

PMC-EF2a

(0402)

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



RECIPIENT: Stanford University

STATE: CA

**PROJECT TITLE :** In-Situ X-Ray Analysis of Rapid Thermal Processing for Thin-Film Solar Cells: Closing the Gap between Production and Laboratory Efficiency

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0000654	DE-EE0005951	GFO-0005951-001	GO5951

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>B1.31 Installation or relocation of machinery and equipment</b>	Installation or relocation and operation of machinery and equipment (including, but not limited to, laboratory equipment, electronic hardware, manufacturing machinery, maintenance equipment, and health and safety equipment), provided that uses of the installed or relocated items are consistent with the general missions of the receiving structure. Covered actions include modifications to an existing building, within or contiguous to a previously disturbed or developed area, that are necessary for equipment installation and relocation. Such modifications would not appreciably increase the footprint or height of the existing building or have the potential to cause significant changes to the type and magnitude of environmental impacts.
<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 Stanford University to conduct research and development activities that advance solar photovoltaic (PV) technology. DOE funding would be used for data collection, analysis and to design, fabricate and assemble a rapid-thermal-processing/X-ray diffraction and fluorescence tool/facility (RTD/XRD-F) to increase rapid thermal processing for the PV industry.

Laboratory work would be completed at the SLAC National Accelerator Laboratory (SLAC), located at 2575 Sand Hill Road, Menlo Park, California 94025 and the National Renewable Energy Lab (NREL), located at 15013 Denver West Parkway, Golden, Colorado 80401.

SLAC has completed an R&D questionnaire addressing the protocols in place for laboratory safety, risk management, chemical handling and waste disposal. SLAC complies with standard laboratory safety procedures and labs are inspected by staff and safety personnel. All handling and disposal of gases, chemicals and hazardous waste are executed by Environmental Health and Safety (EHS) personnel who comply with appropriate regulations of OSHA. SLAC operates under all applicable permits to conduct research. Minor renovations to an existing room would occur at SLAC to install the RTD/XRD-F tool, including two new chambers. No exterior alterations or groundbreaking would occur under this proposed project.

All other work associated with the proposed project will be conducted in the Field Test Laboratory Building (FTLB) and the Science & Technology Facility (S&TF) at NREL. All work completed at DOE National Laboratories, in this case NREL, is subject to NEPA review by the cognizant DOE site office.

Based on review of the project information and the above analysis, DOE has determined the research 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," B1.31 "installation or relocation of machinery and equipment," 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 final NEPA determination for this award

Insert the following language in the award:

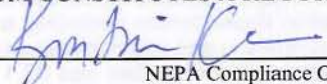
If you intend to make changes to the scope or objective of your project you are required to contact the Project Officer identified in Block 11 of the Notice of Financial Assistance Award before proceeding. You must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved.

Note to Specialist :

Kelly Daigle 11/20/2012

DOE Share: \$899,000  
Total Project Cost: \$899,000

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

NEPA Compliance Officer Signature:   
NEPA Compliance Officer

Date: 11/24/2012

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