PMC-EF2a

(2/04/02)

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

RECIPIENT: Physical Optics Corporation **STATE:** CA

PROJECT TITLE : Electrically Supported Thermal Exchange (ELSTEX) Technology

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000336	DE-EE0005130	GFO-0005130-001	EE5130

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 (including, but not limited to, literature surveys, inventories, audits), data analysis (including computer modeling), document preparation (such as conceptual design or feasibility studies, analytical energy supply and demand studies), and dissemination (including, but not limited to, document mailings, publication, and distribution; and classroom training and informational programs), but not including site characterization or environmental monitoring.

B3.6 Siting, construction (or modification), operation, and decommissioning of facilities for indoor bench-scale research projects and conventional laboratory operations (for example, preparation of chemical standards and sample analysis); small-scale research and development projects; and small-scale pilot projects (generally less than two years) conducted to verify a concept before demonstration actions. Construction (or modification) will be within or contiguous to an already developed area (where active utilities and currently used roads are readily accessible).

Rational for determination:

Physical Optics Corporation (POC) would utilize DOE and cost share funds to research the technical feasibility and cost requirements of a vapor electrostatic condenser (VEC) to be used as a key component in a geothermal heat extraction/exchange system. The project would design and develop a prototype electrically supported thermal exchange system to incorporate and test the VEC in a laboratory setting, and analyze the costs and benefits of this technology in a geothermal system. Laboratory work would take place at POC's laboratory building located at 20600 Gramercy Place, Bldg. 203, Torrance, CA, 90501.

The project includes one Phase with multiple tasks.

PHASE 1 Electrically Supported Thermal Exchange (ELSTEX)Technology
Task 1.0 Design and Fabricate the ELSTEX System Prototype for Evaluation
Task 2.0 Laboratory Evaluation of the ELSTEX System Prototype
Task 3.0 Analyze Data and Establish the Decision Basis for Further Development
Task 4.0 Develop the Techno-Economic Model for the Proposed System, Including the Thermal Evolution of the Geologic Resource throughout Its Operating Lifetime
Task 5.0 Project Management and Reporting
Reports and other deliverables would be provided in accordance with the Federal Assistance Reporting Checklist following the instructions included therein.

According to the R&D Laboratory Questionnaire, all permits for laboratory work are in place with state and local authorities, no air pollution would be produced, and all liquid effluent and toxic wastes are handled, stored, discharged and/or disposed of in an appropriate manner. Standard laboratory safety equipment (fume hoods, alarms, etc.) are integrated into the laboratory facility and all workers follow safety protocols that are subject to OSHA standards.

This project is comprised of information gathering, data analysis, document preparation; and indoor bench-scale research projects and conventional laboratory operations; therefore the DOE has categorized this proposal into Categorical Exclusions A9 and B3.6.

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 :

EF2a prepared by Casey Strickland

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 8/23/2011

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