

PMC-EF2a

(201002)

**U.S. DEPARTMENT OF ENERGY  
EERE PROJECT MANAGEMENT CENTER  
NEPA DETERMINATION**



RECIPIENT: Hawaii Hydrogen Carriers, LLC

STATE: HI

PROJECT TITLE : Development of a Practical Hydrogen Storage System Based on Liquid Organic Hydrogen Carriers and a Homogeneous Catalyst

|  |                                      |                            |                   |
|--|--------------------------------------|----------------------------|-------------------|
| <b>Funding Opportunity Announcement Number</b> | <b>Procurement Instrument Number</b> | <b>NEPA Control Number</b> | <b>CID Number</b> |
| DE-FOA-0000380                                 | DE-EE0005020                         | GFO-0005020-001            | 0                 |

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:

- B3.6** Siting, construction (or modification), operation, and decommissioning of facilities for indoor bench-scale research projects and conventional laboratory operations (for example, preparation of chemical standards and sample analysis); small-scale research and development projects; and small-scale pilot projects (generally less than two years) conducted to verify a concept before demonstration actions. Construction (or modification) will be within or contiguous to an already developed area (where active utilities and currently used roads are readily accessible).
- A9** Information gathering (including, but not limited to, literature surveys, inventories, audits), data analysis (including computer modeling), document preparation (such as conceptual design or feasibility studies, analytical energy supply and demand studies), and dissemination (including, but not limited to, document mailings, publication, and distribution; and classroom training and informational programs), but not including site characterization or environmental monitoring.

## Rational for determination:

Hawaii Hydrogen Carriers LLC propose to use federal funding to develop a catalyst optimized hydrogen storage media based on liquid organic hydrogen carrier and to design a commercially viable hydrogen delivery system. There are 2 parts to this project that will take place in 2 locations. Part 1 will be catalyst optimization and will take place at Hawaii Hydrogen Carriers LLC. Part 2 will include design and modeling of the reactor tank, which will take place at General Motors Research Center located at the Warren Tech Center.

This project will include catalyst optimization to include isothermal kinetics & thermodynamics differentiation, additive intervention of side reactions, and cycling studies. These activities will take place at GM Research Center: design and modeling of reactor to include computer analysis, functional evaluation, system optimization, and final simulations.

The applicant has submitted and R & D Questionnaire for each location where work will take place in this project. These questionnaires thoroughly address the chemical and safety handling protocols associated with these project activities.

This project is comprised of bench scale research for the optimization of catalysts and information gathering & computer modeling associated with tank reactor design; therefore a CX A9 & B3.6 will apply.

**NEPA PROVISION**

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

Eugene Brown 6/1/2011

**SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.**

NEPA Compliance Officer Signature: \_\_\_\_\_

Date: \_\_\_\_\_

6/6/2011