

PMC-ND

(1.08.09.13)

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

**RECIPIENT:** Tomark-Worthen LLC**STATE:** NH

**PROJECT TITLE** Cost-Efficient and Highly Weather-Resistant Solar Panel Backsheet Produced through Continuous Co-Extrusion Processing

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0001640	DE-EE0008143	GFO-0008143-001	

**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:

- |                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <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. |

Rationale for determination:

DOE is proposing to provide funding to Tomark-Worthen LLC to design, produce, test and evaluate a novel multi-layer photovoltaic backsheet manufactured through co-extrusion technology. The objective of this project is to improve both cost-efficiency and performance-life over the products currently on the market.

Project activities would include lab-scale development of backsheet materials, reliability and physical testing of sample materials, and production of the multi-layer backsheet at manufacturing scale and production of monolayer materials at the laboratory scale. Project activities would take place at Tomark-Worthen's facility in Nashua, New Hampshire, the U.S. Army Natick Soldier Research Development and Engineering Center (NSRDEC) in Natick, Massachusetts, the National Renewable Energy Laboratory (NREL) in Golden, Colorado, and Specialized Technology Resources (STR) in Enfield, Connecticut. Production of the multi-layer backsheet at manufacturing scale and the lab-scale production of monolayer materials would occur at the Tomark-Worthen manufacturing facility. Lab-scale development of backsheet material and physical testing of samples would occur at the NRSDEC facility. Reliability testing and evaluation of sample materials would take place at NREL. And, reliability testing, evaluation of sample materials and lamination of the backsheet into panels for testing would occur at STR's manufacturing facility. No modifications or new permits, additional licenses and/or authorizations would be necessary at any of the proposed locations. No change in the use, mission or operation of existing facilities would arise out of this effort.

Any work proposed to be conducted at a DOE laboratory or other federally-owned facility may be subject to additional NEPA review by the cognizant NEPA compliance authority for the specific facility prior to initiating such work. Further, any work conducted at a DOE laboratory or other federally-owned facility must meet the facility'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:

Any work proposed to be conducted at a DOE laboratory or other federally-owned facility may be subject to additional NEPA review by the cognizant NEPA compliance authority for the specific facility prior to initiating such work. Further, any work conducted at a DOE laboratory or other federally-owned facility must meet the facility's health and safety requirements.

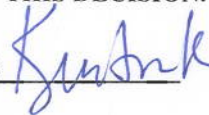
Note to Specialist :

Solar Energy Technologies Office  
This NEPA determination requires a tailored NEPA provision.

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

NEPA Compliance Officer Signature: \_\_\_\_\_

 Electronically Signed By: Kristin Kerwin  
NEPA Compliance Officer



Date: 8/10/2017

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