

PMC-ND

(1.08.09.13)

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



**RECIPIENT:** The University of Central Florida Board of Trustees

**STATE:** FL

**PROJECT TITLE** : LCOE reduction through proactively optimized monitoring of PV systems

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0001654	DE-EE0008157	GFO-0008157-001	GO8157

**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.)

**B5.15 Small-scale renewable energy research and development and pilot projects**

Small-scale renewable energy research and development projects and small-scale pilot projects, provided that the projects are located within a previously disturbed or developed area. Covered actions would be in accordance with applicable requirements (such as local land use and zoning requirements) in the proposed project area and would incorporate appropriate control technologies and best management practices.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to the University of Central Florida (UCF) to develop and install string monitoring equipment in solar photovoltaic (PV) fields to demonstrate the value of a high-resolution monitoring system with diagnostic-prognostic capability and determine its impact on the levelized cost of energy.

The proposed project would involve the installation and testing of monitoring equipment at three existing PV fields (two dedicated test sites, one commercial production site) and data collection over a four year period. Associated activities would include data analysis, computer modeling, software development, hardware design and preliminary engineering, site selection and instrumentation, and outreach. Office-based work on the data streams from installed equipment would be undertaken at UCF in Orlando, FL and Sandia National Laboratories in Albuquerque, NM.

Test field site deployment during Budget Period 1 would occur at UCF's Florida Solar Energy Center (FSEC) in Cocoa, FL and Sandia National Laboratories. Both facilities were purpose-built for the type of activities being proposed, which would include the installation of a 24 module array within a previously developed PV test area. Instrumentation on the arrays would consist of one commercially available PV in situ monitoring unit (approximately 3 ft. by 2 ft. by 1 ft.) capable of monitoring up to 16 strings. At FSEC, less than 300 ft. of wire would be required to make connections between the test array and monitoring equipment. At Sandia, data monitoring would make use of existing infrastructure. No new permits, licenses, or additional authorizations would be required to perform these activities.

Production field site deployment during Budget Period 2 would occur at one of the currently operational PV plants owned by project partner NextEra Energy Resources. The specific facility (within the continental U.S.) has not yet been identified and would be selected during BP1. Proposed activities at the selected site would not include the installation of new PV arrays. Instrumentation would be installed on existing arrays at this site, and would consist of three commercially available PV string monitoring units (approximately 3 ft. by 2 ft. by 1 ft.) capable of monitoring up to 48 strings. Less than 1500 ft. of wire would be required to make connections between the array and monitoring equipment, which would reside within a previously developed area containing arrays and ancillary equipment. String hardware and associated software would be integrated with systems already in place at this facility without resulting in any change to its use, mission, or operation. The facility would not need additional permits for the proposed activities. Although the location has not been finalized, due to project work occurring entirely on previously disturbed land, in addition to the minimal amount of equipment and modifications required to implement the proposed monitoring

system, DOE has determined that the proposed activities do not have the potential to impact any sensitive resources.

The proposed field site activities would be performed by properly trained personnel equipped with appropriate Personal Protective Equipment. Electrical shock hazards associated with work on PV modules and inverters would be mitigated by implementing industry standard health and safety procedures, including de-energizing system equipment while work is in progress.

Non-hazardous waste generated by the proposed project such as packaging materials and excess wire would be collected and disposed of following established site procedures. At the end of the project, PV string monitoring equipment at the test field sites would be dedicated to new projects for use until the equipment lifetime is reached. Equipment at NextEra would either remain installed or be decommissioned using standard disposition methods. No siting, construction, or major expansion of waste storage, disposal, recovery, or treatment actions/facilities would be required.

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 the proposal fits 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. This proposal is categorically excluded from further NEPA review.

**NEPA PROVISION**

DOE has made a final NEPA determination for this award

Insert the following language in the award:

If the Recipient intends to make changes to the scope or objective of this project, the Recipient is required to contact the Project Officer, identified in Block 15 of the Assistance Agreement before proceeding. The Recipient must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved. If the Recipient moves forward with activities that are not authorized for Federal funding by the DOE Contracting Officer in advance of a final NEPA decision, the Recipient is 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:

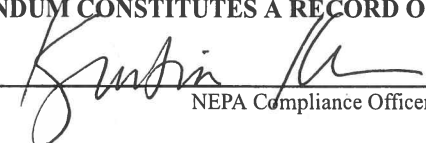
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Note to Specialist :

Solar Energy Technologies Office  
This NEPA determination requires a tailored NEPA Provision.  
NEPA review completed by Whitney Doss, 9/28/2017

**SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.**

NEPA Compliance Officer Signature:

  
NEPA Compliance Officer

Date:

9/28/2017

**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: \_\_\_\_\_