

Notice of Intent No. DE-FOA-0001701

Notice of Intent to Issue Funding Opportunity Announcement No. DE-FOA-0001629

The Office of Energy Efficiency and Renewable Energy (EERE) intends to issue, on behalf of the Vehicle Technologies Office (VTO), a Funding Opportunity Announcement (FOA) entitled “FY 2017 Vehicle Technologies Program Wide Funding Opportunity Announcement”.

The Vehicle Technologies Office supports a broad technology portfolio of cutting-edge advanced highway transportation technologies that improve transportation energy efficiency, reduce costs to consumers and businesses, and improve U.S. competitiveness. Research, development, and deployment efforts are focused on reducing the cost and improving the performance of a mix of near- and long-term vehicle technologies including advanced batteries, power electronics and electric motors, lightweight and propulsion materials, advanced combustion engines, advanced fuels and lubricants, and other enabling technologies.

Investment in advanced vehicle technologies, like vehicle electrification, lightweighting, and combustion engines will benefit conventional vehicles and enable alternative fuel vehicles with sufficiently long ranges, sufficiently low costs, and broad consumer appeal to result in significant market penetration potential.

It is anticipated that the FOA may include the following Areas of Interest:

1.) Advanced Technology Battery Cell Development

Rigorous cost modeling efforts and discussions with industry stakeholders indicate that cost parity between electric drive and internal combustion vehicles is possible under certain scenarios when battery pack costs fall below \$125/kWh (useable energy). The objective of this area of interest is to develop and demonstrate electrochemical energy storage cell technologies capable of addressing the technical barriers to widespread commercialization of PEVs that approach or achieve the battery pack cost target.

2.) Battery500 Seedling Projects

The purpose of this topic is to identify proof-of-concept or seedling projects that will complement the research in the Battery500 Program (see <http://www.energy.gov/technologytransitions/articles/battery500-consortium-spark-ev-innovations-pacific-northwest-national>). The objective of the VTO Battery500 Program is to research, develop, and demonstrate lithium battery technologies capable of achieving a cell specific energy of ≥ 500 Wh/kg while achieving 1,000 cycles. The two technologies being

developed in the program are Lithium metal/Sulfur and Lithium metal/high Nickel Lithium Nickel Manganese Cobalt (NMC) cells, using solid or concentrated liquid electrolytes.

3.) Development of Electric Traction Drive Systems

The objective of this area of interest is to develop and demonstrate both technology and supplier readiness for the production of electric traction drive systems that can meet the technical targets contained in the table below, with particular emphasis on meeting the cost target. Traction drive systems should be demonstrated as meeting these targets through dynamometer testing.

Electric Traction Drive System Technical Targets			
Cost	Specific Power	Power Density	Efficiency
≤\$8/kilowatt (kW)	≥1.4 kW/kilogram	≥4.0 kW/Liter	≥94%

4.) Integrated Computational Materials Engineering (ICME) Development of Low Cost Carbon Fiber for Lightweight Vehicles

The objective of this area of interest is to simultaneously develop low cost carbon fiber (CF) precursor technology to support immediate weight reduction in Light Duty vehicles while also advancing Integrated Computational Materials Engineering (ICME) techniques to support a reduced development-to deployment lead time in all lightweight materials systems. For the purposes of this area of interest, CF is defined as a material consisting of thin, strong multi-crystalline filaments of carbon, used as a strengthening material, especially in resins also achieving the following mechanical and cost requirements. Applications shall use an integrated approach to predict, design, develop, and optimize precursor chemistry (petroleum and non-petroleum derived) for candidates that meet the requirements described above.

Carbon Fiber Cost and Mechanical Requirements			
Cost	Strength	Modulus	Efficiency
≤\$5/pound	≥250Ksi	≥25Msi	≥1%

5.) Emission Control Strategies for Advanced Combustion Engines

The objective of this area of interest is to research, develop, and demonstrate cost effective and efficient catalyst materials and after-treatment strategies that enable light, medium, or heavy duty vehicles with advanced low temperature combustion strategies to meet Tier 3 emissions standards while achieving breakthrough thermal efficiencies. Please note that this AOI is restricted to U.S. colleges, universities, and non-profit research institutions which operate as divisions under colleges or universities.

6.) Open Topic

The objective of this area of interest is to develop novel, non-incremental technologies that are not represented in a significant way in the VTO's existing Technology Roadmaps, current project portfolios, or topics represented in this FOA. Projects should support high-risk, proof-of-concept research to develop a unique technology concept that enables energy efficient "smart" mobility systems. Specific emphasis will be given to concepts that support future transportation scenarios allowing for the efficient movement of people and goods in a way that minimizes energy consumption. Consideration will be given to connectivity and automation, solutions applicable to multiple modes of transport suitable for the urban environment, and the infrastructure required to support consumer adoption of efficient mobility systems. The full spectrum of technologies including hardware and non-hardware solutions relevant to efficient and environmentally friendly transportation technologies will be considered.

EERE envisions awarding multiple financial assistance awards in the form of cooperative agreements.

This notice is issued so that interested parties are aware of the EERE's intention to issue a FOA in the near term. All of the information contained in this notice is subject to change. It should be noted that the NOI (DE-FOA-0001701) number and FOA number (DE-FOA-0001629) are different, as outlined in the heading on the cover page of this notice. EERE will neither respond to questions nor accept applications under this notice. Once the FOA has been released, EERE will provide an avenue for potential Applicants to submit questions.

EERE plans to issue the FOA in mid-December 2016 via 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 be accepted only through EERE Exchange.

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

- Register and create an account in EERE Exchange at <https://eere-exchange.energy.gov/>. This account will 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 as the contact point 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

- 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

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

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/Marketing/Documents/FedConnect_Ready_Set_Go.pdf
- Register in Grants.gov to receive automatic updates when Amendments to a FOA are posted. However, please note that applications will not be accepted through Grants.gov. <http://www.grants.gov/>. All applications must be submitted through EERE Exchange.