

PMC-ND

(1.08.09.13)

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

**RECIPIENT:**Colorado School of Mines**STATE:** CO

PROJECT TITLE : High-Temperature Thermochemical Storage with Redox-Stable Perovskites for Concentrating Solar Power

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-EE0006537	GFO-0006537-002	GO6537

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 Colorado School of Mines to research, enhance and evaluate particle-based receiver and solar system process designs. DOE funding would be used to assemble and test a sub-scale particle receiver reactor device and a re-oxidation reactor to validate models and provide a basis for commercialization including a complete economic evaluation of such process modeling and engineering design.

A previous NEPA determination (GFO-0006537-001; CX A9, B3.6, B3.15; 3/13/2014) was made for all Budget Period (BP) 1 tasks which included laboratory activities to identify and characterize elements for thermochemical energy storage. This NEPA review applies to all BP 2 tasks.

Proposed project activities for BP 2 would include materials characterization, fabrication, and testing of kinetics and thermodynamics. All work would occur indoors at established research laboratories at the Colorado School of Mines and the National Renewable Energy Laboratory (NREL) in Golden, CO. The project would involve high temperature testing of reducible oxide materials which would be properly contained in the test facilities both at Colorado School of Mines and at NREL. No physical modification of existing facilities or construction of new facilities would occur under this project. No ground disturbing activities would occur. 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 comply with appropriate regulations.

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 BP 2 tasks 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 exclusions A9 "Information gathering" 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 :

Solar Energy Technologies Office

This NEPA determination does not require a tailored NEPA provision.

Review completed by Logan Sholar on 7/29/2015

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____

Kurti Ke
NEPA Compliance Officer

Date: _____

8/3/2015

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: _____