

PMC-ND

(1.08.09.13)

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

**RECIPIENT:** Fraunhofer USA Inc., Center for Sustainable Energy Systems**STATE:** MA**PROJECT TITLE** : Adhesive Mounting of Conventional PV Modules for Residential Solar

| | | | |
|--|--------------------------------------|----------------------------|-------------------|
| Funding Opportunity Announcement Number | Procurement Instrument Number | NEPA Control Number | CID Number |
| DE-FOA-0001654 | DE-EE0008173 | GFO-0008173-001 | |

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 Fraunhofer USA Inc., Center for Sustainable Energy Systems (Fraunhofer) to design, build, and test an adhesive-mounting concept for conventional framed and glass-glass photovoltaic (PV) modules.

The project involves laboratory-scale research and development, engineering design, computer modeling, and data analysis. Fraunhofer would develop an adhesive-mounting interface for securing PV modules to asphalt shingles. Flextronics Inc. personnel would leverage their product design and prototyping experience to create pre-commercial feasible prototypes in their Boston, MA Innovation Center location. These prototypes would be mounted on asphalt-shingled test roofs both in Fraunhofer's Boston facility and at Vivint's northern Sebastapol, CA facility. Conduct adhesive strength testing would occur in Fraunhofer's material characterization laboratory. Wind performance testing would occur at the San Diego Wind Testing Facility in San Diego, CA and fire characterization would occur at the Western Fire Center in Way Kelso, WA.

Hazards include trips and falls related to working on the test roof. Fraunhofer and Vivint have safety protocols that would be followed and safety guidelines such as described in the OSHA brochure regarding ladder safety would be adhered to. Hazards related to manufacturing of the PV modules and associated equipment hazards would be addressed through training of personnel on the use of personal protective equipment, machine guarding, and oversight of operating practices. Hazards at the Western Fire Center include loss of control of the test fire. Protocols have been developed to ensure safe fire testing operations. At the Wind Testing Facility, modules adhered to the roof may come off and become projectiles. Protocols have been developed to ensure safe operation. This includes placing test personnel in a protected area outside of the wind tunnel itself.

No change in the use, mission or operation of existing facilities would arise out of this effort. The facilities have all applicable permits in place, and would not need additional permits for the proposed activities.

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:

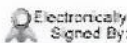
If the Recipient intends to make changes to the scope or objective of this project, the Recipient is required to contact the Project Officer, identified in Block 15 of the Assistance Agreement before proceeding. The Recipient must receive notification of approval from the DOE Contracting Officer prior 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.

Note to Specialist :

Solar Energy Technologies Office
This NEPA determination does not require a tailored NEPA provision.
Review completed by Chris Rowe on 8/10/2017

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:



Kristin Kerwin

Date:

8/10/2017

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:

Field Office Manager

Date:
