

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



RECIPIENT: Washington State University

STATE: WA

PROJECT TITLE : Resilient Communities via Risk-driven Infrastructure Planning and Automated Restoration (Recuperat)

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-EE0010424	GFO-0010424-001	GO10424

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.)

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 activities 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 federal funding to Washington State University (WSU) to design and test resilience-oriented grid technology in an underserved community of Rockford, IL. Development of methods and algorithms for the proposed technology would involve risk-based community resilience planning and layered decision-making architecture aimed at enabling automated restoration through an intentional and flexible-boundary islanding control design. The proposed technology via associated controller hardware would be deployed at various field-testing sites for use with solar photovoltaic (PV) energy and storage systems.

The types of activities associated with the proposed project would include data analysis, computer modeling, preliminary engineering/design, laboratory research (consisting of hardware-in-loop (HIL) performance simulations), and field testing of the proposed technology. The project would consist of three Budget Periods (BPs). BP1 and BP2 would focus on outreach as well as design and laboratory testing of the technology. BP2 would also include a concept field demonstration on a Commonwealth Edison Company (ComEd) outdoor testbed. Field testing of the technology on an existing ComEd distribution feeder in the City of Rockford (City) would be completed in BP3.

Project management and research activities would occur on WSU's campus (Pullman, WA). The Pacific Northwest National Laboratory (PNNL; Richland, WA) would conduct data analysis and computer modeling activities. Community engagement and outreach activities would be facilitated by the Region 1 Planning Council at local City government facilities. Eaton Research Labs would be responsible for technology development and laboratory testing at their facility on the National Renewable Energy Laboratory's (NREL; Golden, CO) campus as well as at an existing facility in Raleigh, NC.

ComEd's Maywood Tech Center (MTC; Maywood, IL) would be the location of HIL validation and concept field demonstration testing. More specifically, ComEd's MTC contains a Grid Integration and Technology (GrIT) indoor lab

that is interconnected with the Maywood Outdoor Advanced Test Bed (MOAT). HIL and all field-testing activities would involve the installation of 154-millimeter (mm) x 210 mm x 50.8 mm industrial computational nodes. These devices would be installed indoors at GrIT and incorporated onto the existing rack or adjacent to other MOAT equipment. Field testing activities would also occur at a 12 kilovolt (kV) ComEd distribution feeder within the city. The industrial computational nodes would be installed entirely within the existing solar PV and battery energy storage system (BESS) infrastructure, either indoors on the rack or outdoors within an enclosure. There is also a possibility of installation activities occurring on existing utilities within a city right-of-way (ROW).

No new construction or ground-disturbance would result from project activities as all installations would be confined to areas of previous utility development and the equipment to be installed is limited to small hardware devices appended to existing surfaces/structures. If equipment installation activities are to be conducted using existing infrastructure within a city ROW, a ROW permit would be obtained from the local municipality if proposed installation activities cannot be covered by ComEd's existing ROW permit. No other permits, licenses, or authorizations would be required for the proposed activities. Project work would be performed at facilities that are purpose-built to accommodate the type of proposed installation and testing work. No change in the use or mission of existing facilities would arise out of this effort.

Project activities would involve typical hazards associated with working on electrical equipment. Existing health, safety, and environmental policies and procedures would be followed to mitigate hazards to acceptable levels. All activities would comply with existing federal, state, and local laws and regulations.

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. A diversity, equity, and inclusion (DEI) plan would be implemented to encourage the inclusion of individuals from underrepresented groups in fields of science, technology, engineering, and mathematics (STEM).

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.

Notes:

Solar Energy Technologies Office (SETO)
NEPA review completed by Corrin MacLuckie, 05/09/2023

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: _____



Signed By: **Andrew Montano**

NEPA Compliance Officer

Date: _____

5/9/2023

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: _____

Field Office Manager

Date: _____