

PMC-EF2a

(2.04.02)

**U.S. DEPARTMENT OF ENERGY  
EERE PROJECT MANAGEMENT CENTER  
NEPA DETERMINATION**



**RECIPIENT:** Fraunhofer USA, Inc. Center for Sustainable Energy

**STATE:** MA

**PROJECT TITLE :** Plug & Play Solar PV for American Homes

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0000653	DE-EE0006035	GFO-0006035-001	GO6035

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:

<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.

**Rational for determination:**

The U.S. Department of Energy (DOE) is proposing to provide federal funding to the Fraunhofer USA Inc., Center for Sustainable Energy Systems(Fraunhofer) to research, develop and design ways to reduce the installed cost of residential solar photovoltaic (PV) systems by developing a residential "Plug and Play" solar PV system. The proposed "Plug and Play" system would set up quickly and connect to the power grid easily, while still meeting building and electrical codes, thus reducing installation time and costs. Funding would be used to research, develop and test a prototype "Plug and Play" PV system with a simplified electrical installation, a rooftop mounting system that requires zero or few penetrations, and a lighter weight PV array. Outreach and research activities would occur with various utilities and jurisdictional entities, such as cities, to research ways to streamline the inspection, permitting and interconnection approval process. In addition, the Fraunhofer would work with the national codes and standards community to identify, develop and incorporate technologies and standards into the proposed "Plug and Play" system that will enable the system to be UL listed and therefore not subject to local building inspections.

This NEPA determination applies to tasks in Budget Period 1 (BP1) which include activities such as information gathering, analysis, computer modeling, materials testing, preliminary prototype "Plug and Play" solar PV system design, and prototype "Plug and Play" solar PV system fabrication and testing. This NEPA determination does not apply to any tasks in Budget Periods 2-5 as they are not defined to the extent DOE can make a NEPA Determination.

To accomplish the proposed activities, Fraunhofer proposes to partner with Lumeta Solar; Petra Solar; Schletter Inc.; the City of Boston, Massachusetts; the Town of Rutland, Vermont; Green Mountain Power; the Center for Environmental Innovation in Roofing; Vermont Law School; Tufts University; and Sandia National Laboratories.

In Budget Period 1, research, development and testing activities would occur at two Fraunhofer research facilities; one located at 5 Channel Center, Boston, Massachusetts and the other at 5600-A University Blvd. SE, Albuquerque, New Mexico. The facility in Massachusetts has research laboratories, while the facility in New Mexico Fraunhofer has an outdoor solar PV test site. Activities would include bench-scale and laboratory material and electrical component tests, bench-scale and laboratory PV panel and inverter tests and outdoor testing of the prototype "Plug and Play" PV system.

In Budget Period 1, additional bench-scale and laboratory research, development and testing activities would be performed by Fraunhofer's proposed partners; Lumeta Solar, Petra Solar, Schletter Inc., Tufts University, and Sandia National Laboratories (Sandia) . Activities would include material and electrical component tests, PV panel and



inverter tests, and prototype PV module fabrication.

Fraunhofer and their partners have each completed an R&D questionnaire addressing the protocols for laboratory, facility and site safety, risk management and waste disposal. The laboratories and facilities comply with standard safety procedures and all processes and procedures are monitored by the Environmental Health and Safety staff. The laboratories and facilities have all applicable permits in place, and would not need additional permits for the proposed activities. All handling and disposal of gases, chemicals, wastes and liquid effluents comply with appropriate regulations. The laboratories and facilities are currently used for activities similar to the proposed activities.

All work completed at DOE National Laboratories (Sandia) may be subject to additional NEPA review by the appropriate DOE NEPA Compliance Officer.

Based on review of the project information and the above analysis, DOE has determined the Budget Period 1 research, development and testing activities associated with development of a "Plug and Play" solar PV system would not have a significant individual or cumulative impact to human health and/or environment. DOE has determined the proposed project is consistent with actions contained in DOE categorical exclusion A9 "information gathering, analysis and dissemination" and B3.6 "small-scale research and development, laboratory operations and pilot projects" and is 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:

Tasks and activities in Budget Periods 2-5

This restriction does not preclude you from:

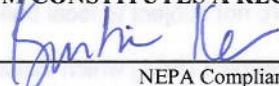
Tasks and activities in Budget Period 1

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.

Note to Specialist :

Obadiah Broughton 1/25/2013

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

NEPA Compliance Officer Signature:  Date: 1/28/2013  
NEPA Compliance Officer

**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: \_\_\_\_\_ Date: \_\_\_\_\_  
Field Office Manager