

PMC-EF2a

(20102)

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



RECIPIENT:WA Dept. of Commerce

STATE: WA

PROJECT TITLE : SEP ARRA - SIRTI - NuElement Bio Aviation Fuel Battery-Extender Auxiliary Power Unit Demonstration at Boeing Commercial Airplanes' System Concept Center

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000052	DE-EE-0000139	GFO-0000139-028	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:

- B5.1** Actions to conserve energy, demonstrate potential energy conservation, and promote energy-efficiency that do not increase the indoor concentrations of potentially harmful substances. These actions may involve financial and technical assistance to individuals (such as builders, owners, consultants, designers), organizations (such as utilities), and state and local governments. Covered actions include, but are not limited to: programmed lowering of thermostat settings, placement of timers on hot water heaters, installation of solar hot water systems, installation of efficient lighting, improvements in generator efficiency and appliance efficiency ratings, development of energy-efficient manufacturing or industrial practices, and small-scale conservation and renewable energy research and development and pilot projects. The actions could involve building renovations or new structures in commercial, residential, agricultural, or industrial sectors. These actions do not include rulemakings, standard-settings, or proposed DOE legislation.
- 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:

The SIRTI Innovation Fund is proposing to sub-grant ARRA funding from DOE to a team of Nu Element, Inc., Boeing Commercial Airplanes (BCA), and Washington State University. This team will use the DOE funds for a demonstration project to test and evaluate the component sub-system of a Bio-Aviation fuel Battery-Extender Auxiliary Power Unit (BE-APU) that incorporates renewable fuel processing and fuel cells for on-board and ground support operations for airplanes. The technology is designed to extend the output of battery-based power systems for mobile and stationary back-up power applications and transportation equipment; such as hybrid-electric vehicles, charging material handling equipment, and ground support equipment for airplanes. The BE-APU will use fuel cells which operate on renewable fuels, particularly bio-aviation fuels. The BE-APU will act as a secondary engine that is tied to a battery pack to charge the batteries during idle periods or when the batteries are drained. The fuel-cell based BE-APU will consist of three primary components: the fuel processing module to convert the renewable fuel into hydrogen; the fuel cell module, which converts the hydrogen into electrical energy; and the power conditioning and storage system to manage the power across the entire BE-APU.

The project activities funded by DOE will consist of evaluation of the fuel processing component sub-system of the BE-APU performance matched to BCA's galley test bed. This evaluation and test will take place at a System Concept Center laboratory in Everett, Washington. Tasks to be performed under this project involve data analysis, monitoring and reporting of project activities, and integration of energy storage systems.

The project comprises demonstrations of potential energy conservation and energy-efficiency activities along with data analysis, and information gathering techniques; therefore these actions are categorically excluded under A9, and B5.1.

NEPA PROVISION

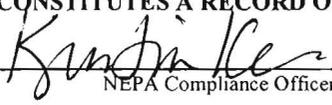
DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

EF2a completed by Lizelle Espinosa

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: 
NEPA Compliance Officer

Date: 3/1/2011

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: _____
Field Office Manager

Date: _____