

PMC-ND
(1.08.09.13)

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



RECIPIENT:Board of Trustees of the Leland Stanford Junior University

STATE: CA

PROJECT TITLE : Low-Cost Scaffold-Reinforced Perovskite Solar Modules with Integrated Light Management

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001654	DE-EE0008154	GFO-0008154-001	

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 is proposing to provide funding to Board of Trustees of the Leland Stanford Junior University to design, fabricate, and conduct performance and reliability exposure studies of a new perovskite compound solar cell (CSC) module design.

Project activities include: designing and fabrication of lens arrays to determine optimal design; designing and fabricating a new CSC module architecture to shield the device and constituent layers from thermomechanical stresses and conducting performance and reliability indoor/outdoor exposure studies to demonstrate improved CSC module mechanical and thermal stability.

The design and fabrication of the lens arrays and new CSC modules and the indoor/outdoor exposure studies will occur at the University's Department of Materials Science and Engineering Building. In addition, outdoor exposure studies may also occur at the National Renewable Energy Laboratory. Outdoor exposure studies would occur at existing facilities and not require any equipment installation. All samples would be analyzed and disposed of in accordance with existing Stanford University waste handling and disposal policy.

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

The proposed project would require the use of small quantities of solvents and precursor chemicals used to fabricate devices. Lab workers are experienced and trained in proper use and disposal of these materials and existing university health and safety policies and procedures would be followed. Non-hazardous waste would be disposed of according to existing Stanford University approved waste handling and disposal policy.

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.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____

 **Lori Gray**
NEPA Compliance Officer

Lori Gray

Date: _____

9/5/2017

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: _____