# EERE Notice of Intent

# Notice of Intent to Issue

# Funding Opportunity Announcement Number DE-FOA-0000828

The Department of Energy (DOE) Office of Energy Efficiency and Renewable Energy (EERE) intends to issue, on behalf of its Fuel Cell Technologies Office, a Funding Opportunity Announcement (FOA) entitled “Fuel Cell Hybrid Electric Medium Duty Trucks, Roof-top Backup Power, and Advanced Hydrogen Refueling Components.”

The Fuel Cell Technologies Office (FCTO) is a key component of the Department of Energy’s (DOE) Energy Efficiency and Renewable Energy (EERE) portfolio which aims to provide clean, safe, secure, affordable, and reliable energy from diverse domestic resources, providing the benefits of increased energy security and reduced petroleum use, criteria pollutants and green-house gas emissions. A more detailed description of the FCTO, including technical and cost targets, can be found in the Hydrogen and Fuel Cells Program Plan (<http://hydrogen.energy.gov/roadmaps_vision.html>) and the Multi-Year Research, Development and Demonstration Plan (<http://www1.eere.energy.gov/hydrogenandfuelcells/mypp/>).

The DOE’s activities for hydrogen and fuel cells are authorized by the following:

Energy Policy Act (EPAct) of 2005 (Public Law 109-58), Title VIII

Energy Independence and Security Act (EISA) of 2007 (Public Law 110-140)

The Energy Policy Act of 2005 authorizes programs for the development, demonstration, and commercialization of fuel cell and hydrogen technology, in partnership with industry (EPAct Section 802). These activities include applications in transportation, utility, industrial, commercial and residential sectors (EPAct Section 805).

Fuel cells can lead to substantial energy savings and reductions in imported petroleum and carbon emissions. To realize these benefits, DOE's FCTO focuses on funding research and development (R&D), technology validation, and market transformation activities supporting a portfolio of fuel cell technologies and applications.

It is anticipated that the FOA will include the following Topics:

**Topic 1: Demonstration and Deployment of Fuel Cell Hybrid-Electric Medium-Duty Trucks (up to $3M federal funding per award, 50% minimum cost share required)**

Topic 1 will accelerate the development and deployment of on-board, fuel cell hybrid- electric powered Class 3-6 medium-duty trucks (MD eTrucks) to substantially increase the zero emission driving range, thereby reducing petroleum consumption and related emissions and increasing the economic viability of these electric drive vehicles.

DOE seeks new applications for projects to demonstrate and deploy fuel cell hybrid MD eTrucks at freight distribution centers, cargo distribution centers, or parcel/package distribution center sites. The specific MD eTruck vehicles of interest are commercial vehicles that deliver cargo, parcels, or packaged freight on daily routes and return to their distribution centers at the end of their daily operations.

DOE envisions up to two financial assistance awards in the form of cooperative agreements, with a period of performance of up to five years for each award.

**Topic 2: Validation of Advanced Hydrogen Refueling Components (up to $1.5M federal funding per award, 50% minimum cost share required)**

Topic 2 will demonstrate and validate the durability and robustness of hydrogen refueling components in real-world operating environments. Feedback will be provided to the DOE hydrogen and fuel cell R&D projects, industry partners, and end users to help determine what additional R&D is required to move the technology forward.

This topic seeks to validate advanced/innovative hydrogen refueling components in their intended real-world application. Proposed projects should validate advanced hydrogen refueling equipment by placing the equipment in service for an existing or planned refueling site in the U.S. Advanced components to be validated under this topic area may include, but are not limited to, compressors, electrolyzers, systems coproducing electricity and hydrogen, hydrogen delivery (such as high pressure tanks for tube trailers), bulk hydrogen storage systems, and dispenser systems or components, such as flow meters, nozzles or communications systems.

DOE envisions multiple financial assistance awards in the form of cooperative agreements, with a period of performance of up to five years for each award.

**Topic 3: Demonstration and Case Study for Roof-top Installations of Hydrogen Fuel Cell Backup Power Systems (up to $250k federal funding per award, 50% minimum cost share required)**

Topic 3 will develop a case study for roof-top installations of fuel cell powered back-up power systems that refuel from the ground. The process of obtaining access to the building, interacting with code officials, obtaining required permits, design considerations, and operation and maintenance will be documented as a case study for informing future siting of backup power systems.

The case study is to address methods for reducing the cost of installation such as including the use of components that can be installed without the use of a crane; the use of light-weight composite tanks to reduce the roof load or provide greater energy capacity of the system; specific designs used for the use of permanently installed hydrogen piping and appropriate remote-controlled valves and service-point valves that allow for the convenient ground-level refueling of the system from hydrogen delivery vehicles; the safety considerations made in the installation and operation of the system; operational and maintenance logs for the system or systems covering several backup power events; and how the costs of installation and operations compare to appropriate baseline business cases, including both standard ground installations and other rooftop installations with conventional technology (i.e. diesel or batteries). The study may include the deployment and demonstration of one or several fuel cell backup power systems, or rely on existing or modified installations. DOE seeks to maximize the variety of specific measures studied to accommodate the roof-top installation or the variety of site-specific conditions that may impact the installation and operation of roof-top installations. The hydrogen delivery tanks for various truck platforms will not be considered in this topic area, but it is possible that hydrogen delivery approaches/advances could be validated under Topic 2 above.

DOE envisions up to two financial assistance awards in the form of cooperative agreements, with a period of performance of up to five years for each award.

**Topic 4: Hydrogen Meter R&D (up to $300K federal funding per award, 20% minimum cost share required)**

Topic 4 will support research and development to improve the accuracy of meters used to measure the mass of hydrogen fuel dispensed into a vehicle. Accurate dispenser meters are critical to the economic viability of hydrogen fueling stations by enabling them to meet measurement requirements for the legal sale of hydrogen by mass to the public, while protecting both the customers and vendors.

The R&D will address improvements required for meters to enable commercial dispensing devices to meet the measurement requirements defined in NIST Handbook 44[[1]](#footnote-1), while performing under fueling conditions defined in SAE J2601 TIR[[2]](#footnote-2). The work will advance the state of hydrogen meter technology toward an accuracy of at least 1.5% relative while performing under fueling conditions, which include measurements taken over a range of fueling flow rates at the nozzle (up to 60 g H2/s, up to 3.6 kg/min) and a range of hydrogen pressures (up to at least 87.5 MPa) and temperatures (-40 C to 85 C).

DOE envisions one financial assistance award in the form of a cooperative agreement, with a period of performance of up to two years.

This Notice is to inform interested parties of DOE’s intention to issue this FOA in the near term. Any of the information contained in this Notice is subject to change. DOE will not entertain any questions or telephone calls at this time involving this Notice. Once the FOA has been released, DOE will provide an avenue for potential applicants to submit questions.

DOE plans to issue the FOA in or around the mid-May 2013 timeframe. The FOA will be available for viewing at the EERE Exchange website <https://eere-exchange.energy.gov/>. If applicants wish to receive official notifications and information from EERE regarding this FOA they should register in EERE Exchange. When the FOA is released, applications will only be received through Exchange.

**This is a Notice of Intent (NOI) only. DOE may issue a FOA as described herein, may issue a FOA that is significantly different than the FOA described herein, or may not issue a FOA at all.**

In anticipation of the FOA being released, Applicants are advised to complete the following, which is **required** for application submission:

* Register and create an account on EERE Exchange at <https://eere-exchange.energy.gov/>. This account will then allow the user to register for any open EERE FOAs that are currently in EERE Exchange. It is recommended that each organization or business unit, whether acting as a team or a single entity, use only one account for each submission.

Questions related to the registration process and use of the EERE Exchange website should be submitted to: EERE-ExchangeSupport@hq.doe.gov

Applicants should not wait until the last minute to begin the submission process. During the final hours before the submission deadline, Applicants may experience server/connection congestion that prevents them from completing the necessary steps in EERE Exchange to submit their applications. EERE will not extend the submission deadline for Applicants that fail to submit required information and documents due to server/connection congestion.

The EERE Exchange registration does not have a delay; however, the remaining registration requirements below could take several weeks to process and are necessary in order for a potential applicant to receive an award under this announcement. Therefore, although not required in order to submit an Application through the EERE Exchange site, all potential applicants lacking a DUNS number, or not yet registered with SAM or FedConnect should complete these registrations as soon as possible:

* Obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number (including the plus 4 extension, if applicable) at <http://fedgov.dnb.com/webform>
* Register with the System for Award Management (SAM) at <https://www.sam.gov>. Designating an Electronic Business Point of Contact (EBiz POC) and obtaining a special password called an MPIN are important steps in SAM registration. Please update your SAM registration annually.
* Register in FedConnect at <https://www.fedconnect.net/>. To create an organization account, your organization’s SAM MPIN is required. For more information about the SAM MPIN or other registration requirements, review the FedConnect Ready, Set, Go! Guide at <https://www.fedconnect.net/FedConnect/PublicPages/FedConnect_Ready_Set_Go.pdf>.
* Register in Grants.gov to receive automatic updates when Amendments to this FOA are posted.  However, please note that applications will not be accepted through Grants.gov.  <http://www.grants.gov/>. Note: Announcements regarding modifications will also be sent out through EERE Exchange.
1. <http://www.nist.gov/pml/wmd/pubs/upload/3-39-12-hb44-final.pdf> [↑](#footnote-ref-1)
2. <http://standards.sae.org/j2601_201003/> [↑](#footnote-ref-2)