

Recovery Act, Office of the Biomass Program, Funding Opportunity Announcements Special Notice

The U.S. Department of Energy's (DOE's) Office of the Biomass Program (OBP) intends to issue two Funding Opportunity Announcements (FOAs) to address research and development efforts related to intermediate ethanol blends and algal and advanced biofuels. DOE expects to publish both FOAs in the summer of 2009. This special advance notice is intended to provide potential applicants the opportunity to develop partnerships and begin the process of gathering data to prepare their applications.

No applications or questions will be accepted at this time.

Brief descriptions of the two FOAs are as follows:

Recovery Act Funding for Expansion of Infrastructure for Ethanol Blends (open for 60 days)

The purpose of this prospective FOA is to increase the availability and use of potential ethanol blends **up to** 85 percent ethanol. Two areas of interest have been identified to increase both the awareness and the use of ethanol blends for transportation.

Topic Area 1: Refueling Infrastructure for Ethanol Blends

DOE will be seeking cost-shared projects to expand the infrastructure at retail fueling locations to accommodate gasoline-ethanol blends. Expected projects may include modifications, upgrades or expansions of existing infrastructure at retail stations, or the installation of new equipment to accommodate blends of ethanol.

Topic Area 2: Education and Outreach for Ethanol Blends

DOE is seeking projects which will increase public awareness of the benefits, safety, and use requirements of ethanol blends. Projects are sought which will present accurate, unbiased, factual information on ethanol to targeted audiences. Proposed projects will be expected to include detailed plans with identified metrics for measuring the effectiveness of the education effort.

Recovery Act Funding of Development of Algal Biofuels and Advanced Fungible Biofuels through Consortia (open for 90 days)

The purpose of this prospective FOA is to address the interface between fundamental and applied research in these respective areas by utilizing consortia with the necessary expertise to effectively and efficiently develop algal and advanced fungible biofuels technologies. Note that DOE will not be seeking to construct new facilities but leverage existing capabilities and resources to the maximum extent possible. DOE expects to fund projects over multiple years. Two topic areas will be included in the FOA. Each is described in more detail below.

Topic Area 1: Algal Biofuels Research and Development

The primary objective of this topic area is to develop cost effective algae based biofuels that are competitive with their petroleum counterparts. The research and development

will focus on the following five key barriers as identified in DOE's National Algal Biofuels Roadmap:

- Feedstock Supply: Strain development and cultivation;
- Feedstock Logistics: Harvesting and extraction;
- Conversion/Production: Accumulation of intermediate and synthesis of fuels and co-products;
- Infrastructure: Fuel testing and standardization; and
- Sustainable Practices: Life-cycle and economic analyses, siting, and resources management.

Consortium Details:

DOE seeks the formation of partnerships in this area because a suite of technologies is required for algal biofuels commercialization and because cost sharing can maximize the leveraging of public funds. Consortia may include leading scientists from an appropriate mix of academia, government and/or non-government laboratories, user facilities (e.g. the Joint Genome Institute), non-profit organizations, and private industry. Additionally, the consortia should seek to utilize 'best-in-class' technologies, and engage end users and other field experts outside the traditional disciplines of science and engineering.

At a minimum, the partnerships should have the expertise to address the following aspects:

- Fundamental strain biology as it relates to cultivation;
- Process engineering and modeling;
- Algae processing (harvesting and intermediates extraction) and resource management; and
- Production of value added co-products.

The ideal partnerships will have existing facilities that enable technology demonstration and analytical measurements of the integrated process at larger than bench-scale. The development effort will support three years with the intent of accelerating technology development.

Topic Area 2: Advanced Fungible Biofuels

The primary objective of this topic area is to develop technology pathways leading to cost effective (compared to petroleum based fuels) conversion of biomass to advanced biofuels other than cellulosic ethanol with particular interest in bio-based hydrocarbon fuels, e.g. green gasoline and diesel. The technology pathways proposed can employ biological, thermochemical, and/or chemical conversion of cellulosic or non-food natural oil based feedstocks. This effort will focus on the development of cost competitive, infrastructure-compatible, advanced fungible biofuels, such as green gasoline and green diesel in an 'accelerated-to-market' timeframe. The areas of research could include the following:

- Chemical conversion of cellulosic sugars;
- Selective thermal processing technologies;
- Utilization of petroleum refining technology for conversion of biocrude;
- Catalyst specificity and lifetime;
- Engineering designs;

- Biomass processing catalyst development; and
- Biomass-to-liquids (fuels) catalyst development.

The development effort will support three years with the intent of accelerating the technology development. The resulting advanced fungible biofuel should be of a high energy density and compatible with existing hydrocarbon fuel distribution and end use systems.

Consortium Details:

In order to efficiently and effectively develop and deploy advanced fungible biofuels, a consortium of partners is needed. Consortia may include leading scientists from academia, government and/or non-government labs, non-profit organizations, and private industry that can bring a multidisciplinary, collaborative approach to solving the scientific barriers associated with making cost effective biomass-derived hydrocarbon compatible fuels. Because the research will lead to deployment of the technologies, it will be necessary to engage industry and other partners to cost share to maximize the leveraging of public funds. The consortia will need to involve an organizational teaming effort where the teams bring unique capabilities that provide a synergy to the overall development effort.

This Special Notice is intended to provide potential applicants advance notice of two upcoming Office of the Biomass Program Funding Opportunity Announcements. Prospective applicants should begin developing partnerships, formulating ideas, and gathering data in anticipation of the issuance of these FOAs. Please do not respond or submit questions in response to this Special Notice.