

PMC-ND

(1.08.09.13)

# U.S. DEPARTMENT OF ENERGY

## OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY

### NEPA DETERMINATION



RECIPIENT: University of New Mexico

STATE: NM

PROJECT TITLE: Development of non-PGM Catalysts for Hydrogen Oxidation Reaction in Alkaline Media

Funding Opportunity Announcement Number  
DE-FOA-0000966

Procurement Instrument Number  
DE-EE0006962

NEPA Control Number  
GFO-0006962-001

CID Number  
GO6962

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:

**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 New Mexico (UNM) for the development of non-platinum group metal (PGM) catalysts for the oxidation of hydrogen for use in hydrogen fuel cells.

The proposed project activities include the synthesis and characterization of novel non-pgm anode materials, to be completed at UNM's department of chemical and biological engineering in Albuquerque, NM; synthesis and characterization of perfluorinated ionomers to be undertaken by Los Alamos National Laboratory (LANL) in Los Alamos, NM; transfer and scale-up of Nickel alloy powders to be handled at Pajarito Powder's manufacturing facility in Albuquerque, NM; and design, development, fabrication and testing of membrane electrode assemblies to be completed at IRD Fuel Cells' manufacturing facility in Albuquerque, NM. All research and development activities would take place in existing facilities designed for this type of research; therefore, no new construction, modifications or new permits, additional licenses and/or authorizations would be necessary.

The proposed project would involve the use and handling of some hazardous materials, including inorganic and organic precursors, inorganic and organic solvents, diluted hydrogen and hydrogen gas, and strong bases. All such handling would occur in-lab. All hazardous materials would be managed in accordance with federal, state, and local environmental regulations. UNM's, LANL's, Pajarito Powder's and IRD's existing corporate health and safety policies and procedures would be followed including employee training, proper protective equipment, engineering controls, monitoring, and internal assessments. For all work conducted at DOE laboratories, project activities may be subject to additional NEPA review by the cognizant NEPA Compliance Officer for the lab and will be required to meet the labs health and safety requirements.

Flammable liquids such as iso-propanol and ethanol would be stored in a designated flammable liquids cabinet. All cylinders with gases would be secured according to established safety regulations. All chemicals, platinum and pt-alloys would be stored in chemical cabinets. The disposal of these chemicals, mixtures and solutions would be removed and transported to appropriate disposal facilities by and according to local, state and federal standards. No siting, construction or major expansion of waste storage, disposal, recovery, or treatment actions/facilities would be required.

Based on review of the project information and the above analysis, DOE has determined that the activities associated with 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 exclusions 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 :

Fuel Cell Technologies Office

This NEPA determination does not require a tailored NEPA provision.

Review completed by Rebecca McCord, 05/18/2015

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

NEPA Compliance Officer Signature:



Electronically  
Signed By: Kristin Kerwin

NEPA Compliance Officer

Date:

5/19/2015

**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: