

PMC-ND
(LOR 09/13)

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



RECIPIENT: Redox Power Systems, LLC

STATE: MD

PROJECT TITLE : Affordable, High-Performance, Intermediate Temperature Solid Oxide Fuel Cell

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA	DE-EE0006735	GFO-0006735-001	GO6735

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 Redox Power Systems, LLC to fabricate and test 10 cm by 10 cm anode-supported Solid Oxide Fuel Cells (SOFCs) with enhanced performance and durability for operation at 600°C.

The proposed activities would include development of bilayer electrolytes, design and optimization of high-performance electrodes, optimization of bilayer stacks, and demonstration of bilayer stacks. The project will take place at the Univ. of Maryland Energy Research Center (UMERC) and other University of Maryland (UMD) facilities, including lab and office space rented by Redox at UMD. Computer modeling, data analysis, materials research and development, cell fabrication, and testing of button and large format cells would take place on campus at the University of Maryland in facilities which are designed for this type of research; therefore, no modifications or new permits, additional licenses and/or authorizations would be necessary.

Fabrication of the cells would require the use of high temperature furnaces and milling equipment. Safety precautions include eye protection, protective masks and gloves, and eyewash stations. Safety procedures are in place in all locations where hazards exist. All waste material would be handled in accordance with federal, state and local EHS regulations and would be disposed of using University of Maryland disposal protocols.

Based on review of the project information and the above analysis, DOE has determined the proposed project, excluding installation and testing activities, 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 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 :

This NEPA determination does not require a tailored NEPA provision.
Review completed by Rebecca McCord 09/04/2014.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____



Electronically Signed By: Kristin Kerwin

NEPA Compliance Officer

Date: 9/9/2014

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: _____