PMC-EF2a
(2.04.02)

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

RECIPIENT: EnerFuel **STATE:** FL

PROJECT TITLE : Hydrogen Technology Electric Vehicle Charging Station

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FC36-04GO14255	DE FC36-04GO14225	GFO-04-221d	GO14225

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.

Rational for determination:

Enerfuel, a sub-recipient of Florida Atlantic State University, will use Congressionally Directed funding through DOE to design, fabricate, install and demonstrate a 10-kW fuel cell power system, operating on methanol fuel, which will be used for charging electric vehicles used on the University campus. The fuel cell power plant will be installed at Florida Atlantic University's existing electric vehicle charging station in Boca Raton, Florida.

Task 1: Program Management and Reporting
Task 2: Develop Methanol Production System and Select Site
Task 3: Select HyTech Demonstration Site
Task 4: HyTech Site Preparation
Task 5: Hytech Site Promotion
Task 6: Design Fuel Cell Power System
Task 7: Fabricate and Test/Debug First Power Module
Task 8: Fabricate Additional Fuel Cell Power Modules
Task 9: Fabricate and Test the Integrated Fuel Cell Power System
Task 10: Benchmark System
Task 11: Identify Existing and Likely Codes & Standards
Task 12: Install, Commission and Operate System

The HyTech station will be located in the back of the University's vehicle maintenance facility where a grid powered golf cart charging station and gasoline/diesel fueling station already exists. The fuel cell systems will be installed on a concrete pad north of parking lot 29 and utilities will be trenched underground to the charging station. The construction of this charging station will occur on previously paved area currently utilized as the University's maintenance yard.

The design of the station is being performed with the assistance of FAU's Mechanical Engineering department. All lab work associated with configuring the fuel cells and inverters for use with the HyTech Electric Vehicle Charging Station will take place at EnerFuel's West Palm Beach facility. EnerFuel's facility has been specifically designed and equipped for fuel cell R&D with special attention to hydrogen safety.

Methanol will be used to fuel four IdaTech PEM fuel cell systems, which will be paired with a solar array and batteries to operate a set of inverters for powering the vehicle charging system. A 500 gallon dual-walled tank will be used for storage in addition to a methanol delivery system that is comprised of a series of pumps, safety controls, and plumbing. Hydrogen will be produced onsite through steam reformation of methanol. The fuel cell anode exhaust will be fed into a catalytic combustor before exhausting to the outside environment, therefore no hydrogen gas will be allowed to vent into the atmosphere. The methanol will be delivered by truck once every 1.5-2 months.

Safety plan protocols are in place for the site and the methanol tank will be placed behind a chain linked fence. Sensors and controls will be installed to minimize the potential for leakage and fire. All personnel associated with the project will be required to know the safety protocols associated with the station and only authorized personnel will be allowed to access the station.

The engineer overseeing the design and construction will assure the station conforms to NFPA 70 (National Electric Code), NFPA 30 (Flammable and Combustible Liquids Code), NFPA 853 (Standard for the Installation of Stationary Fuel Cell Power Systems, 2007 Ed.), UL 1741 and/or any other relevant standards.

This project is demonstrating a renewable energy research and development pilot project in an established industrial area of a State University campus; therefore a CX B5.1 applies to this action.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

None Given.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 7/26/2010

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