

PMC-ND  
(1.08.09.13)

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



RECIPIENT: Suniva, Inc.

STATE: GA

**PROJECT TITLE :** Innovative manufacturing technologies for low-cost, high efficiency PERC-based PV modules

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA- FOA-0001400	DE-EE0007581	GFO-0007581-001	

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:

The U.S. Department of Energy (DOE) is proposing to provide funding to Suniva Inc. (Suniva) to conduct research and development (R&D) on cost reduction of photovoltaic (PV) modules based on mono-passivated emitter rear contact (PERC) cells through the development of advanced screen-printed metallization to increase cell efficiency, and a bifacial cell structure that enables the use of thin wafers to reduce cost.

Suniva would establish a software model calibrated with baseline data from the manufacturing line to assess the impact of planned improvements. They would then develop an advanced screen-print metallization process. This would be followed by modifying the manufacturing equipment and the cell design with the goal to improve the yield. Finally, pilot production of bifacial PERC cells on thin wafers would be demonstrated. The work would occur at two Suniva, Inc. facilities; one in Norcross, GA and the other in Saginaw, MI. Computer simulation, wafer annealing and dielectric depositions would be performed at campus laboratory facilities at Georgia Tech in Atlanta, GA. The facilities in which the work would occur are purpose-built for the activities being proposed. No new or modified permits, construction of new facilities, or physical modifications to existing facilities would occur as a result of the proposed project.

The project would involve the use and handling of hazardous materials, including metal pastes, gases, acids, and industrial solvents. All such handling would occur in R&D laboratories at Suniva and Georgia Tech and in Suniva's production area. Suniva and Georgia Tech have dedicated hazardous material handling and disposal practices, so the project activities that involve these materials would pose no risk to the public. All hazardous materials would be managed in accordance with federal, state, and local environmental regulations. A limited amount of solid waste would be generated that would be sent to a municipal solid waste landfill.

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, 8/17/2016

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

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

 Electronically Signed By: Lori Gray  
NEPA Compliance Officer

Date: 8/17/2016

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