PMC-ND
(1.08.09.13)

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

RECIPIENT: Giner, Inc. **STATE:** MA

PROJECT TITLE : Advanced Electrochemical Hydrogen Compressor

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001412	DE-EE0007647	GFO-0007647-001	

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 Giner, Inc. (Giner) to design, develop, fabricate, and field test an advanced electrochemical hydrogen compressor (EHC) for mobile refueling applications. Feasibility studies and analysis work would be completed at the GAIA Energy Research Institute in Arlington, Virginia. Design, development, fabrication and testing activities would occur at Giner's R&D facility in Newton, Massachusetts. Field testing and validation would also occur at the National Renewable Energy Laboratory (NREL). Specialized membranes for use in the EHC would be developed at Rensselaer Polytechnic Institute (RPI). Activities would be completed over a three year performance period.

Project activities include the development of hydrocarbon membranes, synthesis and optimization of membranes, design of the fuel cell stack and system for the EHC prototype refueling unit, and completion of a feasibility study. Work at GAIA would include only paper studies and analysis so no health and safety issues or impacts are expected from activities occurring at this location. Project work at Giner, NREL, and RPI would include R&D or laboratory activities that involve the compression of hydrogen, handling of industrial solvents, and electrical shock hazards. Organizational safety policies and procedures would be followed by Giner, NREL, and RPI. The Safety Committees for each of the teams would oversee all laboratory operations and be an active component of the project operations. Facilities would comply with all federal, state and local safety and health laws and regulations. Additional policies and procedures would be implemented as necessary as new health and safety risks are identified to ensure compliance with applicable health and safety regulations and minimize health and safety risks to employees and the public. Dedicated hydrogen safety systems have been implemented at the Giner and NREL facilities where EHC testing would be conducted. Giner's hydrogen safety system includes automatic hydrogen monitoring via multiple hydrogen sensors, a ventilation exhaust system, and automatic electrical shutdown of the laboratory/facilities. There would be no physical modifications to existing facilities, no ground disturbing activities, no changes in operation of existing facilities, and no installation of equipment outdoors at any of the facilities involved in the project. No new permits, licenses or authorizations are required to perform project activities. There would be no hazardous waste generated from project activities. Hydrogen gas would be stored and consumed in fuel cell applications or other energy efficient processes at both Giner and NREL with excess hydrogen gas being vented through a safety flash arrestor if necessary. Other non-hazardous wastes would be disposed of in accordance with established guidelines at each facility. DOE does not anticipate any impacts to resources of concern due to the proposed activities of the project.

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.

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.

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.
Casey Strickland 08/16/16

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed By Lori Gray Lori Gray Date: 8/16/2016
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