

PMC-ND

(1.08.09.13)

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



RECIPIENT: Oregon State University

STATE: OR

**PROJECT TITLE :** Microchannel Solar Receiver Development

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0001186	DE-EE0007108	GFO-0007108-001	

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.
<b>B5.15 Small-scale renewable energy research and development and pilot projects</b>	Small-scale renewable energy research and development projects and small-scale pilot projects, provided that the projects are located within a previously disturbed or developed area. Covered actions would be in accordance with applicable requirements (such as local land use and zoning requirements) in the proposed project area and would incorporate appropriate control technologies and best management practices.

## Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to Oregon State University (OSU) to develop the microchannel solar receiver (MSR) culminating in an on-sun test of a commercial scale receiver module with a surface area of approximately one square meter.

Proposed project activities would include a comprehensive review of suitable fabrication materials and bonding fabrication processes; a comprehensive redesign of the MSR, including thermal/fluidic design, mechanical design and cyclic thermal stress analyses; fabricating both a small-scale test article and two, one square meter test articles for on-sun testing; completing flow distribution testing and thermal cycling tests on the small-scale test article; developing a conceptual design for the commercial receiver and a production cost estimate for the receiver; developing a market assessment and commercialization plan; and completing on-sun testing of one square meter test articles.

To accomplish the proposed activities, OSU (Corvallis, OR) would partner with ECOKAP, University of California Davis (UCD) in Davis, CA and Sandia National Laboratory (SNL) in Albuquerque, NM. Proposed activities would consist of computer modeling, design and analysis, indoor bench scale lab work, and outdoor field testing. Computer modeling, design and analysis and indoor bench scale lab work would occur at ECOKAP, OSU and UCD. Outdoor field testing would occur at UCD and the National Solar Thermal Test Facility (NSTTF) at SNL. The facilities at which field testing 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 laboratories and facilities comply with standard safety procedures and all processes and procedures are monitored by the Environmental Health and Safety staff. The laboratories and facilities have all applicable permits in place, and would not need additional permits for the proposed activities. All handling and disposal of gases, chemicals, wastes and liquid effluents would comply with appropriate local, state and Federal regulations. No additional or new permits would be required as a result of the proposed project.



For all work conducted through DOE laboratories, project activities are subject to additional NEPA review by the cognizant NEPA Compliance Officer for the lab and would be required to meet the labs health and safety requirements.

Based on review of the project information and the above analysis, DOE has determined that the proposed project 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," B3.6 "small-scale research and development, laboratory operations and pilot projects" and B5.15 "Small-scale renewable energy research and development 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 :

Solar Energy Technologies Office  
This NEPA determination does not require a tailored NEPA provision.  
Review completed by Logan Sholar on 8/5/2015

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

NEPA Compliance Officer Signature:  Date: 8/5/2015  
NEPA Compliance Officer

**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: \_\_\_\_\_ Date: \_\_\_\_\_  
Field Office Manager