

PMC-ND

(1.08.09.13)

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



RECIPIENT: Commonwealth Edison

STATE: IL

PROJECT TITLE : Microgrid-Integrated Solar-Storage Technology (MISST)

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|--|--------------------------------------|----------------------------|-------------------|
| Funding Opportunity Announcement Number | Procurement Instrument Number | NEPA Control Number | CID Number |
| DE-FOA-0001108 | DE-EE0007166 | GFO-0007166-002 | |

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Order 451.1A), 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:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to the Commonwealth Edison Company (ComEd) to address availability and variability issues inherent in solar photovoltaic (PV) technology by utilizing smart inverters for solar PV/battery storage and working synergistically with other components within a microgrid community.

The proposed project would design, develop, deploy, and demonstrate a Microgrid-Integrated Solar-Storage Technology (MISST) comprised of a solar PV array alongside a battery energy storage system (BESS). The MISST would be integrated into the Bronzeville Community Microgrid located in Chicago, IL; however, the sites where equipment installations would occur have yet to be identified.

A previous NEPA Determination (GFO-0007166-001; CX A9, B3.6; 12/22/15) reviewed tasks and subtasks associated with Budget Period 1 only, which did not include any deployment or demonstration activities. This NEPA Determination is to review additional engineering design and technology development activities associated with Budget Periods 2 and 3, including all remaining subtasks of Tasks 2 and 3, and Subtask 4.3. Excluded from this review are Subtasks 4.4-4.6, Subtasks 5.3-5.5, and Subtasks 6.3-6.6, which will remain restricted until all locations of the proposed PV and BESS installations have been identified and additional site-specific information is submitted for further NEPA review.

The types of activities associated with Tasks 2 and 3 include project planning, data analysis, computer modeling, preliminary engineering and design, and laboratory research and development. All project management including site identification and coordination with state/local agencies responsible for the required permitting of proposed project activities (Subtask 4.3) would be based at ComEd offices in Oakbrook Terrace, IL. Activities associated with Subtasks 2.3-2.5 would include smart inverter algorithm and controller testing to be conducted within a Real-Time Digital Simulation laboratory at ComEd's training center in Chicago, IL. In support of the proposed research, 3rd party vendor Dynapower would conduct Factory Acceptance Tests of their smart inverter at their commercial facility in South Burlington, VT. Activities associated with Subtask 3.3 would include implementing and validating improvements to the Microgrid Master Controller (MMC) initiated in Budget Period 1 by the project team. Development of smart inverter technology and the MMC would occur at Illinois Institute of Technology in Chicago, IL. Additional MMC development, data collection, and analysis would take place at University of Denver in Denver, CO. Integration and testing of the MMC would be carried out by 3rd party vendor Siemens at their existing factory in Minneapolis, MN. No change in the use, mission or operation of existing facilities would arise out of these efforts, which would not involve the procurement and installation of new equipment, outdoor work, or any construction activities.

Argonne National Laboratory in Lemont, IL would provide system analysis and test plans. The National Renewable Laboratory in Golden, CO would undertake economic analysis and modeling. Any work proposed to be conducted at a DOE laboratory may be subject to additional NEPA review by the cognizant DOE NEPA Compliance Officer for the specific DOE laboratory prior to initiating such work. Further, any work conducted at a DOE laboratory must meet the laboratory's health and safety requirements.

Based on the review of the proposal, DOE has determined that tasks 1-3, 4.1, 4.2, 4.3, 5.1, 5.2, 6.1 and 6.2 fit within the class of action(s) and the integral elements of Appendix B to Subpart D of 10 CFR 1021 outlined in the DOE categorical exclusion(s) selected above. DOE has also determined that: (1) there are no extraordinary circumstances (as defined by 10 CFR 1021.410(2)) related to the proposal that may affect the significance of the environmental effects of the proposal; (2) the proposal has not been segmented to meet the definition of a categorical exclusion; and (3) the proposal is not connected to other actions with potentially significant impacts, related to other proposals with cumulatively significant actions, or an improper interim action. The above identified tasks and subtasks are categorically excluded from further NEPA review.

NEPA PROVISION

DOE has made a conditional NEPA determination for this award, and funding for certain tasks under this award is contingent upon the final NEPA determination.

Insert the following language in the award:

You are restricted from taking any action using federal funds, which would have an adverse affect on the environment or limit the choice of reasonable alternatives prior to DOE/NNSA providing either a NEPA clearance or a final NEPA decision regarding the project.

Prohibited actions include:

Subtask 4.4: Procurement of major equipment for the high-power solar PV system

Subtask 4.5: Installation of the high-power solar PV system

Subtask 4.6: Test and commission the high-power solar PV system

Subtask 5.3: Procurement of major equipment for the BESS

Subtask 5.4: Installation of the BESS

Subtask 5.5: Test and commission the BESS

Subtask 6.3: Collect Operation Data

Subtask 6.4: Analyze Operation Data and Report Results

Subtask 6.5: Documentation and dissemination of lessons learned

Subtask 6.6: Documentation and dissemination of scaling up, interconnection review, and approval processes and methodologies

This restriction does not preclude you from:

Task 1: Further Develop the MISST solution

Task 2: Further Develop the Smart Inverter Technology

Task 3: Enhance Microgrid Master Controller (MCC)

Subtask 4.1: Site Selection for PV installations

Subtask 4.2: Engineering and design for the installation of the high-power PV system

Subtask 4.3: Acquisition of necessary permits

Subtask 5.1: Site Selection for BESS

Subtask 5.2: Engineering, design, and LCOE analysis for the installation of the Bess and Acquisition of necessary permits

Subtask 6.1: Prepare Data Collection Plan

Subtask 6.2: Establish Performance Metrics Targets

If you move forward with activities that are not authorized for federal funding by the DOE Contracting Officer in advance of the final NEPA decision, you are doing so at risk of not receiving federal funding and such costs may not be recognized as allowable cost share.

Insert the following language in the award:

You are required to:

Any work proposed to be conducted at a DOE laboratory may be subject to additional NEPA review by the cognizant DOE NEPA Compliance Officer for the specific DOE laboratory prior to initiating such work. Further, any work conducted at a DOE laboratory must meet the laboratory's health and safety requirements.

Note to Specialist :

Solar Energy Technologies Office

This NEPA determination requires a tailored NEPA Provision.

NEPA review completed by Whitney Doss, 3/13/2018

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____

 Electronically Signed By: **Kristin Kerwin**
NEPA Compliance Officer

Date: 3/13/2018

FIELD OFFICE MANAGER DETERMINATION

Field Office Manager review required

NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:

- Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
- Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.

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

Field Office Manager's Signature: _____

Field Office Manager

Date: _____