PMC-ND

(1.08.09.13)

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

RECIPIENT: University of Kansas **STATE:** KS

PROJECT TITLE: Stationary Direct Methanol Fuel Cells Using Pure Methanol

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001874	DE-EE0008440	GFO-0008440-001	GO8440

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.
B3.15 Small-scale indoor research and development projects using nanoscale materials	Siting, construction, modification, operation, and decommissioning of facilities for indoor small-scale research and development projects and small-scale pilot projects using nanoscale materials in accordance with applicable requirements (such as engineering, worker safety, procedural, and administrative regulations) necessary to ensure the containment of any hazardous materials. Construction and modification activities would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible).

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide funding to University of Kansas (KU) to design, manufacture, and test cathode platinum group metal (PGM)-free cathode catalysts for integration into direct methanol fuel cells (DMFCs). The project will be carried out over three Budget Periods (BPs), with a Go/No-Go Decision in between each BP.

Proposed project activities would include anode catalyst synthesis, cathode catalyst synthesis, electrode fabrication, integration of membrane electrode assembly (MEA) components into DMFC single cells and stacks (fuel cell prototype), performance tests of fuel cell prototype with different methanol concentrations, accelerated life testing, and market analysis.

KU would work with three other partner universities to develop and test the component parts of the MEA, which would then be incorporated into the DMFC at KU's facilities. Each project partner would be responsible for one component of the MEA. Synthesis and testing of the anode catalyst would take place at Kansas State University (Manhattan, KS). Synthesis and testing of the cathode PGM-free catalysts would take place at University of Buffalo (Buffalo, NY). Electrode fabrication, characterization and architecture optimization would take place at Carnegie Mellon University (Pittsburgh, PA). Fabrication and testing of the DMFC would be completed at KU's Energy Storage Lab at its primary campus in Lawrence, KS, along with testing of the component parts produced by each of the project partners.

All locations in which project activities would be completed are existing, purpose-built laboratory facilities that regularly conduct work similar in nature to that proposed as part of this project. The proposed project would not require any modifications to existing facilities, nor any other ground disturbing activities. No new permits, licenses, or authorizations would be required to perform project activities.

Project activities would involve the use and handling of industrial solvents and nano particles. All such handling would occur in-lab. In order to mitigate risks associated with the handling of these materials, KU and its project partners would adhere to established health and safety policies and procedures, including health and safety training, the use of proper protective equipment, engineering controls, monitoring, and internal assessments. All nanomaterials would be stored and transported in sealed containers. Project activities would be performed under fume hoods whenever appropriate. KU and its project partners would adhere to all Federal, state, and local health, safety, and environmental laws and regulations.

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.

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.
Review completed by Jonathan Hartman, 10/16/2018

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed By: Casey Strickland Date: 10/17/2018

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