

DOE Grant Announcement: \$184 Million Available for the Next Generation of Cars and Trucks

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Publication Date: January 06, 2011

Overview

The Department of Energy ("DOE") has announced the availability of \$184 million "to accelerate the development and deployment of new efficient vehicle technologies." The DOE will award cooperative agreements to businesses, universities and nonprofits to promote research and development of technologies supporting energy-efficient and environmentally friendly highway vehicles (*i.e.*, cars and trucks). This funding is provided through the Vehicle Technologies Program, whose mission is to reduce consumption of gasoline and diesel fuels by cars and trucks, which account for 55 percent of total U.S. oil use.

There are eight funding categories, or "Areas of Interest" as termed in the Funding Opportunity Announcement ("FOA"), which would be eligible for funding, ranging from the development of fuels and lubricants that increase engine performance to the development of fuel-efficient tires and the creation of greater driver feedback technologies. (DE-FOA-0000239) The DOE requests, but does not require, a brief Letter of Intent regarding the project to be submitted by January 18, 2011. The application due date is February 28, 2011.

This Client Alert details other specifics of the FOA, including project and award information. Reed Smith's Public Policy & Infrastructure Practice has worked with a number of clients in crafting competitive applications for grant funding and complementary strategies to achieve funding, including obtaining support and assistance from members of Congress. We remain available to assist in the preliminary notice and development of a competitive application for funds under these FOAs.

Eight "Areas of Interest" or "AOI"

There are eight funding categories in the FOA, called "Areas of Interest" or "AOI," with a number of Subtopics under each. An applicant must specify which Area of Interest and Subtopic is being applied to. Each Area of Interest comes with its own matching cost share, ranging from 20 percent to 50 percent of total allowable project cost; however, the DOE makes clear that this is a minimum and that a greater share would be more acceptable.

1. **Advanced Fuels and Lubricants Technologies - 20 Percent Matching Requirement.**

This AOI promotes the research and development of fuels and lubricants that promote the fuel efficiency of cars and trucks and reduce their emissions. It specifically targets the promotion of "advanced" fuels to be used by "advanced combustion regime engines," *i.e.*, those internal combustion engines that are high efficiency and emission compliant (P.8 of FOA). It also promotes the research and development for lubricants targeted for these engines. Finally, it promotes the research and development of fuel additives to displace traditional petroleum-derived fuels used in the current fleet of cars and trucks on our nation's roads. In this case, the FOA is looking for additives that are most likely to become commercialized within the next decade. Matching costs under this AOI are 20 percent of project cost.

2. **Lightweighting Materials - 50 Percent Matching Requirement.** This AOI focuses on the production of materials that reduce the weight of the vehicle by 50 percent, making it more fuel efficient. The two materials capable of achieving a 50 percent reduction of weight in passenger vehicles are magnesium and carbon fiber, and are the focus of this AOI (P.8 of FOA). The AOI focuses on the development of these materials by promoting production at a lower cost than methods currently in use. It also promotes demonstration projects to develop new models utilizing magnesium, and to test the effectiveness of those made with carbon fiber that are already in use. Matching costs under this AOI are 20 percent of project cost.

3. **Multi-Material Light-Weight Prototype Vehicle - 50 Percent Matching Requirement.**

Unlike the prior AOI, this AOI promotes the production of a vehicle prototype that is 50 percent lighter than a "baseline light-duty vehicle commercially available in 2002" (P. 10 of FOA). This is to be done as part of the Clean Energy Dialogue between the United States and Canada, *i.e.*, certain tasks to produce the vehicle must be performed in

Canada and the applicant must submit a letter of intent from a Canadian government entity verifying this. Each country is responsible for performing its own tasks; however, any federal funds received are only to apply to those tasks performed in the United States. Also, the cost associated with any work done in Canada will not apply to the non-federal share. However, the FOA notes that "[i]f selected, the entire award value will include the effort performed in Canada" (P.11 of FOA). Matching costs under this AOI are 50 percent of project cost.

4. **Advanced Cells and Design Technology for Electric Drive Batteries - 20 Percent Matching Requirement.** This AOI focuses on the batteries that drive electric vehicles and hybrid electric vehicles. This includes developing the cells and materials that make up these batteries, either by making battery cells and other active materials that provide higher performance over those currently in use; at a significantly less cost; or by reducing the cell or battery weight "through the use of a novel thermal management technology" (P. 14 of FOA). It also focuses on improving the inactive components of an electric drive battery, which make up 25 percent to 30 percent of the batteries' weight. Matching costs under this AOI are 20 percent of project cost.
5. **Advanced Power Electronics and Electric Motors - 20 Percent Matching Requirement.** This AOI focuses on developing "the next generation of power inverters and electric motors" (P. 15 of FOA). These devices are needed to help propel hybrid, battery cell, and fuel cell electric vehicles, and Subtopics include projects that reduce their cost, weight and volume, and that improve their longevity. Matching costs under this AOI are 20 percent of project cost.
6. **Thermoelectrics and Enabling Engine Technologies - 20 Percent Matching Requirement.** This AOI focuses on the efficiencies thermoelectric devices can bring to the production of both conventional and electric vehicles. Thermoelectric devices are those that convert heat directly into electrical energy, for example, by using the waste heat from an internal combustion engine. This AOI promotes the development of such thermoelectric devices as generators, and heating, ventilating and air conditioning systems (HVAC) to encourage their mass use. "Applications shall include a clear path to commercialization in the narrative discussion" (P. 20 of FOA). Matching costs under this AOI are 20 percent of project cost.

7. **Fleet Efficiency - 20 Percent Matching Requirement.** This AOI focuses on improving the efficiency of the fleet of passenger cars and trucks on our nation's highways. Subtopics are improving the efficiency of tires and improving driver behavior. Matching costs under this AOI are 20 percent of project cost.

8. **Advanced Vehicle Testing and Evaluation - 20 Percent Matching Requirement.** This AOI focuses on "the laboratory and field evaluation of advanced technology vehicles and their supporting infrastructure including baseline performance, accelerated reliability, fleet testing, and end-of-life testing" (P. 22 of FOA). This is focusing on testing hydrogen-fueled, fuel cell, and clean natural gas-powered vehicles already in use. Testing shall focus on the areas of acceleration, energy consumption, braking, and time to recharge, among others. Matching costs under this AOI are 20 percent of project cost.

Who is Eligible to Apply for Funds?

The FOA allows most entities to apply for funding, with the exception being those organizations that are considered "501(c)(4) entities under the tax code, *i.e.*, civic leagues, social welfare organizations, and local associations of employees."

Funding, Awards Information and Periods of Performance

The DOE anticipates the maximum awards to any one individual to range from \$1.5 million for Advanced Fuels and Lubricants Projects (AOI # 1) to \$8 million for the Development of Low-Cost Carbon Fiber (AOI # 2) to \$10 million for the development of a Prototype Vehicle (AOI # 3), to as much as \$50 million for the creation of an Advanced Vehicle Testing and Evaluation Program (AOI # 8). It expects to make one to two awards for most Subtopics in the eight AOIs, with the exceptions being four to six awards for the Development of Advanced Cells for Electric Drive Vehicle Batteries (AOI # 4). Periods of performance for each AOI range from 24 to 36 months for Fuel Efficient Tire Projects (AOI # 7), to 60 months for Advanced Vehicle Testing and Evaluation Programs (AOI # 8).

75 Percent of Work to be Performed in the United States

Under the FOA, "applicants must propose at least 75% of the direct labor cost for the project (including subcontractor/ subrecipient labor) will be incurred in the United States unless the applicant can demonstrate to the satisfaction of the DOE that the United States economic interest will be better served through a greater percentage of work performed outside the United States" (P. 34 of FOA). The FOA lists such things as "improved electricity reliability," "increased employment," and "increased exports" as examples of serving the United States economic interest.

Letter of Intent requested by JANUARY 18, 2011

Letters of Intent are requested by the DOE, but are not mandatory, by January 18, 2011. The purpose for the Letter of Intent would be administrative, i.e., to allow the DOE to "organize and expedite the merit review process" (P. 35 of FOA). It should include the name of the applicant, AOI and Subtopic, and Title of Project, and should be sent to jeffrey.kooser@netl.doe.gov. The DOE asks for no additional information beyond this. Given that this is a basic requirement that can be fulfilled relatively promptly, we would recommend submitting a Letter of Intent.

Application Information/Checklist

The FOA requires the following:

1. **Project Performance Site Locations** - The primary site where work will be performed.
2. **Research and Related Other Project Information** - Including project summary/abstract, not to exceed one page; project narrative, not to exceed 25 pages; and project management plan.
 - The **Project Narrative** is broken down further to include these mandatory elements: Project Objectives; Merit Review Criteria Discussion; Discussion of Relevance of Expected Outcomes; Discussion of Roles of Participants; Identification of Multiple Principal Investigators (*i.e.*, those who decide on the process for making decisions on scientific/technical direction and resolving conflicts); Identification of Facilities to be Used; Identification of Equipment; and a Statement of Project Objectives (SOPO) that

provides a clear discussion of objectives, scope of work, tasks to be performed and deliverables.

- The **Project Management Plan** is broken down to include these mandatory elements: Executive Summary; Risk Management Plan; Milestone Log for each budget period of the project; Funding and Costing Profile; Project Timeline; Success Criteria for each decision point in the project; Partnership or Teaming Agreements; and Facilities and Resources Information.
1. **Commitment Letters from Third Parties** - If any third parties are involved in cost-sharing, a commitment letter from same must be included.
 2. **Profiles for each key research person involved in the project.**
 3. **Budget information, including a cumulative budget and separate budget for each year in question.**
 4. **Completed Environmental Questionnaire, including information on compliance with all key environmental statutes and regulations.**

Application Review

For AOI # 1-7, projects will be evaluated under the following three criteria:

1. **Technical Merit of Technology (50 Percent).** Includes responsiveness to the goals and requirements of the announcement; innovativeness of proposed technology; and potential to reduce or support the reduction of the environmental impacts of the transportation sector.
2. **Potential Market Impact/Advancement (30 Percent).** Includes adequacy and thoroughness of approach to meet project objectives; demonstration of prior success in conducting research and development; and adequacy and clarity of the path to commercialization to positively impact the reduction of greenhouse gases.
3. **Application and Team Member Roles, Capabilities, and Facilities (20 Percent).** Includes appropriateness and qualifications of personnel, equipment and facilities.



For AOI # 8 (Advanced Vehicle Testing and Evaluation):

1. **Facilities (40 Percent).** Includes adequacy and availability of testing facilities; adequacy of the project team's alternative fuel vehicle infrastructure to support advanced powertrain vehicles; and availability of one or more fleets with operations in diverse geographic and climatic environments within the United States for consistently fleet testing.
2. **Applicant and Team Member Roles and Capabilities (30 Percent).** Includes qualifications of key personnel related to advanced vehicle technology and vehicle evaluation; prior success in conventional and advanced vehicle testing; and demonstrated knowledge and understanding of advanced vehicle powertrains and energy storage systems.
3. **Project Management and Testing Plans (30 Percent).** Includes adequacy and completeness of the proposed testing plan to execute tasks required for complete testing of the vehicle; and thoroughness of the operation and maintenance plans for the vehicle.

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