

PMC-ND
(1.08.09.13)

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

**RECIPIENT:**University of Connecticut**STATE:** CT

PROJECT TITLE : Proton-Conducting Solid Oxide Electrolysis Cells for Large-scale Hydrogen Production at Intermediate Temperatures

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001647	DE-EE0008078	GFO-0008078-001	GO8078

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 University of Connecticut (UConn) to conduct a research program to develop innovative, cost effective, and efficient hydrogen-conducting solid oxide electrolysis cells (H-SOECs) for large-scale hydrogen production at temperatures between 600° and 800° Celsius. All project work would occur within existing laboratories at UConn in Storrs, Connecticut and the Pacific Northwest National Laboratory (PNNL) in Richland, Washington.

UConn would develop hydrogen conducting electrolyte and ceramic materials that would be used to fabricate the H-SOECs. The fabrication process would then include screen-printing, tape casting, and reactive sintering methods. The fabricated H-SOECs would then be electrochemically tested under real-world operating conditions. UConn would send selected cell materials to PNNL for further testing and characterization. PNNL would also develop a computational simulation and modeling toolset for the design and operation of the H-SOECs.

No physical modification of existing facilities or construction of new facilities would occur nor would any change in the use, mission, or operation of existing facilities occur at either facility. No new permits, additional licenses and/or authorizations would be necessary to complete project work. The proposed project activities would necessitate the use of small amounts of hazardous materials and generate limited amounts of non-hazardous waste which would be managed by UConn Environmental Health and Safety Department following relevant environmental regulations.

Based on the review of the proposal, DOE has determined the tasks within BP1 of the proposal fit within the class of action(s) and the integral elements of Appendix B to Subpart D of 10 CFR 1021 outlined in the DOE categorical exclusion(s) selected above. DOE has also determined that: (1) there are no extraordinary circumstances (as defined by 10 CFR 1021.410(2)) related to the proposal that may affect the significance of the environmental effects of the proposal; (2) the proposal has not been segmented to meet the definition of a categorical exclusion; and (3) the proposal is not connected to other actions with potentially significant impacts, related to other proposals with cumulatively significant actions, or an improper interim action. Tasks and subtasks within BP1 of the proposal are categorically excluded from further NEPA review.

NEPA PROVISION

DOE has made a conditional NEPA determination for this award, and funding for certain tasks under this award is contingent upon the final NEPA determination.

Insert the following language in the award:

You are restricted from taking any action using federal funds, which would have an adverse affect on the environment or limit the choice of reasonable alternatives prior to DOE/NNSA providing either a NEPA clearance or a final NEPA decision regarding the project.

Prohibited actions include:

Budget Periods 2 and 3

This restriction does not preclude you from:

All tasks and subtasks associated with Budget Period 1

If you move forward with activities that are not authorized for federal funding by the DOE Contracting Officer in advance of the final NEPA decision, you are doing so at risk of not receiving federal funding and such costs may not be recognized as allowable cost share.

Insert the following language in the award:

You are required to:

Any work proposed to be conducted at a DOE laboratory may be subject to additional NEPA review by the cognizant DOE NEPA Compliance Officer for the specific DOE laboratory prior to initiating such work. Further, any work conducted at a DOE laboratory must meet the laboratory's health and safety requirements.

Note to Specialist :

Fuel Cell Technologies Office

This NEPA determination requires a tailored NEPA provision.

Review completed by Chris Rowe on 7/12/2017

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  Casey Strickland  Date: 7/12/2017
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