting from clearing of land and construction of the facility.

(4) During operation of the energy facility, the Certificate Holder shall convey all storm water and water discharges other than sanitary sewage to pervious areas to allow for percolation into the shallow groundwater.

(5) During operation of the energy facility, the Certificate Holder shall use internal recycling of aqueous streams whereby water shall be recycled several times in the cooling system before being discharged.

D.15. CARBON DIOXIDE STANDARD

(1) Before beginning construction of Phase 1 and Phase 2 of the energy facility, respectively, the Certificate Holder shall submit to The Climate Trust a bond or letter of credit in the amount of the monetary path payment requirement (in 2002 dollars for Phase 1 and in 1st quarter 2010 dollars for Phase 2) as determined by the calculations set forth in Condition D.15(3) and based on the estimated heat rates and capacities certified pursuant to Condition D.15(4) and as adjusted in accordance with the terms of this Site Certificate pursuant to Condition D.15(3)(c). For the purposes of this Site Certificate, the "monetary path payment requirement" means the offset funds determined pursuant to OAR 345-024-0550 and -0560 and the selection and contracting funds that the Certificate Holder must disburse to The Climate Trust, as the qualified organization, pursuant to OAR 345-024-0710 and this Site Certificate. The offset fund rate for the monetary path payment requirement shall be $0.85 per ton of carbon dioxide (in 2002 dollars) for Phase 1 and $1.27 per ton of carbon dioxide (in 1st quarter 2010 dollars) for Phase 2. The calculation of 2002 and 1st quarter 2010 dollars shall be made using the Index set forth in Condition D.3(5) and as required below in subsection (g). [Amendments No. 1, 6 & 7]

(a) The form of the bond or letter of credit and identity of the issuer shall be subject to approval by the Council.

(b) The form of the Memorandum of Understanding "MOU") between the Certificate Holder and the Climate Trust establishing the disbursement mechanism to transfer selection and contracting funds and offset funds to The Climate Trust shall be substantially in the form of Attachment A to this Site Certificate.

(c) Either the Certificate Holder or The Climate Trust may submit to the Council for the Council's resolution any dispute between the Certificate Holder and The Climate Trust that concerns the terms of the bond, letter of credit, or MOU concerning the disbursement mechanism for the monetary path payments, or any other issues related to the monetary path payment requirement. The Council's decision shall be binding on all parties.

(d) The bond or letter of credit shall remain in effect until such time as the Certificate Holder has disbursed the full amount of the monetary path payment requirement to The Climate Trust. The Certificate Holder may reduce the amount of the bond or letter

of credit commensurate with payments it makes to The Climate Trust. The bond or letter of credit shall not be subject to revocation before disbursement of the full monetary path payment requirement.

(e) In the event that the Council approves a new Certificate Holder for the energy facility:

(A) The new Certificate Holder shall submit to the Council for the Council's approval the form of a bond or letter of credit that provides comparable security to the bond or letter of credit of the current Certificate Holder. The Council's approval of a new bond or letter of credit shall not require a site certificate amendment.

(B) The new Certificate Holder shall submit to the Council for the Council's approval the form of an MOU between the new Certificate Holder and The Climate Trust that is substantially in the form of Attachment A to this Site Certificate. In the case of a dispute between the new Certificate Holder and The Climate Trust concerning the disbursement mechanism for monetary path payments or any other issues related to the monetary path payment requirement, either party may submit the dispute to the Council for the Council's resolution as provided in Condition D.15(1)(c). Council approval of a new MOU shall not require a site certificate amendment.

(f) If calculations pursuant to Condition D.15(5) demonstrate that the Certificate Holder must increase its monetary path payments, the Certificate Holder shall increase the bond or letter of credit sufficiently to meet the adjusted monetary path payment requirement within the time required by Condition D.15(3)(c). Alternately, the Certificate Holder may disburse any additional required funds directly to The Climate Trust within the time required by Condition D.15(3)(c).

(g) The amount of the bond or letter of credit shall increase annually by the percentage increase in the Index, and the disbursement of funds shall be pro-rated within the year to the date of disbursement to The Climate Trust from the calendar quarter of Council approval of the Site Certificate.

(2) The Certificate Holder shall disburse to The Climate Trust offset funds and selection and contracting funds as requested by The Climate Trust. The Certificate Holder shall make disbursements in response to requests from The Climate Trust in accordance with subsections (a), (b), and (c).

(a) The Certificate Holder shall disburse all selection and contracting funds to The Climate Trust before beginning construction.

(b) Upon notice pursuant to subsection (c), The Climate Trust may request from the issuer of the bond or letter of credit the full amount of all offset funds available or it may request partial payment of offset funds at its sole discretion. Notwithstanding the

specific amount of any contract to implement an offset project, The Climate Trust may request up to the full amount of offset funds the Certificate Holder is required to provide to meet the monetary path payment requirement.

(c) The Climate Trust may request disbursement of offset funds by providing notice to the issuer of the bond or letter of credit that The Climate Trust has executed a letter of intent to acquire an offset project. The Certificate Holder shall provide that the issuer of the bond or letter of credit disburse offset funds to The Climate Trust within three business days of a request by The Climate Trust for the offset funds in accordance with the terms of the bond or letter of credit.

(3) The Certificate Holder shall submit all monetary path payment requirement calculations to the Department for verification in a timely manner before submitting a bond or letter of credit for Council approval and before entering into an MOU with The Climate Trust. The Certificate Holder shall use the contracted design parameters for capacities and heat rates that it reports pursuant to Condition D.15(4) to calculate the estimated monetary path payment requirement, along with the estimated annual hours of operation of power augmentation technologies and of non-base load power plants for Unit 2. The Certificate Holder shall use the Year One Capacities and Year One Heat Rates that it reports for the facility pursuant to Condition D.15(5) to calculate whether it owes additional monetary path payments**.** [Amendment No. 7]

(a) The net carbon dioxide emissions rate for the base load gas plant shall not exceed 0.675 pounds of carbon dioxide per kilowatt-hour of net electric power output, with carbon dioxide emissions and net electric power output measured on a new and clean basis, as defined in OAR 345-001-0010.

(b) The net carbon dioxide emissions rate for Unit 2, and for incremental emissions of Unit 1 operating with power augmentation technologies that increase the capacity and heat rate of the facility above the capacity and heat rate that it can achieve as a base load gas plant on a new and clean basis ("power augmentation technologies") shall not exceed 0.675 pounds of carbon dioxide per kilowatt-hour of net electric power output, with carbon dioxide emissions and net electric power output measured on a new and clean basis, as the Department may modify such basis pursuant to Condition D.15(4)(d) and (g). [Amendment No. 7]

(c) When the Certificate Holder submits the Year One Test reports required in Condition D.15(5), it shall increase its monetary path payments if the calculation using reported data shows that the adjusted monetary path payment requirement exceeds the monetary path payment requirement for which the Certificate Holder had provided a bond or letter of credit before beginning construction, pursuant to Condition D.15(1). The Certificate Holder shall submit its calculations to the Department for verification.

(A) The Certificate Holder shall make the appropriate calculations and fully disburse any increased funds directly to The Climate Trust within 30 days of filing the Year One Test reports.

(B) In no case shall the Certificate Holder diminish the bond or letter of credit it provided before beginning construction or receive a refund from The Climate Trust based on the calculations made using the Year One Capacities and the Year One Heat Rates.

(4) The Certificate Holder shall include an affidavit certifying the heat rates and capacities reported in subsections (a**)**, (b), (e) and (f).

(a) Before beginning construction of the energy facility, the Certificate Holder shall notify the Council in writing of its final selection of a gas turbine vendor and heat recovery steam generator vendor and shall submit written design information to the Council sufficient to verify the base-load gas plant's designed new and clean heat rate (higher heating value) and its net power output at the average annual site condition.

(b) Before beginning construction of the energy facility, the Certificate Holder shall submit written design information to the Council sufficient to verify the facility's designed new and clean heat rate and its net power output at the average annual site condition when operating with power augmentation technologies.

(c) Before beginning construction of the energy facility, the Certificate Holder shall specify the estimated annual average hours that it expects to operate the power augmentation technologies.

(d) Upon a timely request by the Certificate Holder, the Department may approve modified parameters for testing the power augmentation technologies on a new and clean basis, pursuant to OAR 345-024-0590(1). The Department's approval of modified testing parameters for power augmentation technologies shall not require a site certificate amendment.

(e) Before beginning construction of Unit 2, the Certificate Holder shall notify the Council in writing of its final selection of the quantities and vendors for reciprocating engines and combustion turbine generators and shall submit written design information to the Council sufficient to verify the non-base load power plant's designed new and clean heat rate (higher heating value) and its net power output at the average annual site condition. [Amendment No. 7]

(f) Before beginning construction of Unit 2, the Certificate Holder shall specify the estimated annual average hours that it expects to operate each type of generating unit. The Certificate Holder may estimate annual average hours of operation in a manner consistent with OAR 345-001-0010(38). [Amendment No. 7]

(g) Upon a timely request by the Certificate Holder, the Department may approve modified parameters for testing the non-base load power plants of Unit 2 on a new and clean basis, pursuant to OAR 345-024-0590(1). The Department's approval of modified testing parameters for non-base load power plants shall not require a site certificate amendment. [Amendment No. 7]

(5) Within the first 12 months of commercial operation of each phase of the energy facility, the Certificate Holder shall conduct a 100-hour test at full power without power augmentation technologies ("Year One Test-1") and a test at full power with power augmentation technologies for Unit 1 ("Year One Test-2"). A 100-hour test performed for purposes of the Certificate Holder's commercial acceptance of the facility shall suffice to satisfy this condition in lieu of testing after beginning commercial operation. [Amendments No. 6 & 7]

(a) Year One Test-1 shall determine the actual heat rate ("Year One Heat Rate-1") and the net electric power output ("Year One Capacity-1") on a new and clean basis, without degradation, with the results adjusted for the average annual site condition for temperature, barometric pressure, and relative humidity, and using a rate of 117 pounds of carbon dioxide per million Btu of natural gas fuel pursuant to OAR 345-001-0010(35).

(b) Year One Test-2 shall determine the actual heat rate ("Year One Heat Rate-2") and net electric power output ("Year One Capacity-2") for the facility operating with power augmentation technologies, without degradation, with the results adjusted for the average annual site condition for temperature, barometric pressure and relative humidity, and using a rate of 117 pounds of carbon dioxide per million Btu of natural gas fuel pursuant to OAR 345-001-0010(35). The full power test shall be 100 hours duration unless the Department has approved a different duration pursuant to Condition (4)(d**)** or (4)(g). [Amendment No. 7]

(c) The Certificate Holder shall notify the Department at least 60 days before conducting the tests required in subsections (a) and (b) unless a shorter time is mutually agreed upon.

(d) Before conducting the tests required in subsections (a) and (b), the Certificate Holder shall, in a timely manner, provide to the Department a copy of the protocol for conducting the tests.

(e) Within two months after completing the Year One Tests, the Certificate Holder shall provide to the Council a report of the results of the Year One Tests.

(f) If the certificate holder elects to report all carbon dioxide emissions based on direct measurements pursuant to OAR 345-024-0590(5)(b), then the Year One Test for Unit 2 is

not required. However, if the Year One test is not performed, then the certificate holder must continue to report carbon dioxide emissions using actual measured emissions as reported to the Department of Environmental Quality or the U.S. Environmental Protection Agency for all subsequent five year periods over the life of Unit 2, and may not change its election to report based on new and clean heat rate in any subsequent five year period. [Amendment No. 7]

(g) If the Year One test is not performed for Unit 2 pursuant to subsection (f) of this condition, then the certificate holder shall report its net kWh generation and actual measured carbon dioxide emissions for the 12 month period following start of commercial operation of Unit 2. The certificate holder shall report the net kWh generation and actual carbon dioxide emissions for this period to the Department within two months of the end of the first 12 month period. The certificate holder shall use the net kWh generation and measured carbon dioxide emissions to perform the calculations to determine if supplemental monetary path payments are needed as set forth in Condition D.15(6). The certificate holder shall submit these calculations to the Department for verification as set forth in Condition D.15(7). [Amendment No. 7]

(6) If calculations pursuant to Condition D.15(7) demonstrate that the Certificate Holder must supplement its monetary path payments ("supplemental monetary path payment requirement"), the Certificate Holder shall provide a bond or letter of credit sufficient to meet the supplemental monetary path payment requirement within the time required by Condition D.15(7)(b). The bond or letter of credit shall not be subject to revocation before disbursement of the supplemental monetary path payment requirement. Alternately, the Certificate Holder may disburse in cash any such supplemental monetary path payments directly to The Climate Trust within the time required by Condition D.15(7). [Amendment No. 7]

(7) The Certificate Holder shall submit all supplemental monetary path payment requirement calculations and data to the Department for verification. [Amendment No. 7]

(a) Each five years after beginning commercial operation of Unit 1 ("Unit 1 five-year reporting period"), the Certificate Holder shall report to the Department the annual average hours Unit 1 operated with power augmentation technologies during that Unit 1 five-year reporting period, pursuant to OAR 345-024-0590(6). The Certificate Holder shall use the Year One Capacity-2 and Year One Heat Rate-2 that it reports for Unit 1 pursuant to Condition D.15(5)(b) to calculate whether it owes supplemental monetary path payments. The Certificate Holder shall submit Unit 1 five-year reports to the Department within 30 days of the anniversary date of beginning commercial operation of Unit 1. [Amendment No. 7]

(b) If the Department determines that Unit 1 exceeds the projected net total carbon dioxide emissions calculated pursuant to Conditions D.15(4) and D.15(5), prorated for

five years, during any Unit 1 five-year reporting period described in subsection (a), the Certificate Holder shall offset excess emissions for the specific reporting period according to subsection (A) and shall offset the estimated future excess emissions according to subsection (B), pursuant to OAR 345-024-0600(4). The Certificate Holder shall offset excess emissions using the monetary path as described in OAR 345-024-0710, except that contracting and selecting funds shall equal twenty (20) percent of the value of any offset funds up to the first $250,000 (in 2002 dollars) and 4.286 percent of the value of any offset funds in excess of $250,000 (in 2002 dollars). The Certificate Holder shall disburse the funds to The Climate Trust within 30 days after notification by the Department of the amount that the Certificate Holder owes. [Amendment No. 7]

(A) In determining the excess carbon dioxide emissions that the Certificate Holder must offset for a Unit 1 five-year period, the Department shall apply OAR 345-024-0600(4)(a). The Certificate Holder shall pay for the excess emissions at $0.85 per ton of carbon dioxide emissions (in 2002 dollars). The Department shall notify the Certificate Holder and The Climate Trust of the amount of payment required, using the monetary path, to offset excess emissions. [Amendments No. 6 & 7]

(B) The Department shall calculate estimated future excess emissions and notify the Certificate Holder of the amount of payment required, using the monetary path, to offset them. To estimate excess emissions for the remaining period of the deemed 30-year life of the facility, the Department shall use the parameters specified in OAR 345-024-0600(4)(b). The Certificate Holder shall pay for the estimated excess emissions at $ 0.85 per ton of carbon dioxide (in 2002 dollars). The Department shall notify the Certificate Holder of the amount of payment required, using the monetary path, to offset future excess emissions. [Amendments No. 6 & 7]

(c) At the time the Certificate Holder submits to the Department the information required by Condition D.15(4)(e) and (f), the Certificate Holder shall make the election required by OAR 345-024-0590(5)(b). The election shall apply for each reporting period required pursuant to subsections (d) and (e). [Amendment No. 7]

(d) Each five years after beginning commercial operation of Unit 2 ("Unit 2 five-year reporting period"), the Certificate Holder shall report to the Department the information required by either subsection A or B. The Certificate Holder shall submit Unit 2 five-year reports to the Department within 30 days of the anniversary date of beginning commercial operation of Unit 2. [Amendment No. 7]

(A) If the Certificate Holder has elected to calculate any excess emissions using annual average hours of operation and new and clean heat rates, the Certificate Holder shall report the annual average hours of operation of each generating unit within Unit 2 during that Unit 2 five-year reporting period, pursuant to OAR 345-024-0590(6). The Certificate Holder shall use the Year One Capacity-1 and Year One Heat Rate-1 that it reports for the corresponding generating units of Unit 2 pursuant

to Condition D.15(5)(a) to calculate whether it owes supplemental monetary path payments. [Amendment No. 7]

(B) If the Certificate Holder has elected to calculate any excess emissions using actual or measured carbon dioxide emissions as reported to either the Oregon Department of Environmental Quality or the U.S. Environmental Protection Agency pursuant to a mandatory carbon dioxide reporting requirement, the Certificate Holder shall submit to the Department the carbon dioxide reporting data and net kWh generation for that Unit 2 five-year reporting period and shall use that data to determine whether it owes supplemental monetary path payments. [Amendment No. 7]

(e) If the Department determines that Unit 2 exceeds the projected net total carbon dioxide emissions calculated pursuant to Conditions D.15(4) and D.15(5), prorated for five years, during any Unit 2 five-year reporting period described in subsection (d), the Certificate Holder shall offset excess emissions for the specific reporting period according to subsection (A) and shall offset the estimated future excess emissions according to subsection (B), pursuant to OAR 345-024-0600(4). The Certificate Holder shall offset excess emissions using the monetary path as described in OAR 345-024-0710, except that contracting and selecting funds shall equal twenty (20) percent of the value of any offset funds up to the first $250,000 (in 1st quarter 2010 dollars) and 4.286 percent of the value of any offset funds in excess of $250,000 (in 1st quarter 2010 dollars). The Certificate Holder shall disburse the funds to The Climate Trust within 30 days after notification by the Department of the amount that the Certificate Holder owes. [Amendment No. 7]

(A) In determining the excess carbon dioxide emissions that the Certificate Holder must offset for a Unit 2 five-year period, the Department shall apply OAR 345-024-0600(4)(a), unless the Certificate Holder has elected under OAR 245-024-0590(5) to utilize actual or measured carbon dioxide emissions as reported to either the Oregon Department of Environmental Quality or the U.S. Environmental Protection Agency pursuant to a mandatory carbon dioxide reporting requirement. The Certificate Holder shall pay for the excess emissions at $1.27 per ton of carbon dioxide emissions (in 1st Quarter 2010 dollars). The Department shall notify the Certificate Holder and The Climate Trust of the amount of payment required, using the monetary path, to offset excess emissions. [Amendment No. 7]

(B) The Department shall calculate estimated future excess emissions and notify the Certificate Holder of the amount of payment required, using the monetary path, to offset them. To estimate excess emissions for the remaining period of the deemed 30-year life of the facility, the Department shall use the parameters specified in OAR 345-024-0600(4)(b). The Certificate Holder shall pay for the estimated excess emissions at $1.27 per ton of carbon dioxide (in 1st quarter 2010 dollars). The

Department shall notify the Certificate Holder of the amount of payment required, using the monetary path, to offset future excess emissions. [Amendment No. 7]

(8) The combustion turbine for the base-load gas plant and power augmentation technologies and any combustion turbines constructed as part of Unit 2 shall be fueled solely with pipeline quality natural gas or with synthetic gas with a carbon content per million Btu no greater than pipeline-quality natural gas**.** Any reciprocating engines constructed as part of Unit 2 shall be fueled solely with pipeline quality natural gas or with synthetic gas with a carbon content per million Btu no greater than pipeline-quality natural gas, except that distillate fuel may be used for micro-pilot systems. [Amendment No. 7]

(9) With respect to incremental capacity and fuel consumption increases for which the Certificate Holder has not previously complied with the carbon dioxide standard, the Certificate Holder shall comply substantially with Conditions D.15(1) through D.15(8) in lieu of the Council's requiring an amendment, provided that:

(a) The Council determines, pursuant OAR 345-027-0050, that the Certificate Holder does not otherwise require an amendment, and further provided that:

(b) The Certificate Holder shall meet the appropriate carbon dioxide emissions standard and monetary offset rate in effect at the time the Council makes its determination pursuant to OAR 345-027-0050.

(10) Notwithstanding Conditions D.15(1) through d.15(9), if the Certificate Holder begins construction of the Port Westward to BPA Allston Substation Transmission Line, but no other part of the energy facility or other related or supporting facilities, the Certificate Holder shall not be required to comply with Conditions D.15(1) through D.15(9). The Certificate Holder shall comply with Conditions D.15(1) through D.15(9) in connection with construction of any part of the energy facility or related or supporting facilities other than the Port Westward to BPA Allston Substation Transmission Line.

(11) If the Certificate Holder begins construction of Phase 1, but not Phase 2, the Certificate Holder shall comply with Conditions D.15(1) through D.15(9) for Phase 1. If the Certificate Holder later begins construction of Phase 2, the Certificate Holder shall comply with Conditions D.15(1) through D.15(9)for Phase 2. [Amendment No. 1]

E. OTHER APPLICABLE REGULATORY REQUIREMENTS

E.1. REQUIREMENTS UNDER COUNCIL JURISDICTION

E.1.a. Noise

(1) During construction of the facility, the Certificate Holder shall schedule most heavy construction to occur during daylight hours. Construction work at night shall be limited to work inside buildings and other structures when possible.

(2) During construction of the facility, the Certificate Holder shall require contractors to equip all combustion engine-powered equipment with exhaust mufflers.

(3) During construction of the energy facility, transmission lines or other related or supporting facilities, the Certificate Holder shall establish a complaint response system at the construction manager's office to address noise complaints.

(4) Within six months after the start of commercial operation of the energy facility, the Certificate Holder shall retain a qualified noise specialist to measure noise levels associated with the energy facility operation ~~-~~when environmental conditions are expected to result in maximum sound propagation between the source and the receivers and when the energy facility is operating in a typical operations mode that produces maximum noise levels.

(a) The specialist shall measure noise levels at sites (1), (2), (5) and (6), as described in Exhibit X of the ASC, to determine if actual noise are within the levels specified in the applicable noise regulations in OAR 345-035-0035(1)(b)(B)(i).

(b) The Certificate Holder shall report the results of the noise evaluation to the Department.

(c) If actual noise do not comply with applicable DEQ regulations, the Certificate Holder shall take those actions necessary to comply with the regulations as soon as practicable.

(d) If initial measurements show that actual noise levels at site (5) by 7 dBA or more, the Certificate Holder shall measure the noise levels as specified in this condition and shall repeat the process outlined in subsections (a), (b), and (c) for site (5) within six months after completion of the initial measurements.

(5) The Certificate Holder shall install silencers on short duration noise sources (e.g. steam vents) from the heat recovery steam generator.

(6) The certificate holder shall confirm the PW1 noise level estimate at receiver 7 prior to the final design of PW2 and propose mitigation measures as necessary to ensure that the total PWGP noise levels do not exceed the limits specified in Table N-2 of the Final Order on Port Westward Amendment 7. [Amendment No. 7]

(7) Within six months after the start of commercial operation of PW2, the Certificate Holder shall retain a qualified noise specialist to measure noise levels associated with the PWGP energy facility operation (the operation of PW1 and PW2) ~~-~~during late night hours when environmental conditions are expected to result in maximum sound propagation between

the source and each receiver and when the entire energy facility is operating in a typical operations mode that produces maximum noise levels.

(a) The specialist shall measure noise levels at sites (1), (2), (5),(6), and (7), to determine if actual noise levels generated by the PWGP are within the levels shown on Table N-2 of the Final Order on Amendment 7. The noise levels at sites 1 and 2 shall be measured when the wind is either calm or out of a northerly direction but blowing no more than 10 mph. The noise levels at sites 5, 6 and 7 shall be measured when the wind is either calm or out of a southerly direction but blowing no more than 10 mph.

(b) The Certificate Holder shall report the results of the noise evaluation to the Department.

(c) If actual noise levels do not comply with applicable DEQ regulations, the Certificate Holder shall take those actions necessary to comply with the regulations as soon as practicable.

(d) If initial measurements at site (5) show that the hourly L_{50} noise level is 48 dBA or more with the Beaver Plant in operation or 47 dBA or more without the Beaver Plant in operation, the Certificate Holder shall repeat the process outlined in subsections (a), (b), and (c) at site (5) and (7) within six months after completion of the initial measurements. [Amendment No. 7]

(7) To address the concern that noise from any other noise source not associated with the PWGP or Beaver Plant have contributed to the results of the compliance noise measurements, the Certificate Holder may measure noise levels to determine if the operation of any other source has contributed to the compliance results. The Certificate Holder shall report the results of the noise evaluation to the Department indicating any adjustments to applicable noise limits consistent with OAR 340-035-0035(1)(b)(B)(i). [Amendment No. 7]

E.1.b. Wetlands and Removal/Fill Permit

(1) Before beginning construction of Phase 1 of the energy facility or the Port Westward to BPA Allston Substation Transmission Line, as appropriate, the Certificate Holder shall obtain a U.S. Army Corps of Engineers and Oregon Division of State Lands Joint Removal/Fill Permit substantially in the form of the Removal/Fill Permit in Attachment C; provided, that mitigation required under the Removal/Fill Permit shall allow for accommodation of Corps of Engineers mitigation requirements, subject to the concurrence of the Department, in consultation with the Division of State Lands and affected federal agencies. [Amendment No. 1]

(2) The Certificate Holder shall comply with state laws and rules applicable to the Removal/Fill Permit that are adopted in the future to the extent that such compliance is required under the respective statutes and rules.

(3) The Certificate Holder shall clearly stake the wetland boundary adjacent to the spoils disposal area and the wetland number 4 boundary adjacent to the construction laydown/staging areas in the vicinity of the energy facility and the wetland boundary adjacent to the Beaver Generating Plant laydown/staging area prior to any ground disturbing activity in corresponding areas, and shall maintain the staking until all ground-disturbing activities in the corresponding areas have been completed. The Certificate Holder shall instruct all contractors disposing of soil in the spoils disposal area and using the construction laydown/staging areas in the vicinity of the energy facility or at the Beaver Generating Plant laydown/staging area about the purpose of the staking and shall require them to avoid any impact to the wetlands. [Amendments No. 3 & 10]

E.1.c. Public Health and Safety

(1) If local public safety authorities notify the Certificate Holder and the Department that the operation of the energy facility is contributing significantly to ground level fogging or icing along public roads and is likely to pose a significant threat to public safety, the Certificate Holder shall cooperate with local public safety authorities regarding the posting of warning signs on affected roads and the implementation of other reasonable safety measures.

(2) The Certificate Holder shall design the transmission lines and backup electricity 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. [Amendment No. 1]

(3) The Certificate Holder shall design the transmission lines and backup electricity lines so that induced currents and voltage resulting from the transmission lines are as low as reasonably achievable. [Amendment No. 1]

(4) 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 transmission line.

(5) The Certificate Holder shall restore or mitigate the reception of radio and television at residences and commercial establishments in the primary reception area to the level present before operation of the transmission line at no cost to residents or businesses experiencing interference resulting from the transmission line.

(6) The Certificate Holder shall design, construct and operate the transmission lines and backup electricity lines in accordance with the requirements of the National Electrical Safety Code. [Amendment No. 1]

(7) 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 and backup electricity lines. [Amendment No. 1]

(8) At least 30 days before beginning preparation of detailed design and specifications for the electrical transmission line(s) and backup electricity line(s) or the natural gas pipelines, 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. [Amendments No. 1 & 5]

(9) With respect to the related or supporting natural gas pipelines, the Certificate Holder shall design, construct and operate the pipeline in accordance with the requirements of the U.S. Department of Transportation as set forth in Title 49, Code of Federal Regulations, Part 192. [Amendment No. 5]

E.1.d. Water Pollution Control Facilities Permit

(1) Before beginning commercial operation of Phase 1 of the energy facility, the Certificate Holder shall demonstrate that the DEQ has issued to the Certificate Holder a Water Pollution Control Facilities Permit, substantially in the form of Attachment B.1, allowing for on-site sanitary waste disposal. [Amendment No. 1]

(2) The Certificate Holder shall comply with state laws and rules applicable to Water Pollution Control Facilities Permits that are adopted in the future to the extent that such compliance is required under the respective statutes and rules.

F. CONDITIONS REQUIRED OR RECOMMENDED BY COUNCIL RULES

F.1. MANDATORY CONDITIONS IN SITE CERTIFICATES

Amendment of Site Certificate

(1) The Council shall not change the conditions of the Site Certificate except in accordance with the applicable provisions of OAR 345, Division 27, in effect on the date of the Council action.

Legal Description

(2) Before beginning construction of Phase 1 of the energy facility, the Certificate Holder shall submit to the Department a legal description of the site, except as provided in OAR 345-027-0023(6). [Amendment No. 1]

(a) The legal description of the site for purposes of beginning construction of Phase 1 may exclude the 180-foot wide strip (50 feet south and 130 feet north of an existing road) immediately north of Phase 1.

(b) The Certificate Holder shall notify the Department in writing if it is exercising the option to exclude the 180-foot wide strip from Phase 1.

(c) If the Certificate Holder excludes the strip from the legal description during Phase 1, the Certificate Holder shall submit to the Office, before beginning construction of Phase 2 of the energy facility, a legal description indicating whether the energy facility site for Phase 2 includes the 180-foot wide strip. [Amendment No. 2]

General Requirements

(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 Council issues the Site Certificate; and,

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

Construction Rights on Site

(4) Except as necessary for the initial survey or as otherwise allowed for transmission lines or pipelines in this condition, 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 condition, "construction rights" means the legal right to engage in construction activities. For 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 or create a clearing on a part of the site if:

(a) The Certificate Holder has construction rights on that part of the site; and,

(b) 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 the transmission line or pipeline occurs

during the Certificate Holder's negotiations to acquire construction rights on another part of the site.

For purposes of this condition, the "site" for purposes of beginning construction of Phase 1 may exclude the 180-foot wide strip (50feet south and 130 feet north of an existing road) immediately north of Phase 1. [Amendment No. 2]

Beginning and Completing Construction

(5) The Certificate Holder shall begin construction of the energy facility by November 8, 2006. Beginning construction of the Port Westward to BPA Allston Substation Transmission Line shall not satisfy this requirement. [Amendment No. 2]

(a) The Certificate Holder shall report promptly to the Department the date that it began construction of the facility, as defined in OAR 345-001-0010. In reporting the beginning of construction, the Certificate Holder shall briefly describe all work on the site performed before beginning construction, including work performed before the Council issued the Site Certificate and work performed to construct the Port Westward to BPA Allston Substation Transmission Line, and shall state the cost of that work, pursuant to OAR 345-026-0048. If the Certificate Holder constructs the energy facility in phases, the Certificate Holder shall report the beginning of construction of each phase. [Amendment No. 1]

(b) If the Certificate Holder begins construction of the Port Westward to BPA Allston Substation Transmission Line, as defined in OAR 345-001-0010, prior to beginning construction of the energy facility, it shall promptly report to the Department the date it began construction of the transmission line.

(6) The Certificate Holder shall complete construction of the facility by May 8, 2015. The completion of construction date is the day by which (1) the facility is substantially complete as defined by the Certificate Holder's construction contract documents; (2) acceptance testing is satisfactorily completed; and, (3) the energy facility is ready to commence continuous operation consistent with the Site Certificate. Completion of construction of the Port Westward to BPA Allston Substation Transmission Line separately shall not satisfy this requirement. [Amendments No. 2, 6, 8 & 9]

(a) The Certificate Holder shall report promptly to the Department the date it completed construction of the facility. If the Certificate Holder constructs the energy facility in phases, the Certificate Holder shall report the date of completion of each phase. [Amendment No. 1]

(b) If the Certificate Holder completes construction of the Port Westward to BPA Allston Substation Transmission Line separately before completing construction of the facility, it shall promptly report that date to the Department.

(c) Separate completion of construction of Port Westward to BPA Allston Substation Transmission Line shall be the date that PGE makes it available to the Summit/Westward Project to transmit energy.

(7) The Certificate Holder shall begin construction of the BESS by [Insert Date 3 years from Effective Date].

(8) The Certificate Holder shall compete construction of the BESS by [Insert Date 6 years from Effective Date].

F.2 OTHER CONDITIONS BY RULE

Incident Reports

(1) With respect to the related or supporting natural gas pipelines, the Certificate Holder shall submit to the Department copies of all incident reports required under 49 CFR §192.709 that involve the pipeline.

Rights-of-Way

-(2) Before beginning operation of the energy facility, the Certificate Holder shall submit to the Department a legal description of the permanent right-of-way where the Certificate Holder has built a pipeline or transmission line within an approved corridor. The site of the pipeline or transmission line subject to the Site Certificate is the area within the permanent right-of-way. However, if the Certificate Holder completes construction of the Port Westward to BPA Allston Substation Transmission Line before beginning construction of the energy facility, the Certificate Holder shall submit to the Department a legal description of the permanent right-of-way for that segment of that transmission line, notwithstanding OAR 345-027-0023(6).

Monitoring Programs

(3) 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 its ability to comply with any affected Site Certificate conditions.

Compliance Plans

(4) Before beginning construction of the facility, the Certificate Holder shall implement a plan that verifies compliance with all Site Certificate terms and conditions and applicable statutes and rules. The Certificate Holder shall submit a copy of the plan to the Department. The Certificate Holder shall document the compliance plan and maintain it for inspection by

the Department or the Council. However, if the Certificate Holder begins construction of the Port Westward to BPA Allston Substation Transmission Line before beginning construction of the energy facility, the applicable compliance plan shall relate to that phase of construction.

Reporting

(5) Within six months after beginning any construction, and every six months thereafter during construction of the energy facility and related or supporting facilities, the Certificate Holder shall submit a semi-annual construction progress report to the Council. In each construction progress report, the Certificate Holder shall describe any significant changes to major milestones for construction. When the reporting date coincides, the Certificate Holder may include the construction progress report within the annual report described in Condition F.2(6).

(6) The Certificate Holder shall, within 120 days after the end of each calendar year after beginning construction, submit an annual report to the Council that addresses the subjects listed in OAR 345-026-0080(2). The Council secretary and the Certificate Holder may, by mutual agreement, change the reporting date.

(7) To the extent that information required by OAR 345-026-0080(2) 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. The Council reserves the right to request full copies of such excerpted reports.

Schedule Modification

(8) The Certificate Holder shall promptly notify the Department of any changes in major milestones for construction, decommissioning, operation, or retirement schedules. Major milestones are those identified by the Certificate Holder in its construction, retirement or decommissioning plans.

Correspondence with Other State or Federal Agencies

(9) The Certificate Holder and the Department 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.

Notification of Incidents

(10) The Certificate Holder shall notify the Department 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.

G. GENERAL CONDITIONS

(1) The general arrangement of the Port Westward Generating Project shall be substantially as shown in the ASC.

(2) The Certificate Holder shall ensure that related or supporting facilities are constructed in the corridors described in this Order and as shown in ASC and in the manner described in this Order and the ASC.

(3) During construction and operation of the energy facility, the Certificate Holder shall house the combustion turbine in an enclosure that provides thermal insulation, acoustical attenuation, and fire extinguishing media containment and that would allow access for routine inspection and maintenance.

Successors and Assigns

(4) Before any transfer of ownership of the facility or ownership of the Certificate Holder, the Certificate Holder shall inform the Department of the proposed new owners. The requirements OAR 345-027-0100 shall apply to any transfer of ownership that requires a transfer of the Site Certificate.

Severability and Construction

(5) If any provision of this Site 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 Site Certificate did not contain the particular provision held to be invalid. In the event of a conflict between the conditions contained in the Site Certificate and the Council's Order, the conditions contained in this Site Certificate shall control.

Governing Law and Forum

(6) This Site Certificate shall be governed by the laws of the State of Oregon.

(7) Any litigation or arbitration arising out of this agreement shall be conducted in an appropriate forum in Oregon.

IN WITNESS WHEREOF, this Site Certificate has been executed by the State of Oregon, acting by and through its Energy Facility Siting Council, and Portland General Electric Company.

ENERGY FACILITY SITING COUNCIL

By: _____

~~W. Bryan Wolfe~~[Insert Name], Chair Date

PORTLAND GENERAL ELECTRIC COMPANY

By: _____

Date

ATTACHMENT A MEMORANDUM OF UNDERSTANDING: MONETARY PATH PAYMENT REQUIREMENT

ATTACHMENT B WATER POLLUTION CONTROL FACILITIES PERMIT (B.1) AND ANALYSIS (B.2)

ATTACHMENT C REMOVAL/FILL PERMIT

ATTACHMENT D PGE REQUEST FOR AMENDMENT 7, REVISED EXHIBIT P.8.1 (AS TRANSMITTED IN NOVEMBER 19, 2009 LETTER RICK TETZLOFF TO ADAM BLESS "PORT WESTWARD GENERATING PROJECT – REVISIONS TO REQUEST TO AMEND SITE CERTIFICATE (AMENDMENT 7) TO ADDRESS ODFW COMMENTS")

Attachment 8. Property Owners List

Property Owners List for the Port Westward Battery Energy Storage System Project

Taxlot Number	Owner	Street Address	City	State	Zip Code
8N4W1600 100	Port of Columbia Couty	PO Box 190	Columbia City	OR	97204
8N4W1600 200	Port of Columbia Couty	PO Box 190	Columbia City	OR	97204
8N4W1600 200	Cascade Kelly Holdings LLC	81200 Kallunki Road	Clatskanie	OR	97016
8N4W1500 500	Port of Columbia Couty	PO Box 190	Columbia City	OR	97204
8N4W1500 100	Port of Columbia Couty	PO Box 190	Columbia City	OR	97204
8N4W1500 600	Portland General Electric Company	121 SW Salmont Street	Portland	OR	97204
8N4W2200 1100	Port of Columbia Couty	PO Box 190	Columbia City	OR	97204
8N4W1500 200	Port of Columbia Couty	PO Box 190	Columbia City	OR	97018
8N4W1500 200	Port of Columbia Couty	PO Box 190	Columbia City	OR	97018

8N4W1600 100
8N4W1500 100
8N4W1500 500
8N4W1600 200
8N4W1500 200
8N4W1500 600
8N4W2200 1100

Site Location Map

Map Features

- Property Within 250 Feet of Sites
- Battery Storage Sites
- Property Boundary

0 500 1,000
Feet

N
W
E
S

Portland General Electric

Portland, Oregon

Properties Within 250 Feet of Project Sites

Port Westward Generating Project

Date:	Drawn By:	Rev.:
3/21/2019	J.B. Hoy	

Drawing File: J:\Biglow_Canyon\Maps\PW2_Battery_Property.mxd