

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



**RECIPIENT:** GE Research

**STATE:** NY

**PROJECT TITLE :** A Modular and Flexible Multi-terminal Power Converter with Grid-Forming Capability for Integrated PV Solar and Battery Energy Storage

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0002437	DE-EE0009633	GFO-0009633-001	

**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:

<b>A9 Information gathering, analysis, and dissemination</b>	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.)
<b>B3.6 Small-scale research and development, laboratory operations, and pilot projects</b>	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:

The U.S. Department of Energy (DOE) is proposing to provide funding to General Electric (GE) Research to design, fabricate, and test a modular energy storage system for solar photovoltaic (PV) applications. The resulting prototype device would integrate power conversion, thermal management, controls, and communications into a single compact enclosure.

Award activities would include preliminary design and engineering, device fabrication, and device testing in laboratory and outdoor settings. Design and fabrication work would occur in controlled laboratory settings at the GE campus in Niskayuna, NY. Testing in laboratory settings would occur at GE and Sandia National Laboratory (SNL) (Albuquerque, NM) facilities. Outdoor testing would occur at the GE Hybrid Renewables Energy Storage Facility (ESF) test pad located in the GE campus. Outdoor testing would involve handling and use of the prototype device, battery racks, a solar (PV) array, and transformer. The prototype device would be tested in laboratory settings to identify and resolve any issues prior to any outdoor testing. Other award activities would include meetings, research, document preparation, and development of models and plans for productization.

The GE and SNL research and development facilities are preexisting purpose-built facilities for the type of work to be conducted for this project. Modifications would not be required for any facility. Project activities would involve the handling of hazardous materials, including lithium ion batteries, printed circuit boards, coolants, metals, and industrial solvents. Handling of such materials would occur in laboratory settings for design, fabrication, and laboratory-testing activities. Outdoor testing activities that would involve the use of hazardous materials would be performed in a manner that does not pose risks to the public. All handling of hazardous materials would be done in accordance with existing federal, state, and local laws and regulations. Existing corporate and government health, safety, and environmental policies and procedures consistent with industry-standard best practices would be followed at all facilities, including: employee training, proper personal protective equipment (PPE), engineering controls, monitoring, and internal assessments.

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)

This NEPA determination does not require a tailored NEPA Provision.

NEPA review completed by Dan Cahill, 11/5/2021.

## 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: \_\_\_\_\_

 Electronically  
Signed By: Kristin Kerwin

NEPA Compliance Officer

Date: 11/5/2021

## 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: \_\_\_\_\_