

PMC-EF2a

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



RECIPIENT: FuelCell Energy, Inc.

STATE: CT

PROJECT TITLE : Electrochemical Hydrogen Compressor

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-PS36-07GO97009	DE-EE0003727	GFO-10-549	EE3727

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** 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).
- 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.

## Rational for determination:

Fuel Cell Energy (FCE) would conduct research and development of their electro-chemical hydrogen compressor concept and design, fabricate, install and test a prototype unit capable of compressing hydrogen from about 300 psi input pressure to 3,000 psi output pressure. A sub-scale module would also be tested up to 6,000/12,000 psi. Project activities would be conducted primarily within FCE's R&D facility located in Danbury, Connecticut.

The project is divided into five tasks with sub-tasks.

1. Electrochemical Hydrogen Compressor (EHC) Design and Development
2. EHC Fabrication
3. EHC Testing
4. Data Analysis and Deployment Strategy
5. Program Management and Reporting

According to the R&D Laboratory Questionnaire, no additional permits would be needed. The only potential liquid effluent from the project would be a small amount of water condensate (pure H<sub>2</sub>O) from the low pressure side. Laboratory facilities are in full compliance with all federal, state and local governments, environmental laws and regulations, including OSHA standards. The Environment and Safety laws include: hydrogen safety, airborne emissions, waterborne effluents, external radiation levels, outdoor noise, solid and bulk waste disposal practices, and handling and storage of toxic and hazardous materials. FCE's Environmental Health and Safety Department trains all scientific staff and supports and monitors implementation of all applicable rules and regulations.

All project work is comprised of information gathering, data analysis, document preparation; 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:

Note to Specialist :

EF2a prepared by Casey Strickland

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

NEPA Compliance Officer Signature:   
NEPA Compliance Officer

Date: 8/19/10

**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: \_\_\_\_\_

AS INFORMATION GATHERING INCLUDING, BUT NOT LIMITED TO, CONSULTATION WITH AFFECTED AGENCIES, STATE, FEDERAL, AND TRIBAL AGENCIES, AND CONSULTATION WITH INTERESTED PARTIES, IS COMPLETED, THE PROJECT WILL BE RE-EVALUATED TO DETERMINE IF IT QUALIFIES FOR A CATEGORICAL EXCLUSION UNDER NEPA. IF THE PROJECT DOES NOT QUALIFY FOR A CATEGORICAL EXCLUSION, THE PROJECT WILL BE RE-EVALUATED TO DETERMINE IF IT QUALIFIES FOR AN ENVIRONMENTAL ACTION PLAN (EAP) OR AN ENVIRONMENTAL IMPACT STATEMENT (EIS). THE PROJECT WILL BE RE-EVALUATED TO DETERMINE IF IT QUALIFIES FOR AN EAP OR AN EIS. THE PROJECT WILL BE RE-EVALUATED TO DETERMINE IF IT QUALIFIES FOR AN EAP OR AN EIS.

NEPA REVIEWER

DOE has made a final NEPA determination for the event from the following language in the event:

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