

PMC-ND

(1.08.09.13)

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



**RECIPIENT:**Kimani Toussaint/University of Illinois at Urbana-Champaign

**STATE:** IL

**PROJECT TITLE** : Development of a Planar Focusing Collector for CSP

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0001268	DE-EE0007339	GFO-0007339-001	

**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 the University of Illinois at Urbana-Champaign (UIUC) to develop a planar focusing collector (PFC) as a potential lower cost alternative to the conventional parabolic trough concentrator used in concentrated solar power (CSP).

Activities associated with the proposed project would include design, fabrication, and characterization of a planar focusing collector. Design, fabrication, and basic characterization would be completed in the research and characterization facilities at UIUC in Urbana, IL and at the University of Michigan (UM) in Ann Arbor, MI. Further optical characterization would be completed at the Optical Characterization Laboratory in the Energy Systems Integration Facility at the National Renewable Energy Laboratory (NREL) in Golden, CO, while materials testing work would take place in the Field Test Laboratory Building, also located on campus at NREL. The facilities in which lab work would occur are purpose-built for the type of activities being proposed; therefore, no adverse impacts to sensitive resources are expected as a result of the proposed project. 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.

The proposed project would involve the use and handling of liquid nitrogen, class 2 to class 4 lasers, and corrosive chemicals such as hydrofluoric acid, sulfuric acid, hydrochloric acid, hydrogen peroxide, ammonium hydroxide, acetone, isopropyl alcohol, and methanol. All such handling would occur in-lab. Existing university health and safety policies and procedures would be followed including employee training, proper protective equipment, engineering controls, monitoring, and internal assessments to mitigate these hazards. Storage and disposal of the aforementioned solvents and other aromatics would be completed in accordance with and with the assistance of the UIUC Division of Research Safety (DRS). Other wastes would include Silicon wafer fragments, stamp materials, and elemental silver. Wafer fragments and stamp materials would be recycled when possible and disposed of through normal waste streams otherwise. Elemental silver would be stored and reused. No siting, construction or major expansion of waste storage, disposal, recovery, or treatment actions/facilities would be required.

Any work proposed to be conducted at a DOE laboratory may be subject to additional NEPA review by the cognizant



DOE NEPA Compliance Officer for the specific DOE laboratory prior to initiating such work. Further, any work conducted at a DOE laboratory must meet the laboratory's health and safety requirements.

Based on review of the project information and the above analysis, DOE has determined the proposed project would not have a significant individual or cumulative impact to human health and/or environment. DOE has determined that this project is consistent with actions outlined in DOE categorical exclusions A9 "Information gathering, analysis, and dissemination" and B3.6 "Small-scale research and development, laboratory operations, and pilot projects" and is therefore 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 may be subject to additional NEPA review by the cognizant DOE NEPA Compliance Officer for the specific DOE laboratory prior to initiating such work. Further, any work conducted at a DOE laboratory must meet the laboratory's health and safety requirements.

Note to Specialist :

Solar Energy Technology Office  
This NEPA determination requires a tailored NEPA provision.  
Review completed by Rebecca McCord 04/04/2016

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

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



Kristin Kerwin

NEPA Compliance Officer

Date: 4/6/2016

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