

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),

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001108	DE-EE0007166	GFO-0007166-003	G07166

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:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to the Commonwealth Edison Company (ComEd) to design, develop, deploy, and demonstrate a state-of-the-art "Microgrid-Integrated Solar-Storage Technology" (MISST) in the Bronzeville Community Microgrid (BCM) of Chicago, IL. The MISST involves utilizing smart inverters for solar photovoltaic (PV) and battery storage along with enhancing the existing microgrid master controller (MMC), a software platform which allows for these resources to work synergistically with other microgrid components. The overarching aim of the project is to address availability and variability issues inherent in solar PV technology.

The proposed project is comprised of three Budget Periods (BP). Two conditional NEPA Determinations have been completed for this award previously. The first (GFO-0007166-001), completed in December 2015, analyzed tasks and subtasks associated with BP1 only, which did not include any deployment or demonstration activities. The second (GFO-0007166-002), completed in March 2018, analyzed additional engineering design and technology development activities associated with BP2 and BP3, but conditioned deployment and demonstration activities on further NEPA review because there was not enough information available to conduct a meaningful review of the potential impacts. Specifically, the activities requiring additional NEPA review included the procurement, installation, testing, and commissioning of rooftop PV and battery energy storage system (BESS) equipment to be followed by data collection and operational analyses.

During the course of BP2, both of the originally proposed equipment installations (rooftop PV arrays and a BESS) were completed independently by the Recipient and in advance of NEPA review of these activities. Consequently, DOE is no longer proposing to provide funding to those activities. At this time, DOE is proposing to provide federal funding to the project to move forward into BP3 with a revised Statement of Project Objectives (SOPO). BP3 has been re-centered on MMC development as a key contribution to the practical integration of MISST in both the BMC and conceptual future distribution systems. This final NEPA Determination applies to the revised proposed BP3 tasks:

- Task 7: Development of the Microgrid Master Controller (MMC)
- Task 8: Electrical System integration (ESI)
- Task 9: IT System Integration (ITSI) – communications and cybersecurity
- Task 10: Hardware-in-The-Loop (HIL) testing of the MMC and Microgrid
- Task 11: Preliminary testing of BCM Islanding
- Task 12: Collect Data and Conduct Analyses (Operation)

Activities associated with Tasks 7-12 would be limited to data analysis, computer modeling, software development and integration, and small-scale laboratory testing on existing HIL equipment. None of the remaining project tasks would involve the installation and deployment of any new hardware or equipment; BP3 is principally focused on advancing the MMC software. The majority of BP3 work would occur at previously reviewed office and test lab locations. New locations at which project work would occur include various Deloitte offices around the U.S. and in Calgary, Canada (strictly desktop based analyses) and Quanta Technology research facilities in Raleigh, NC and Toronto, Canada (software development and in-lab testing). No change in the use, mission, or operation of existing facilities would arise out of these efforts.

Since practical MMC development and testing would involve integrating the software across the entirety of BCM assets, BP3 work would unavoidably involve the use of the rooftop PV/BESS installations which have been excluded from the scope of DOE funding. These are now existing resources within the BCM. However, proceeding with the remainder of project tasks as revised to encompass broader research applications does not depend on these prior installations. BP3 work would have independent utility because the results would inform potential applications of the control system in similar urban communities regardless of the presence of specific microgrid assets.

NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

Solar Energy Technologies Office

This NEPA determination does not require a tailored NEPA Provision.

NEPA review completed by Whitney Doss Donoghue, 9/4/2019

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.

DOE has determined that work to be carried out outside of the United States, its territories and possessions is exempt from further review pursuant to Section 5.1.1 of the DOE Final Guidelines for Implementation of Executive Order 12114; "Environmental Effects Abroad of Major Federal Actions."

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: 9/5/2019

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: _____