

**U.S. DEPARTMENT OF ENERGY
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
NEPA DETERMINATION**



RECIPIENT: Portland General Electric

STATE: OR

PROJECT TITLE: Demonstration of Grid Services by a 380 MW Wind, Solar, and Battery Storage Combined Power Plant with Mixed Grid-Forming and Grid-Following Technologies

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA0002745	DE-EE0010651	GFO-0010651-001	

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:

Description:

A9 Information gathering, analysis, and dissemination

Information gathering (including, but not limited to, literature surveys, inventories, site visits, and audits), data analysis (including, but not limited to, computer modeling), document preparation (including, but not limited to, conceptual design, feasibility studies, and analytical energy supply and demand studies), and information dissemination (including, but not limited to, document publication and distribution, and classroom training and informational programs), but not including site characterization or environmental monitoring. (See also B3.1 of appendix B to this subpart.)

B1.7 Electronic equipment

Acquisition, installation, operation, modification, and removal of electricity transmission control and monitoring devices for grid demand and response, communication systems, data processing equipment, and similar electronic equipment.

B1.31 Installation or relocation of machinery and equipment

Installation or relocation and operation of machinery and equipment (including, but not limited to, laboratory equipment, electronic hardware, manufacturing machinery, maintenance equipment, and health and safety equipment), provided that uses of the installed or relocated items are consistent with the general missions of the receiving structure. Covered actions include modifications to an existing building, within or contiguous to a previously disturbed or developed area, that are necessary for equipment installation and relocation. Such modifications would not appreciably increase the footprint or height of the existing building or have the potential to cause significant changes to the type and magnitude of environmental impacts.

B3.6 Small-scale research and development, laboratory operations, and pilot projects

Siting, construction, modification, operation, and decommissioning of facilities for smallscale research and development projects; conventional laboratory operations (such as preparation of chemical standards and sample analysis); and small-scale pilot projects (generally less than 2 years) frequently conducted to verify a concept before demonstration actions, provided that construction or modification would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible). Not included in this category are demonstration actions, meaning actions that are undertaken at a scale to show whether a technology would be viable on a larger scale and suitable for commercial deployment.

Rationale for determination:

B4.6 Additions and modifications to transmission facilities

Additions or modifications to electric power transmission facilities within a previously disturbed or developed facility area. Covered actions include, but are not limited to, switchyard rock grounding upgrades, secondary containment projects, paving projects, seismic upgrading, tower modifications, load-shaping projects (such as the installation and use of flywheels and battery arrays), changing insulators, and replacement of poles, circuit breakers, conductors, transformers, and crossarms.

The U.S. Department of Energy (DOE) is proposing to provide funding to Portland General Electric (GE) for the testing and demonstration of a grid-tied wind and battery electrical generation system. Project activities would include the installation of a battery energy storage system (BESS) and associated equipment; modification and operation of electrical transmission control devices; and electrical grid design, development, modeling, testing, and data analysis.

Design and development of the proposed electrical grid components would occur at the University of Texas (UT) (Austin, TX), GE Research (Niskayuna, NY), GE Grid Solutions (Atlanta, GA), GE Energy Consulting (Schenectady, NY), GE Hybrids (Niskayuna, NY), and GE Renewables (Salem, VA).

Computer modeling would occur at the Pacific Northwest National Laboratory (PNNL) (Richland, WA), Maseeh

College of Engineering and Computer Science (Maseeh) (Portland, OR), and GE Energy Consulting. Testing and validation of computer simulations would occur at PNNL, UT, GE Research, GE Grid Solutions, GE Energy Consulting, GE Hybrids, GE Renewables, and GE Renewables Lab (Lubbock, TX).

Data analysis would occur at Maseeh, GE Research, GE Grid Solutions, GE Hybrids, GE Renewables, and GE Renewables Lab.

All facilities at the above locations are preexisting, purpose-built facilities for the type of work to be conducted for this award. Facility modifications would not be required.

The BESS would reside in standard shipping containers which would be placed on a concrete foundation, roughly 100 feet square, on previously disturbed ground within the boundaries of the Wheatridge Generating Facility (Lexington, OR), an existing solar and wind electricity generation facility. The installation site would be located outside of all identified flood hazard areas, and any necessary permits for facility modification would be obtained prior to construction.

The final demonstration of grid components, including transmission operation and modification, frequency and voltage regulation, and using mixed grid-following and grid-forming technologies, would occur at the Wheatridge Facility.

Project activities would involve hazards associated with routine construction activities, working in the heat, and working with electricity. Existing corporate, government, and university health, safety, and environmental policies and procedures would be followed at all facilities, including personnel training, proper personal protective equipment, engineering controls, monitoring, and internal assessments.

DOE has considered the scale, duration, and nature of proposed activities to determine potential impacts on resources, including those of an ecological, historical, cultural, and socioeconomic nature. DOE does not anticipate impacts on these resources which would be considered significant or require DOE to consult with other agencies or stakeholders.

Any work proposed to be conducted at a federal facility may be subject to additional NEPA review by the cognizant federal official and must meet the applicable health and safety requirements of the facility.

NEPA PROVISION

DOE has made a final NEPA determination.

Include the following condition in the financial assistance agreement:

If, during project activities, historic properties or resources are discovered or there are unanticipated effects on historic properties located within a project's footprint after the undertaking has been initiated, the Recipient must immediately cease all operations and contact their DOE Project Officer and GONEPA@ee.doe.gov.

Notes:

Solar Energy Technology Office (SETO)
NEPA review completed by Andrew McClellan, 2 August 2023

FOR CATEGORICAL EXCLUSION DETERMINATIONS

The proposed action (or the part of the proposal defined in the Rationale above) fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D. To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the

environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

There are no extraordinary circumstances related to the proposed action that may affect the significance of the environmental effects of the proposal.

The proposed action has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

The proposed action is categorically excluded from further NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  NEPA Compliance Officer Date: 8/4/2023

FIELD OFFICE MANAGER DETERMINATION

- Field Office Manager review not required
- Field Office Manager review required

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____ Date: _____
Field Office Manager