

PMC-ND

(1.08.09.13)

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



RECIPIENT: University of Michigan

STATE: MI

PROJECT TITLE: Hydrogen Adsorbents with High Volumetric Density: New Materials and System Projections

**Funding Opportunity Announcement Number**  
DE-FOA-0000827

**Procurement Instrument Number**  
DE-EE0007046

**NEPA Control Number**  
GFO-0007046-001

**CID Number**

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 University of Michigan to advance hydrogen storage technology by investigating two classes of materials that have recently shown promise for realizing high volumetric and gravimetric densities simultaneously.

Proposed project activities would include: Synthesis and testing of several metal-organic frameworks (MOFs); extending the concept of zeolite templating to other promising template/matrix combinations; and projecting the performance of the most promising materials to the system level by parameterizing system models. All proposed activities consist of desktop research, data analysis and indoor, bench-scale laboratory work and would take place in three laboratories at the University of Michigan in Ann Arbor, MI and one laboratory at the Ford Motor Company in Dearborn, MI. The project would involve the use and handling of various hazardous materials, including metals, organic solvents, hydrogen, and high pressure CO<sub>2</sub>. All such handling would occur in-lab, and follow proper hazardous material handling and disposal practices. All hazardous materials would be managed in accordance with federal, state, and local environmental regulations. Existing University health and safety policies and procedures would be followed including employee training, proper protective equipment, engineering controls, monitoring, and internal assessments. No modifications to buildings or new permits, additional licenses and/or authorizations are expected to be required as a result of the proposed project.

Based on a 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 that this project is consistent with actions outlined in DOE categorical exclusions A9 "information gathering" 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 :

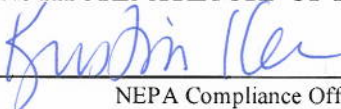
Fuel Cell Technologies Office

This NEPA Determination does NOT require a tailored NEPA provision.

NEPA review completed by Logan Sholar, 5/19/15

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

NEPA Compliance Officer Signature:



NEPA Compliance Officer

Date:

5/20/2015

**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: