PMC-ND
(1.08.09.13)

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

RECIPIENT: Liox Power, Inc **STATE:** CA

PROJECT TITLE : Electrolyte Assisted Hydrogen Storage Reactions

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001412	DE-EE0007849	GFO-0007849-001	GO7849

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 Liox Power, Inc. to develop reversible hydrogen storage materials suitable for widespread transportation applications. During Budget Period 1 (BP1), experimentation and evaluation of multiple component complex and destabilized hydride materials would be completed. If the results of BP1 warrant it, a second budget period to work on practical hydrogen storage material development using electrolyte (but not excluding electrochemical) assisted reactions may be performed. Only BP1 is being negotiated at this time so this NEPA review is for BP1 activities only. Future budget periods would be negotiated after the first Go/No-Go milestone is met. Additional NEPA review will be required if DOE proposes to continue funding the project into subsequent budget periods. Project work would occur in existing laboratory facilities of Liox and HRL Laboratories in Pasadena and Malibu, California.

Project activities in BP1 include analysis of single or multi component electrolytes possibly with additives, electrochemical proof-of-concept studies of both hydrogenation and dehydrogenation reactions, and proof-of mechanism studies to demonstrate the efficacy of the electrolyte assist concept on complex hydrides and/or destabilization reactions. All project activities would occur in existing laboratories designed for this type of work; 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 at either of the facilities involved in the project. Project activities require the use and handling of various hazardous materials, including metals, solvents, and electrolytes. All such handling would occur in-lab with dedicated proper hazardous material handling and disposal practices in place to ensure there would be no risk to the public. All hazardous materials would be managed in accordance with federal, state, and local environmental regulations. Only sub-kg or sub-liter quantities of materials and chemicals would be produced during the project. Small quantities of waste material such as solvents or electrolytes would be collected for pickup for all chemical disposal. Waste material is expected to be sub-liter quantities. 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 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 Period 2
This restriction does not preclude you from:
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.

Note to Specialist :

Fuel Cell Technologies Office
This NEPA determination requires a tailored NEPA provision.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed By: Casey Strickland Date: 12/22/2016

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