

PMC-ND
(1.08.09.13)

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

**RECIPIENT:** FuelCell Energy, Inc.**STATE:** CT

PROJECT TITLE: Proton-Conducting Ceramic Electrolyzers for High-Temperature Water Splitting

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001412	DE-EE0008376	GFO-0008376-001	GO8376

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 FuelCell Energy, Inc. (FCE) for the development of advanced high temperature water splitting (HTWS) systems for production of hydrogen at low cost. Additionally, the project includes concept system design and techno-economic studies based on the results of the laboratory-scale tests. Project work would occur at FCE's research facility (Danbury, CT), Versa Power System, Ltd.'s research and development facility (Calgary, AB, Canada), and at the Colorado School of Mines (Golden, CO).

The proposed project is concerned with laboratory research on core technologies for electrolysis of water into hydrogen and oxygen at high temperatures (between 400 to 600 degree centigrade), using a class of proton conducting ceramics. Development activities would be focused on material selection, design, fabrication, and laboratory-scale testing of electrolytic cells and stacks, for enhanced performance and durability of the proton conducting electrolytic cells. Design and techno-economic studies would require desktop research and data analysis. Project work would occur in existing laboratories designed for this type of work that would utilize standard laboratory equipment; therefore no modifications, new permits, additional licenses and/or authorizations would be necessary. No ground disturbing activities, no changes in operation of existing facilities, and no installation of equipment outdoors would occur for project activities. The project would involve the use and handling of various hazardous materials, including metal oxides, metals, solvents, binders, oxygen gas, and hydrogen gas. All such handling would occur in-lab and follow proper hazardous material handling and disposal practices. All hazardous materials would be managed and disposed of in accordance with federal, state (or province), and local environmental regulations. Project work is similar to activities that routinely occur at these facilities. Existing health and safety policies and procedures include employee training, proper protective equipment, engineering controls, monitoring, and internal assessments. DOE does not anticipate any impacts to resources of concern due to the proposed activities of the project.

Based on the review of the proposal, DOE has determined the proposal fits 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. This proposal is categorically excluded from further NEPA review. Further, DOE has determined that the work to be carried out at Versa Power System, Ltd. is exempt from further review pursuant to Section 5.1.1 of the DOE Final Guidelines for Implementation of Executive Order 12114; "Environmental Effects Abroad of Major Federal Actions."

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

If the Recipient intends to make changes to the scope or objective of this project, the Recipient is required to contact the Project Officer, identified in Block 15 of the Assistance Agreement before proceeding. The Recipient must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved. If the Recipient moves forward with activities that are not authorized for Federal funding by the DOE Contracting Officer in advance of a final NEPA decision, the Recipient is doing so at risk of not receiving Federal funding and such costs may not be recognized as allowable cost share.

Note to Specialist :

Fuel Cell Technologies Office
This NEPA determination does not require a tailored NEPA provision.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  _____ Date: 8/15/2018
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