FINANCIAL ASSISTANCE
FUNDING OPPORTUNITY ANNOUNCEMENT

U.S. Department of Energy
Energy Efficiency and Renewable Energy
Golden Service Center

Advanced Biomass Feedstock Logistics Systems II

Funding Opportunity Announcement Number: DE-FOA-0000836

Announcement Type: Initial

CFDA Number: 81.087

Issue Date:	**January 25, 2013**
Concept Paper Due Date:	**February 15, 2013, 5:00 PM Eastern Time**
Application Due Date:	**March 22, 2013, 5:00 PM Eastern Time**

Applicants must submit a Concept Paper by February 15, 2013 to be eligible to submit a Full Application.

REGISTRATION REQUIREMENTS

There are several one-time actions before submitting an Application in response to this Funding Opportunity Announcement (FOA), as follows:

- 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 as the contact point for each submission.

  The Applicant will receive an automated response when the [Letter of Intent or] Application is received. This will serve as a confirmation of receipt. Please do not reply to the automated response. The Applicant will have the opportunity to re-submit a revised [Letter of Intent or] Application for any reason as long as the relevant submission is submitted by the specified deadline. The Users' Guide for Applying to the Department of Energy EERE Funding Opportunity Announcements is found at https://eere-exchange.energy.gov/Manuals.aspx.

  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 those registrations as soon as possible**.
  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 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 and concept papers will not be accepted through Grants.gov: http://www.grants.gov/.

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SECTION I – FUNDING OPPORTUNITY DESCRIPTION

Description

1. Background and history

The U.S. Department of Energy (DOE), Office of Energy Efficiency and Renewable Energy (EERE), announces a Funding Opportunity Announcement (FOA) for financial assistance from the Biomass Technologies Office (BTO) (formerly Office of Biomass Programs). As stated in BTO's Multi-Year Program Plan (http://www1.eere.energy.gov/biomass/pdfs/mypp_april_2011.pdf), BTO directly supports four key tenets of the Office of Energy Efficiency and Renewable Energy's (EERE's) Strategic Plan by developing technologies that will (a) "Dramatically reduce dependence on foreign oil," (b) "Promote the use of diverse, domestic and sustainable energy resource," (c) "Establish a domestic bioenergy industry," and (d) "Reduce carbon emissions from energy production and consumption." Technologies developed during successful completion of projects resulting from this FOA are directly aligned with these goals.

The lack of logistics systems capable of handling and delivering sufficiently high tonnage year-round volumes of high quality feedstocks to support the rapid escalation of cellulosic biofuels production has been identified as a significant barrier to the expansion of a sustainable domestic biofuels industry. DOE issued a Request for Information (RFI), (DE-FOA-0000791) in November, 2012 to solicit comments on efficient strategies and technologies for reducing the delivered cost of lignocellulosic biomass, increasing industry-accessible biomass volumes, and ensuring input quality specifications required by a variety of biorefinery processes. Responses to the RFI from industry and other interested parties were considered during the framing of this FOA.

The National Biofuels Action Plan, released in October, 2008, provides more discussion of the issues and needs of the domestic biofuels industry. The report may be downloaded at http://www1.eere.energy.gov/biomass/pdfs/nbap.pdf.

Interested Applicants are encouraged to refer to the additional information presented in several feedstock logistics reports at the following website: www.inl.gov/bioenergy. Recently released design reports for both herbaceous and woody feedstocks are available at www.inl.gov/bioenergy/uniform-feedstock. Please also be aware of the "Billion Ton Update", which was released in 2011 and is available online at http://www1.eere.energy.gov/biomass/pdfs/billion_ton_update.pdf.

In fiscal year 2009 (FY09), the BTO (then Office of the Biomass Program) issued a FOA in this area and in FY10 funded five "high tonnage logistics projects" to develop purpose-designed, prototype equipment to reduce the logistics-related costs associated with the feedstock supply chain for a variety of crop species. For short descriptions of these five projects, see http://www2.eere.energy.gov/biomass/past_solicitations.html#High_Tonnage_Feedstocks or http://www2.eere.energy.gov/biomass/feedstocks_links.html. While each of these projects has made significant progress toward achieving the stated goals of that FOA, new challenges have emerged as a result of this work, as well as in some of the DOE-funded Integrated BioRefinery (IBR) projects. In particular, biomass physical and chemical quality parameters have repeatedly been identified as significant challenges to the smooth operation and economic viability of

biorefineries. This FOA will focus on developing and demonstrating strategies, equipment, and rapid analytical methods to manage feedstock quality within economic constraints throughout the feedstock supply chain. The main effort in Proposals must be directed toward full-scale demonstration of integrated feedstock supply chain systems that can deliver the volume of high quality, affordable, high impact feedstocks required by commercial biorefineries over a significant geographic area in the United States.

In addition to the above-mentioned five competitively Awarded "high tonnage logistics projects", this FOA extends previous core efforts at DOE national laboratories, and builds from the results of past feedstock logistics projects. For example, BTO sponsored a Biomass Densification Workshop at Idaho National Laboratory (INL) on August 23-24, 2011. At this workshop, topics were presented under the theme "Transforming Raw Biomass to Feedstock", which explained and demonstrated many of the themes central to this FOA – especially those having to do with feedstock densification and physical and chemical quality management. A report resulting from this workshop is available at www.inl.gov/bioenergy/densification. The workshop also featured a demonstration of INL's deployable Process Demonstration Unit (PDU), a 5-15 ton per hour preprocessing Research & Development (R&D) facility located at INL. The PDU combines various pieces of biomass logistics equipment that can be configured to accommodate a wide variety of research and/or production needs, including testing new technologies and feedstocks, formatting a wide variety of biomass types to meet the material in-feed specification for the entire spectrum of biomass conversion processes. Work done under this funding opportunity may leverage past work on the PDU, and could involve testing new PDU configurations that could include new equipment designs.

DOE plans to support the increased production of high volumes of sustainably produced domestic biofuels from cellulosic feedstocks by seeking Proposals to design new systems or adapt existing systems to handle industrial scale volumes of cellulosic feedstocks from the harvest point to the throat of the biorefinery reactor.

2. Statutory Authority

Energy Policy Act of 2005

This announcement is being issued under authorization of the Energy Policy Act of 2005 (EPAct 2005), Section 932 (see http://www.gpo.gov/fdsys/pkg/PLAW-109publ58/pdf/PLAW-109publ58.pdf). While federal policies fostering ethanol production have been in place for more than two decades,[1] these were renewed and strengthened by EPAct 2005, Section 932(d), in which the Secretary is directed to "…encourage the demonstration of a wide variety of lignocellulosic feedstocks and the demonstration of the collection and treatment of a variety of biomass feedstocks." The acceptable feedstocks for this FOA are expected to contribute significantly to the goal of 21 billion gallons of advanced biofuels by 2022.

Energy Independence and Security Act of 2007

Hydrocarbon biofuels such as gasoline, diesel, and jet range fuels will likely play a significant role

[1] *Biofuels – At What Cost? Government support for ethanol and biodiesel in the United States*. Earth Track, Inc. for Global Subsidies Initiative of the International Institute for Sustainable Development. October 2006. www.globalsubsidies.org

in meeting the Energy Independence and Security Act (EISA) Section 202 (see Appendix E) renewable fuel standard (RFS) goals. Twenty-one of the 36 billion gallons per year (BGY) of renewable fuels mandated by 2022 are required to be "advanced biofuels", which are defined as renewable fuels, other than ethanol derived from corn starch, that have life cycle greenhouse gas emissions that are at least 50% less than baseline life cycle greenhouse gas emissions, as defined in EISA Section 201 (see Appendix E). Of the mandated 21 BGY of advanced biofuels, 16 BGY – i.e., >75% of advanced biofuels – are expected to be "cellulosic biofuel", which is defined as a renewable fuel derived from any cellulose, hemicellulose, or lignin that is derived from renewable biomass and that has lifecycle greenhouse gas emissions, as determined by the Administrator, that are at least 60% less than the baseline lifecycle greenhouse gas emissions, as defined in EISA Section 201.

If we assume, for purposes of this calculation, that all of the 16 BGY of cellulosic biofuels will be produced using a variety of conversion processes with an average conversion rate of 60 gallons of fuel/dry ton (DT) of biomass by 2022, then approximately 267 million DT (MDT) of lignocellulosic feedstocks will be required annually by biorefineries, by 2022. This enormous quantity of biomass will require a combination of producers, contract harvesting operations, freight haulers, biorefineries, etc., to coordinate efforts to harvest, package, store, preprocess and transport the biomass required. Only an efficient and adaptable, nationwide supply system will be capable of reliably delivering adequate, year-round quantities of high quality feedstocks to the biorefinery industry at an affordable price.

3. Purpose and Objectives of this FOA

The intent of this FOA is to stimulate the design and demonstration of comprehensive, integrated commercial-scale systems to handle the harvesting, collection, preprocessing, transport, and storage of sufficient volumes of sustainably produced lignocellulosic feedstocks required to achieve the rapid expansion of the domestic biofuels industry to support meeting the requirements of the EISA 2007 RFS.

DOE is seeking Applications from eligible entities, teams or consortia that include at least one Original Equipment Manufacturer (OEM) of industrial/agricultural equipment used in harvest, collection, preprocessing, transport, and/or storage of lignocellulosic feedstocks. In addition, each Application must include at least one biorefinery partner that is developing or commercializing a process to manufacture advanced cellulosic biofuel product. It is expected that the biorefinery partner(s) will contribute, at a minimum, the in-feed specifications for its conversion process, which shall serve as the target quality parameters for Applications submitted in response to this FOA. One entity from each set of consortium partners must be designated as the lead organization (i.e., Applicant) by members of the consortium.

This FOA requests that Applicants define, design, fabricate, and demonstrate a comprehensive, integrated, industrial-scale feedstocks logistics handling system capable of supplying "high impact feedstocks" (defined in Section I.4., below) to support domestic production of advanced biofuels. All aspects of harvest, collection, preprocessing, handling, transport, storage, and delivery should be addressed comprehensively, and as an integrated system, in the Proposal. In doing so, the (anticipated) needs of a partner biorefinery process should help guide design specifications, so as to deliver biomass in a form that feeds easily and efficiently into the specific conversion process, and

at quality specifications set by the biorefinery process needs. All feedstock materials utilized must be domestically available.

Eligible Applicants, teams or consortia may design entirely new equipment, use existing equipment, modify existing equipment, or propose some combination of these to accomplish their goals. To support DOE's goals, it is expected that all proposed system components will be operational within one to two years after Awards are made. DOE also expects that successfully completed projects under this FOA will lead to commercialization of the project components and systems. Only those Applicants who are willing and able to diligently pursue extensive system demonstration and also have a sound business strategy to deploy, license, and market the system and its components should apply. As appropriate, Applicants must secure licensing, use, and/or manufacturing rights for any equipment or components used in the proposed comprehensive system.

A limited amount of preparatory work to support the design of the proposed project system will be permitted within the scope of the project. Typically, up to 10% of the total project budget may be proposed for the preparatory R&D, but the amount is subject to negotiation after notification of selection for negotiation of an Award. Preparatory work may include limited R&D, including expenses for equipment, salaries, and supplies.

The Applicant must provide cost share for the project (see Section III.B. for details). Total project budget includes both the DOE and cost share funds.

4. Definition - Acceptable Feedstocks

This FOA will target *High Impact Feedstocks*, defined as:

> a feedstock that is domestically available and has the agronomically and ecologically sustainable ultimate availability potential of at least 50 million dry metric tonnes of lignocellulosic biomass per year. Multiple feedstocks may be combined to satisfy this requirement if the proposed conversion technology is shown to be capable of converting each of the feedstocks that constitute the 50 million dry metric tonnes per year. Alternately, the feedstock must be domestically available and have the agronomically and ecologically sustainable ultimate availability potential to produce at least 1 billion gallons per year of an acceptable biofuel.

No plant based material that is generally intended for use as food or animal feed may be employed as a feedstock.

For purposes of this FOA, algae and animal wastes are NOT Acceptable Feedstocks.

5. Technical Focus Areas

Other Federal agencies are responsible for R&D directed at improving sustainable biomass production systems, developing best management practices, breeding, and new variety development, etc. Therefore, BTO has focused attention on logistics-related costs and feedstock quality, and how these costs can be significantly reduced through the use of new configurations or modifications of existing equipment, purpose-designed logistics systems with improved operational

efficiencies, and strategies to manage feedstock variability (both in terms of quality and quantity) before delivery to the biorefinery process.

The implementation of a nationwide biomass supply system will require leveraging existing infrastructure where possible, combined with designing and deploying purpose-designed equipment that evolves and improves over time through operational experience in the field. New logistics strategies and technologies for integrated and efficient feedstock supply chain systems will emerge to address key challenges, such as high variability in both biomass delivery format and quality, instability during storage, low bulk and energy density, poor flowability and handling characteristics, and variable conversion performance.

This FOA is intended to (1) leverage the efforts of industry to design, build, and demonstrate commercial-scale logistics equipment and integrated feedstock supply systems that can be reliably and affordably scaled to deliver the quantities of lignocellulosic feedstocks required by a commercial biorefinery operation (i.e., 250,000 – 1,000,000 DT/yr, or larger); and (2) demonstrate the added-value that preprocessing treatments can confer upon feedstocks to meet conversion process in-feed specifications in a well-characterized feedstock/conversion pathway process identified by the Applicant. The scope of this FOA includes all elements of the logistics supply chain – i.e., harvest, storage, preprocessing, and transport, including preprocessing equipment (e.g., driers, milling and comminution equipment, chemical and mechanical separations equipment, blending equipment, densification devices, etc.). It also includes the development and demonstration of rapid analytical instrumentation and calibrated methods capable of monitoring relevant physical and chemical quality attributes throughout the supply chain from field or forest to the throat of the biorefinery. The logistics system developed needs to be capable of seamless integration with the biomass production system(s) on the upstream side, and the biomass conversion in-feed components on the downstream side, while striving to satisfy feedstock quality and cost goals that are appropriate for the specified conversion process.

The experimental data and technological innovations or inventions produced as a result of successful efforts in the area of feedstock logistics are crucial to realizing the BTO's goal of producing advanced biofuels with desirable qualities for use as hydrocarbon transportation fuels in the gasoline, diesel, and jet range (aka, "drop-in fuels") at less than $3 per gallon of gasoline equivalent ($3/GGE). Ultimately, reducing the delivered cost of biomass feedstocks that meet the in-feed requirements of a variety of biomass conversion processes brings more and better quality feedstock material into the system, which directly supports meeting RFS goals.

The two Technical Barrier Areas addressed by this FOA are described below. **All Applications must address <u>both</u> Technical Barrier Areas.**

<u>Technical Barrier Area 1: Feedstock Logistics Costs</u>

BTO's overarching goal is to develop and validate thermochemical and biochemical biomass conversion technologies capable of producing drop-in biofuels at $3 per gallon of gasoline equivalent ($3/GGE), or less, by 2017. A contributing goal is to develop feedstock logistics technologies and systems that can reliably and sustainably deliver on-spec feedstock(s) to the conversion reactor throat at or below $80/dry ton (i.e., $80/DT) by 2017. Therefore, at 60 gal/DT conversion yield, the BTO's 2017 target for feedstock cost will consume up to $1.33/GGE (~44%)

of the $3/GGE overall target production cost for advanced biofuels. Lower feedstock costs (i.e., <$80/DT) are, of course, preferred.

The $80/DT target includes all costs associated with feedstock up to the point where it is introduced into the throat of the conversion process reactor. It is comprised of a grower payment plus logistics-associated costs. **For the purpose of this FOA, a target of $50/DT, or less, is being set for all cumulative logistics costs (i.e., all costs incurred between harvesting the biomass through to the throat of the conversion reactor, including those associated with harvest , collection, preprocessing (e.g., drying, grinding, blending, etc.), and transportation and handling costs).** Subsidies or other forms of Federal, State of Local government aid shall not be applied to achieve the $50/DT cost target.

Specific goals that would support BTO in achieving the $3/GGE target through a reduction in feedstock logistics costs, and will be encouraged in this FOA include:

- The design, deployment, and demonstration of new and/or existing equipment to demonstrate significant reduction in the logistics-related costs of a defined "high impact feedstock", paired with a specific conversion technology pathway that primarily produces a biofuel product.
- Leverage existing high-capacity handling infrastructure where possible, and support the development and demonstration of preprocessing equipment that produces formatted[2] biomass for a defined "high impact feedstock" system that is compatible with existing or new high-capacity handling and transport infrastructure, as well as the needs of the biorefinery partner(s).

Any integrated feedstock logistics system developed under an Award resulting from this FOA must be demonstrated at commercial scale to enable collection of sufficient data to reliably and accurately document the economics around the new logistics system. Such an economic analysis will be a mandatory deliverable for all project Awards made. A second mandatory deliverable will compare the economics of the new system with a similar analysis of a well characterized base case system using only existing technology and machinery, in order to assess the impact of the work performed. Completion of an economic assessment of a base case system early in the project may provide a convenient opportunity for a Go/No-Go review for projects funded from this FOA.

Technical Barrier Area 2: Feedstock Quality

Feedstock quality characteristics have recently emerged repeatedly as critical variables in the success of biorefinery operations and their economic viability. Feedstock quality parameters can be assigned to one of three major categories: physical, chemical, and conversion performance characteristics. Examples of physical parameters include particle size and shape, particle size distribution, bulk density, bridging behavior in feed hoppers, and other performance characteristics that may affect a variety of handling and conveyance operations. Examples of chemical parameters include moisture and ash content, BTU content, carbohydrate, and lignin content. Examples of

[2] The term "formatted biomass" refers to the physical characteristics of raw biomass that has been preprocessed and packaged in some way to facilitate over-the-road transport, conveyance at the biorefinery, and in-feed into the biorefinery process. For instance, herbaceous materials may be densified into either large round or large square bales at the field site prior to transport. Woody crops may be chipped at the forest landing prior to transport. Pellets and briquettes are other formatted forms of biomass.

conversion performance characteristics include changes in biofuel product yield/DT of input biomass, process kinetics (i.e., throughput), and capital and operating costs.

An additional challenge to consider is the variable nature of the in-feed requirements of different conversion processes that are currently being developed, and may be developed in the future. For example, certain biochemical conversion processes are more efficient and may prove profitable when fed herbaceous feedstocks at less than 20% moisture content, <7% ash content and >59% carbohydrate content. By contrast, certain fast pyrolysis processes may produce a higher bio-oil yield when using woody feedstocks at less than 10% moisture content, <1% ash content, and 2-6 mm particle size. The conversion process in-feed specifications of the biorefinery process being targeted in submitted Proposals must be clearly defined in each Proposal, and will establish the target quality goals for the project.

New logistical systems can be developed and deployed to overcome many/all of the inefficiencies present today in the supply chain while simultaneously providing desired feedstock materials that meet or exceed biorefinery in-feed quality specifications. By adding value to the feedstock through preprocessing operations that contribute to maintaining and/or enhancing the physical, chemical, and/or conversion performance quality characteristics, the overall costs of the final biofuel product may be reduced, thus contributing to achieving the overall $3/GGE target. Integrated logistical systems may need to incorporate a combination of technologies, techniques, or strategies to manage the appropriate constellation of feedstock quality characteristics. Some examples include, but are not limited to, harvest timing, field drying strategies, comminution, blending, packaging format, and storage management.

Feedstock quality characteristics are crucial to maintaining sustainable long-term biorefinery operations and economics because they relate directly to process yield and throughput, and process down-time. Therefore, methods, techniques, and instrumentation capable of rapidly, accurately, reliably and inexpensively monitoring relevant feedstock quality parameters at any point in the supply chain (i.e., from field/forest to the throat of the conversion process at the biorefinery) would be extremely valuable tools for the industry. Efforts to develop mobile, easy-to-use, reliable instrumentation coupled with calibrated and validated rapid analytical methods that can quantify process relevant in-feed parameters are highly encouraged in this FOA.

Specific goals that would support BTO and the biorefinery industry in successfully developing strategies and systems that ensure biorefinery in-feed requirements are reliably met year-round, and that will be encouraged in this FOA, may include:

- Development, testing, and demonstration of analytical instrumentation and calibrated and validated rapid analytical methods that can be used at any point in the feedstock supply chain (i.e., from field or forest to throat of the conversion reactor at the biorefinery) to monitor the feedstock quality characteristics that are relevant to the partner biorefinery's process.
- Development, testing, and demonstration of integrated new or existing machinery or strategies that can provide a year-round supply of a defined "high impact feedstock" that reliably meets or exceeds a partner biorefinery's defined set of in-feed specifications.

- Development and demonstration of feedstock supply chain strategies and technologies for a defined "high impact feedstock" system that may not necessarily reduce logistics-related

costs, but which upgrade feedstock quality characteristics in ways that have beneficial downstream effect(s) (e.g., improved conversion process yield and/or kinetics, decreased capital, and/or operating costs) that result in a reduced overall cost of a biofuel produced from that feedstock must be clearly explained in the Proposal. If this approach is taken, it will be incumbent upon the Applicant to provide convincing evidence in the Proposal that the improvements in the quality of the selected "high impact feedstock" are highly likely to result in a significant net reduction (relative to a benchmark case) in the overall cost of biofuel production toward or below the overall target cost of $3/GGE at pilot-scale, or larger. Any additional feedstock logistics cost incurred above that of the base case system by any of these strategies must be offset by some clearly demonstrable downstream benefit to the overall process economics.

The information and technologies sought by this FOA are crucial to developing technology innovations and demonstrating novel and improved feedstock logistics systems that will drive down the cost of production of drop-in biofuels, supporting BTO's goal of $3/GGE, or lower, by 2017. Once this goal is achieved, the development and growth of a biofuels industry that can contribute to the RFS will be accelerated, while simultaneously realizing a large economic opportunity for the United States of America, and reducing petroleum imports.

We are seeking Applications for demonstration projects that address both of the Technical Barriers described above. It is intended that Applications to this FOA will address goals and objectives that may include a mixture of R&D, prototype design and construction, alteration of existing equipment, and field-scale demonstration. Projects are envisioned to require a 2-3 year period of performance. At least one Go/No-Go decision point will be required during the project, and it/they should be logically placed to separate distinct Budget Periods of the project. The Go/No-Go decision point(s) should be clearly identified in the Proposal submitted, and may be negotiated further during the Award process.

Successful Applicants will:

1) Include at least one OEM as a partner in the project.
    a. Provide a business strategy for deploying, licensing, and marketing new equipment developed in the project.
2) Include at least one biorefinery partner in the project. At a minimum, the biorefinery partner will define the target conversion process pathway, the primary biofuel product(s), the preferred feedstock for the conversion process, and the in-feed specifications for that process.
3) Provide adequate documentation to support the selected feedstock for the project as a "high impact feedstock".
4) Develop a comprehensive economic model for a base case (i.e., reference or benchmark) feedstock logistics system for the selected "high impact feedstock".
5) Design and/or implement and demonstrate a field-deployable, calibrated, and validated feedstock quality assessment system capable of monitoring feedstock characteristics that are pertinent to the selected biorefinery process (and has commercialization potential).
6) Describe the plan for development and demonstration of a novel, fully integrated feedstock logistics system at a level sufficient to verify the functionality, reliability, and economics of the system.
    a. Conduct the project in such a way as to demonstrate the proposed technology to a

level at which meaningful techno-economic analysis (TEA) can be performed.

b. Demonstration activities should commence within 1-2 years of the project Award date.

7) Describe and analyze the anticipated economic and operational impacts of any and all feedstock quality management strategies to be implemented during the proposed project.
   a. Develop, describe, and justify the proposed pathway for the harvest, storage, preprocessing, and transport of cellulosic feedstocks to a biofuel production facility that reduces the feedstock logistics-associated costs and/or the overall production cost of the biofuel product.
   b. Discuss how the project will document and deliver to DOE its analysis of logistics-related costs.
   c. Discuss the process by which the project will document and deliver to DOE information about the effects of logistics improvements on feedstock quality characteristics, as well as any potential downstream effects of logistics-related feedstock quality improvement throughout the supply chain.
   d. If appropriate, provide a credible strategy that will provide data and information sufficient to validate any projected decrease in overall conversion-related or final product production costs.
8) Provide information regarding the parameters for which data will be collected and analyzed to enable comprehensive analysis of technical, economic, and environmental performance. Applicant is responsible for selecting the appropriate data for project base case. Applicants must also describe datasets and other information that will be shared publicly via the Bioenergy Knowledge Discovery Framework (https://www.bioenergykdf.net/) so that project-generated information can be leveraged by other research and analysis. The table below serves as a suggestion of the types of information and data sets which may be used to determine the base case.

Example Table for Switchgrass Logistics Supply Chain Operational Parameters

Operation	**Machine Make/model**	**Purpose**	**Parameter**	**Value**	**Units**
Feedstock			Moisture content		% fresh weight
			Available biomass/acre		tons/acre
			Harvestable biomass/acre		tons/acre
			Annual harvest window		days/yr
Harvest	Machine #1	Mower conditioner	Horsepower rating		h.p.
			Fuel type		diesel
			Fuel consumption		gal/hr
			Operating hours		hrs/day
			Downtime		%
			Wage for operator		$/hr

			Capacity		tons/hr
	Machine #2	Baler	Horsepower rating		h.p.
			Fuel type		diesel
			Fuel consumption		gal/hr
			Operating hours		hrs/day
			Downtime		%
			Wage for operator		$/hr
			Capacity		tons/hr
			Format		Large square bales
			Bulk density of formatted feedstock		lbs/cu. ft.
	Machine #3	Roadsiding	Horsepower rating		h.p.
			Fuel type		diesel
			Fuel consumption		gal/hr
			Operating hours/day		hrs/day
			Downtime		%
			Wage for operator		$/hr
			Capacity		bales/hr
			Bale stack height		# bales
			Bale stack width		feet; inches
			Bale stack length		feet; inches
Field storage	Covering	Tarp	Tarp material		describe
			Tarp dimensions		L x W
			# Tarps/stack		integer
			Tarp cost		$/tarp
			Tarp lifetime		Months
			Labor		$/hr
			Labor		hrs/stack
		Pole barn	Dimensions		L x W x H
			Roofing material		type
			Total cost		$
			Lifetime		years
			Machine time to move bales		$/hr
			Labor to move bales		$/hr
			Time to move bales		hrs/bale
Transport #1		Short haul			
Pre-processing #1		Meet conversion			

		process in-feed specs and facilitate transport			
Transport #2		Longer haul	Increase bulk density to increase transportation efficiency		$/ton/mile
Pre-processing #2		Meet conversion process in-feed specs			
Conveyance at biorefinery		Delivery to conversion reactor throat			

SECTION II – AWARD INFORMATION

A. Type of Award Instrument

Cooperative Agreements

DOE anticipates Awarding cooperative agreements under this program announcement (See Part VI.B. Statement of Substantial Involvement).

B. Estimated Funding

Amount Appropriations Dependent

The Administration has requested approximately $5,700,000 in FY 2013 for this program. The actual level of funding, if any, depends on appropriations for this program. Funding for all Awards and future budget periods are contingent upon the availability of funds appropriated by Congress for the purpose of this program and the availability of future-year budget authority. It is DOE's intent that projects resulting from this FOA will be fully funded in FY 2013.

C. Maximum and Minimum Award Amount

Ceiling (i.e., the maximum amount for an individual Award made under this announcement): $5,700,000

Floor (i.e., the minimum amount for an individual Award made under this announcement): $1,500,000

D. Expected Number of Awards

Number of Awards Depending on Amount

DOE anticipates making 1-4 Awards under this announcement depending on the amount of each Award.

E. Anticipated Award Amount

Award Amount Range

DOE anticipates that Awards will be in the $3,000,000 - $5,700,000 range for the total project period.

F. Period of Performance

Number of Years

DOE anticipates making Awards that will run for up to 3 years.

G. Type of Application

New Applications Only

DOE will accept only new Applications under this announcement (i.e., Applications for renewals of existing DOE funded projects will not be considered).

H. Performance of Work in the United States

EERE strongly encourages interdisciplinary and cross-sector collaboration spanning organizational and national boundaries. Such collaboration enables the achievement of scientific and technological outcomes that were previously viewed as extremely difficult, if not impossible.

EERE requires all work under EERE funding agreements to be performed in the United States – i.e., prime Recipients must expend 100% of the total project cost in the United States.

Applicants and prime Recipients may request a waiver of this requirement. Applicants must include a written waiver request in the Full Application. Prime Recipients must submit any waiver requests in writing to the assigned DOE Contracting Officer. The DOE Contracting Officer has discretion to waive this requirement if he/she determines that it will further the purposes of this FOA and is otherwise in the interests of EERE. See Section IV.C.3.k.xii. of the FOA for waiver request information.

SECTION III - ELIGIBILITY INFORMATION

A. Eligible Applicants

1. Individuals

U.S. citizens and lawful permanent residents are eligible to apply for funding as a prime Recipient or subrecipient.

2. Domestic Entities

For-profit entities, educational institutions, and nonprofits[3] that are incorporated (or otherwise formed) under the laws of a particular State or territory of the United States are eligible to apply for funding as a prime Recipient or subrecipient.

State, local, and tribal government entities are eligible to apply for funding as a prime Recipient or subrecipient.

DOE/NNSA Federally Funded Research and Development Centers (FFRDCs) and DOE Government-Operated Government-Owned laboratories (GOGOs) are eligible to apply for funding as a prime Recipient or subrecipient.

Non-DOE/NNSA FFRDCs and non-DOE GOGOs are eligible to apply for funding as a subrecipient, but are not eligible to apply as a prime Recipient.

Federal agencies and instrumentalities (other than DOE) are eligible to apply for funding as a subrecipient, but are not eligible to apply as a prime Recipient.

3. Foreign Entities

Foreign entities, whether for-profit or otherwise, are eligible to apply for funding under this FOA.

Other than as provided in the "Individuals" or "Domestic Entities" sections above, all prime Recipients receiving funding under this FOA must be incorporated (or otherwise formed) under the laws of a State or territory of the United States. If a foreign entity applies for funding as a prime Recipient, it must designate in the Full Application a subsidiary or affiliate incorporated (or otherwise formed) under the laws of a State or territory of the United States to be the prime Recipient. The Full Application must state the nature of the corporate relationship between the foreign entity and domestic subsidiary or affiliate. Foreign entities may request a waiver of this requirement in the Full Application. See Section IV.C.3.k.xii for waiver request information. The DOE Contracting Officer has

[3]Nonprofit organizations described in section 501(c)(4) of the Internal Revenue Code of 1986 that engaged in lobbying activities after December 31, 1995, are not eligible to apply for funding.

discretion to waive this requirement if he/she determines that it will further the purposes of this FOA and is otherwise in the interests of EERE.

A foreign entity may receive funding as a subrecipient.

4. Incorporated Consortia

Incorporated consortia, which may include domestic and/or foreign entities, are eligible to apply for funding as a prime Recipient or subrecipient. For consortia incorporated (or otherwise formed) under the laws of a State or territory of the United States, please refer to "Domestic Entities" above. For consortia incorporated in foreign countries, please refer to the requirements in "Foreign Entities" above.

Each incorporated consortium must have an internal governance structure and a written set of internal rules. Upon request, the consortium must provide a written description of its internal governance structure and its internal rules to the DOE Contracting Officer.

5. Unincorporated Consortia

Unincorporated consortia, which may include domestic and foreign entities, must designate one member of the consortium to serve as the prime Recipient/consortium representative. The prime Recipient/consortium representative must be incorporated (or otherwise formed) under the laws of a State or territory of the United States. The eligibility of the consortium will be determined by the eligibility of the prime Recipient/consortium representative under Section III.A of the FOA.

Upon request, unincorporated consortia must provide the DOE Contracting Officer with a collaboration agreement, commonly referred to as the articles of collaboration, which sets out the rights and responsibilities of each consortium member. This agreement binds the individual consortium members together and should discuss, among other things, the consortium's:

- Management structure;
- Method of making payments to consortium members;
- Means of ensuring and overseeing members' efforts on the project;
- Provisions for members' cost sharing contributions; and
- Provisions for ownership and rights in intellectual property developed previously or under the agreement.

B. Cost Sharing

Cost Share 20% and 50%

The cost share must be at least 20% of the total allowable costs for research and development activities and at least 50% of the total allowable costs for demonstration and commercial Application activities and must come from non-Federal sources unless otherwise allowed by law. The sum of the Government share, including FFRDC contractor costs if applicable, and the Recipient share of allowable costs equals the total allowable cost

of the project. (See Appendix C for more information regarding how to calculate cost share; See 10 CFR Part 600 for the applicable cost sharing requirements.)

C. Other Eligibility Requirements

Applicants must submit a Concept Paper by the due date set forth on the FOA cover page to be eligible to submit a Full Application.

Entities that propose a team or consortium must designate a lead organization, with strong technical leadership. Applications must be submitted, on behalf of the team members, by the lead organization who is the prime Applicant on the Application and DOE will enter into a prime Award relationship with the designated lead organization.

Authorizations for DOE/NNSA National Laboratory and FFRDC involvement:

A DOE/NNSA FFRDC contractor is eligible to apply for funding or be proposed as a team member under this announcement if its cognizant Contracting Officer provides written authorization and this authorization is submitted with the Application. If a DOE/NNSA FFRDC contractor is selected for Award, the proposed work will be authorized under the DOE work authorization process and performed under the laboratory's Management and Operating (M&O) contract. The following wording is acceptable for the authorization:

"Authorization is granted for the _____ Laboratory to participate in the proposed project. The work proposed for the laboratory is consistent with or complementary to the missions of the laboratory, will not adversely impact execution of the DOE assigned programs at the laboratory."

Value/Funding. The value of, and funding for, the FFRDC contractor portion of the work will not normally be included in the Award to a successful Applicant. Usually, DOE will fund a DOE FFRDC contractor through the DOE field work Application (FWP) system and other FFRDC contractors through an interagency agreement with the sponsoring agency. FWP and other documents will be requested from successful Applicants during Award negotiation.

Cost Share. The Applicant's cost share requirement will be based on the total cost of the project, including the Applicant's and the FFRDC contractor's portions of the effort.

Responsibility: The Applicant, if successful, will be the responsible authority regarding the settlement and satisfaction of all contractual and administrative issues, including but not limited to, disputes and claims arising out of any agreement between the Applicant and the FFRDC contractor.

Non-DOE FFRDCs and non-DOE GOGOs are not eligible for funding as a prime Applicant but are eligible for funding as a team member on another entity's Application. Participation by a non-DOE FFRDC will be authorized through an Interagency Agreement. The federal agency sponsoring the FFRDC must authorize in writing the use of the FFRDC on the

proposed project and this authorization must be submitted with the Application. The use of a FFRDC must be consistent with the authority under its Award and where applicable, is authorized to carry out the activities under the proposed project and accept funds from another agency. The following wording is acceptable for this authorization:

"Authorization is granted for the _____ Laboratory to participate in the proposed project. The work proposed for the laboratory is consistent with or complementary to the missions of the laboratory and will not adversely impact execution of the assigned programs at the laboratory. THIS LABORATORY IS AUTHORIZED TO PERFORM THE WORK PROPOSED IN THE APPLICATION SUBMITTED UNDER DOE FUNDING OPPORTUNITY ANNOUNCEMENT # DE-FOA-0000836 BY THE FOLLOWING STATUTORY AUTHORITY [insert Statute name, citation, and section] _____."

A non-DOE federal agency is not eligible for funding as a prime Applicant but is eligible for funding as a team member on another entity's Application. Participation by a non-DOE federal agency will be authorized through an Interagency Agreement. A cognizant Contracting Officer from the federal agency must submit a signed legal opinion that lists its statutory authority to carry out the proposed project, explains how it would meet the statutory authority under the proposed project, and explains the authority by which the agency can accepts federal funds from another agency (i.e., explain how accepting the Award would not be considered supplanting funds). The opinion should include the following acknowledgement,

"THIS AGENCY IS AUTHORIZED TO PERFORM THE WORK PROPOSED IN THE APPLICATION SUBMITTED UNDER DOE FUNDING OPPORTUNITY ANNOUNCEMENT # DE-FOA-0000836 BY THE FOLLOWING STATUTORY AUTHORITY [insert Statute name, citation, and section] _____."

DOE reserves the right to contact the Applicant to further clarify whether the Applicant or its team members have the necessary authority to accept funds under the DOE Award and carry out the proposed activities.

D. Questions Regarding Eligibility

DOE will not make eligibility determinations for potential Applicants prior to the date on which Applications to this FOA must be submitted. The decision whether to submit an Application in response to this FOA lies solely with the Applicant.

SECTION IV – APPLICATION AND SUBMISSION INFORMATION

A. Address to Request Application Forms

The Application forms and instructions are available on EERE Exchange. To access these materials, go to https://eere-exchange.energy.gov/ and select the appropriate funding opportunity number.

Note: The maximum file size that can be uploaded to the EERE Exchange website is 10MB. Files in excess of 10MB cannot be uploaded, and, hence, cannot be submitted for review. If a file exceeds 10MB, but is still within the maximum page limit specified in the FOA, it must be broken into parts and denoted to that effect
(*e.g. ControlNumber_LeadOrganization_Project_Part_1, Part_2, etc.*).

B. Letter of Intent, Pre-Application, and Concept Paper

1. Letter of Intent

Letter of Intent Not Required

- A Letter of Intent is not required.

2. Pre-Application

Pre-Applications Not Required

- A pre-Application is not required.

3. Concept Paper

Concept Paper Required

- A concept paper is REQUIRED and must be submitted to the EERE Exchange system at https://eere-exchange.energy.gov/ by **5:00 PM ET on FRIDAY, FEBRUARY 15, 2013**. Applicants who fail to submit the required concept paper by **5:00 PM ET on FRIDAY FEBRUARY 15, 2013** will not be eligible to submit a full Application to this FOA. Concept papers may not exceed four (4) pages, where the first page is the cover page followed by a maximum of three (3) pages of narrative. The cover page must include the following information:
    - Applicant Name
    - Preliminary Project Title
    - Anticipated Project Partners
    - Anticipated Key Personnel and their affiliations
    - Estimated DOE funding
    - Point of Contact (name, email, phone)
    - 1-2 sentence description of the project

  The three (3) pages of narrative must summarize all aspects of the contemplated project, including which technical processes and/or conversion pathways may benefit from the proposed project, the targeted quality parameters for the project, the proposed research

plan to achieve the targeted technical improvements, and the resources anticipated to be available to the project, such as project partners, key personnel, and necessary facilities and equipment. The concept paper narrative must not exceed 3 pages when printed single spaced using standard 8.5" by 11" paper with 1 inch margins (top, bottom, left, and right). EVALUATORS WILL REVIEW ONLY THE FIRST 3 PAGES. The font must not be smaller than 11 point. Do not include any Internet addresses (URLs) that provide information necessary to review the concept paper. When you submit your concept paper, you will receive a Control Number that you must use in submitting your full Application.

Following receipt of the concept paper, DOE will advise each Applicant whether or not the submitted concept is responsive to the FOA and goals of BTO. Applicants whose concept papers are deemed by DOE to be non-responsive will be discouraged from submitting a full Application. However, Applicants receiving discouragement letters from DOE may still submit a full Application using the Control Number obtained upon submission of a concept paper.

Note: The maximum file size that can be uploaded to the EERE Exchange website is 10MB. Files in excess of 10MB cannot be uploaded, and, hence, cannot be submitted for review. If a file exceeds 10MB, but is still within the maximum page limit specified in the FOA, it must be broken into parts and denoted to that effect.
(*e.g. ControlNumber_LeadOrganization_Project_Part_1, Part_2, etc.*)

C. Content and Form of Application

You must complete the following Application forms found on the EERE Exchange website at https://eere-exchange.energy.gov/, in accordance with the instructions. **Applicants will receive a Control Number once they "Apply to this FOA" on the EERE Exchange website and should include the Control Number in the file name, as indicated below. [This Control Number was issued when Concept Paper was previously submitted.]**

1. SF-424 – Application for Federal Assistance

Complete all required fields in accordance with the instructions on the form. The list of certifications and assurances in Field 21 can be found at http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms, under Certifications and Assurances. Note: The dates and dollar amounts on the SF 424 are for the complete project period and not just the first year, first phase or other subset of the project period. Save the information in a single file titled "ControlNumber_LeadOrganization_App424".

2. Project Summary/Abstract File

The project summary/abstract must contain a summary of the proposed activity suitable for dissemination to the public. It should be a self-contained document that identifies the name of the Applicant, the project director/Principal Investigator(s), the project title, the objectives of the project, a description of the project, including methods to be employed, the potential impact of the project (i.e., benefits, outcomes), and major participants (for collaborative projects). This document must not include any proprietary or sensitive

business information, as the Department may make it available to the public if an Award is made. The project summary must not exceed 1 page when printed using standard 8.5" by 11" paper with 1" margins (top, bottom, left and right), single spaced, with font not smaller than 11 point. Save the information in a single file titled "ControlNumber_LeadOrganization_Summary".

3. Project Narrative File

The project narrative must not exceed 25 pages, including cover page, table of contents, charts, graphs, maps, photographs, and other pictorial presentations, when printed using standard 8.5" by 11" paper with 1 inch margins (top, bottom, left, and right), single spaced. EVALUATORS WILL REVIEW ONLY THE FIRST 25 PAGES. The font must not be smaller than 11 point. Do not include any Internet addresses (URLs) that provide information necessary to review the Application. See Section VIII.D for instructions on how to mark proprietary Application information. Save the information in a single file titled "ControlNumber_LeadOrganization_Project".

Note: The maximum file size that can be uploaded to the EERE Exchange website is 10MB. Files in excess of 10MB cannot be uploaded, and, hence, cannot be submitted for review. If a file exceeds 10MB, but is still within the maximum page limit specified in the FOA, it must be broken into parts and denoted to that effect.
(*e.g. ControlNumber_LeadOrganization_Project_Part_1, Part_2, etc.*)

The project narrative must include:

A. Project Objectives.

This section should provide a clear, concise statement of the specific objectives/aims of the proposed project.

B. Merit Review Criteria Discussion.

This section should be formatted to address each merit review criterion and sub-criterion listed in Part V. A. below. Provide sufficient information so that reviewers will be able to evaluate the Application in accordance with these merit review criteria. DOE WILL EVALUATE AND CONSIDER ONLY THOSE APPLICATIONS THAT SEPARATELY ADDRESS EACH MERIT REVIEW CRITERION AND SUB-CRITERION.

C. Relevance and Outcomes/Impacts:

This section should explain the relevance of the effort to the objectives in the program announcement and the expected outcomes and/or impacts. The justification for the proposed project should include a clear statement of the importance of the project in terms of the utility of the outcomes and the target community of beneficiaries.

D. Roles of Participants:

For multi-organizational or multi-investigator projects, describe the roles and the work to be performed by each participant/investigator, business agreements between the Applicant and participants, and how the various efforts will be integrated and managed.

E. Facilities and Other Resources:

Identify the facilities (e.g., office, laboratory, computer, etc.) to be used at each performance site listed, and, if appropriate, indicate their capacities pertinent capabilities, relative proximity, and extent of availability to the project. Describe only those resources that are directly applicable to the proposed work. Provide any information describing the other resources available to the project, such as machine and electronics shops.

F. Equipment:

List important items of equipment already available for this project, and if appropriate, note the location and pertinent capabilities of each. If you are proposing to acquire equipment, describe comparable equipment, if any, already at your organization and explain why it cannot be used.

G. Bibliography and References, if applicable:

Provide a bibliography for any references cited in the Project Narrative section. This section must include only bibliographic citations. The length of the Bibliography and References will not count toward the Narrative page limit.

H. Technical Requirement Discussion:

Address all technical requirements as outlined in Section I.5. of the FOA.

I. Narrative Appendices:

All the components of your Project Narrative (i.e., IV.C.3.A.- H. above, excluding G.) must be within the Narrative page limit specified in paragraph 3, above. Documents listed below may be included as clearly marked appendices to your Narrative, or as separate documents, and will not count towards the Project Narrative page limit. Please note that some of the required documents listed below may have their own page limits to which you must adhere.

It is very important that the Project Abstract and Project Narrative file used during the Merit Review Process do not contain any Personally Identifiable Information as described in Appendix B.

4. Project Management Plan

The project management plan (PMP) should identify the activities/tasks to be performed, a time schedule for the accomplishment of the activities/tasks, the spending plan associated with the activities/tasks, the resources to be allocated to each activity/task, and the expected dates for the release of outcomes. Applicants may use their own project management system to provide this information. This plan should identify any decision points and Go/No-Go decision criteria. Successful Applicants must use this plan to report schedule and budget variances. The PMP must not exceed 5 pages per Application when printed using standard 8.5" by 11" paper with 1 inch margins (top, bottom, left, and right), single spaced. EVALUATORS WILL REVIEW ONLY THE FIRST 5 PAGES OF THE SUBMITTED PROJECT MANAGEMENT PLAN, AS SPECIFIED IN THE PRECEDING SENTENCE. The font must not be smaller than 11 point. Do not include any Internet addresses (URLs) that provide information necessary to review the Application. Save the PMP in a single file, titled "ControlNumber_LeadOrganization_PMP",

5. Resume File

Provide a resume for each key person proposed, including subawardees and consultants if they meet the definition of a key person. A key person is any individual who contributes in a substantive, measurable way to the execution of the project. The biographical information for each resume must not exceed 2 pages when printed on 8.5" by 11" paper with 1 inch margins (top, bottom, left, and right), single spaced, with font not smaller than 11 point and should include the information below, if applicable. Save the information in a file titled "ControlNumber_LeadOrganization_Resume".

a. *Education and Training*. Undergraduate, graduate and postdoctoral training; provide institution, major/area, degree and year.

b. *Professional Experience*: Beginning with the current position list, in reverse chronological order, professional/academic positions with a brief description.

c. *Publications*. Provide a list of up to 10 publications most closely related to the proposed project. For each publication, identify the names of all authors (in the same sequence in which they appear in the publication), the article title, book or journal title, volume number, page numbers, year of publication, and website address, if available electronically.

d. Patents, copyrights and software systems developed may be provided in addition to, or substituted for, publications.

e. *Synergistic Activities*. List no more than 5 professional and scholarly activities related to the effort proposed.

Of the key personnel identified in this file, indicate the Principal Investigator(s) (PI(s)).

For projects with Multiple Principal Investigators:
The Applicant, whether a single organization or team/partnership/consortium, must indicate if the project will include multiple PIs. The decision to use multiple PIs for a project is the

sole responsibility of the Applicant. If multiple PIs will be designated, the Application must identify the Contact PI/Project Coordinator and provide a "Coordination and Management Plan" that describes the organization structure of the project as it pertains to the designation of multiple PIs. This plan should, at a minimum, include:

a. Process for making decisions on scientific/technical direction;
b. Publications;
c. Intellectual property issues;
d. Communication plans;
e. Procedures for resolving conflicts; and
f. PIs' roles and administrative, technical, and scientific responsibilities for the project.

The resume file does not have a page limitation.

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6. **SF 424 A Excel, Budget Information – Non-Construction Programs File**
   Complete all required fields in accordance with the instructions on the form. The list of certifications and assurances can be found at http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms, under Certifications and Assurances. Note: The dates and dollar amounts on the SF 424 are for the complete project period and not just the first year, first phase or other subset of the project period. Save the information in a single file titled "ControlNumber_LeadOrganization_SF424A".

7. **Budget Justification File (PMC 123.1)**

   PMC 123.1
   You must justify the costs proposed in each Object Class Category/Cost Classification category using the PMC 123.1 Budget Justification File. The total project cost, including cost share (if applicable) and federal funding, must be represented in this document. Save the budget justification information in a single file titled "ControlNumber_LeadOrganization_Budget".

8. **Letters of Commitment**

   You must provide a letter from each third party contributing cost share (i.e., a party other than the organization submitting the Application) stating that the third party is committed to providing a specific minimum dollar amount of cost share. **All Letters of Commitment must be attached as an Appendix to the Project Narrative File.** Identify the following information for each third party contributing cost share: (1) the name of the organization; (2) the proposed dollar amount to be provided; (3) the amount as a percentage of the total project cost; and (4) the proposed type of cost share – cash,

services, or property.

In addition, biorefinery partner(s), regardless of whether or not they intend to participate in the project as cost sharing partners, must provide a letter stating that the information contained in the Proposal regarding the biomass conversion process type; the primary biofuel product of the conversion process; the nameplate production capacity of the conversion process being designed, built or operated; the intended conversion process feedstock, and therefore the feedstock of choice for the project; and the preferred in-feed physical, chemical and conversion performance specifications for that material accurately represent the process they are developing, commercializing or operating.

Note: The maximum file size that can be uploaded to the EERE Exchange website is 10MB. Files in excess of 10MB cannot be uploaded, and, hence, cannot be submitted for review. If a file exceeds 10MB, but is still within the maximum page limit specified in the FOA, it must be broken into parts and denoted to that effect.
(*e.g. ControlNumber_LeadOrganization_Project_Part_1, Part_2, etc.*)

9. **Subaward Budget File(s)**

   You must provide a separate budget (i.e., budget for each budget year and a cumulative budget) for each subawardee that is expected to perform work estimated to be more than $100,000 or 50 percent of the total work effort (whichever is less). A PMC 123.1 Budget Justification file for the subaward budget is also required. The budget justification must include the same information described in Paragraph 7 above. Save each Subaward budget justification in a single file titled "ControlNumber_LeadOrganization_SubAwardee_Budget".

10. **Statement of Project Objectives (SOPO):**

    The Statement of Project Objectives should be provided in a similar format as the SOPO template shown in Appendix D. The SOPO must address how the project objectives will be met. It must contain a clear, concise description of all activities to be completed during the project performance and follow the requirements in the template. The SOPO may be released to the public by DOE, in whole or in part, at any time. Therefore, it is required that it shall not contain proprietary or confidential business information. Save the SOPO in a single file titled "ControlNumber_LeadOrganization_SOPO".

11. **Budget for DOE Federally Funded Research and Development Center (FFRDC) Contractor File, if applicable**

    If a DOE FFRDC contractor is to perform a portion of the work, you must provide a DOE Field Work Proposal (FWP) in accordance with the requirements in DOE Order 412.1 Work Authorization System. The DOE Order 412.1, Work Authorization System and the DOE O 412.1, Field Work Proposal form are available at the following link, under "DOE Budget Forms": https://www.directives.doe.gov/directives/current-directives/412.1-BOrder-a/view . Save the Field Work Proposal in a single file titled "ControlNumber_LeadOrganization_FFRDC_FWP".

12. Authorization for non-DOE or DOE FFRDCs

Save the Authorization for non-DOE or DOE FFRDCs, as specified in Section III.C. Other Eligibility Requirements, in a single file titled "ControlNumber_LeadOrganization_FFRDC_Auth".

13. Environmental Questionnaire – PMC 111.1

You must complete the environmental questionnaire. Do not submit the form online through the EERE Project Management Center website; as it will not be reviewed as part of the Application. Save the questionnaire in a single file titled "ControlNumber_LeadOrganization_Env Questionnaire".

14. Environmental Checklist – EF-1

You must complete the environmental checklist. Do not submit the form online through the EERE Project Management Center website; as it will not be reviewed as part of the Application. Save the checklist in a single file titled "ControlNumber_LeadOrganization_EnvChecklist".

Note: The maximum file size that can be uploaded to the EERE Exchange website is 10MB. Files in excess of 10MB cannot be uploaded, and, hence, cannot be submitted for review. If a file exceeds 10MB, but is still within the maximum page limit specified in the FOA, it must be broken into parts and denoted to that effect.
(*e.g. ControlNumber_LeadOrganization_Project_Part_1, Part_2, etc.*)

15. SF-LLL Disclosure of Lobbying Activities

If applicable, complete the SF- LLL. Applicability: If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the grant/cooperative agreement, you must complete and submit Standard Form - LLL, "Disclosure Form to Report Lobbying." If applicable, save the SF-LLL in a single file titled "ControlNumber_LeadOrganization_SF-LLL".

16. Waiver Request - (a) Foreign Entities and (b) Performance of Work in the United States (If Applicable)

As set forth in Section III, all prime Recipients receiving funding under this FOA must be incorporated (or otherwise formed) under the laws of a State or territory of the United States. If a foreign entity applies for funding as a prime Recipient, it must designate in the Full Application a subsidiary or affiliate incorporated (or otherwise formed) under the laws of a State or territory of the United States to be the prime Recipient. Section III

further requires that all work under EERE funding agreements to be performed in the United States – i.e., prime Recipients must expend 100% of the total project cost in the United States.

To seek a waiver of either requirement, the Applicant must submit a waiver request in the Full Application, which includes the following information: entity name, country (or state) of incorporation, description of the work to be performed by that entity, and the location where the work will be performed. If the Applicant is seeking a waiver to have a foreign entity serve as the prime Recipient, the Applicant must explain why it is necessary to have a foreign entity serve as the prime Recipient. If the Applicant is seeking a waiver of the "Performance of Work in the United States" requirement, the Applicant must explain why it is necessary to have the work performed outside of the United States. All waiver requests should explain how the waiver would further the purposes of this FOA and otherwise serve the interests of EERE. The Contracting Officer may require additional information before considering the waiver request. Save the Waiver Request(s) in a single file titled "ControlNumber_LeadOrganization_Waiver."

Summary of Required Forms/Files

Your Application must include the following documents

Name of Document	Format	File Name
SF 424 - Application for Federal Assistance	PDF	{{ControlNumber}}_{{LeadOrganization}}_App424
Project Summary/Abstract File	PDF	{{ControlNumber}}_{{LeadOrganization}}_Summary
Project Narrative File, including required appendices (i.e., Bibliography, etc)	PDF	{{ControlNumber}}_{{LeadOrganization}}_Project
Project Management Plan (PMP)	PDF	{{ControlNumber}}_{{LeadOrganization}}_PMP
Resume File	PDF	{{ControlNumber}}_{{LeadOrganization}}_Resume
SF 424A Excel – Budget Information for Non-Construction Programs File	Excel	{{ControlNumber}}_{{LeadOrganization}}_SF424A
PMC 123.1 Budget Justification File	Excel	{{ControlNumber}}_{{LeadOrganization}}_Budget
Letters of Commitment	PDF	{{ControlNumber}}_{{LeadOrganization}}_LOC
SubAward Budget Justification File, if applicable	Excel	{{ControlNumber}}_{{LeadOrganization}}_SubAwardee_Budget
Statement of Project Objectives	PDF	{{ControlNumber}}_{{LeadOrganization}}_SOPO
Budget for Federally Funded Research and Development Center (FFRDC) Contractor File, if applicable.	PDF	{{ControlNumber}}_{{LeadOrganization}}_FFRDC_FWP
Authorization from cognizant Contracting Officer for FFRDC, if applicable.	PDF	{{ControlNumber}}_{{LeadOrganization}}_FFRDC_Auth
Environmental Questionnaire (PMC111.1)	PDF	{{ControlNumber}}_{{LeadOrganization}}_EnvQuestionnaire
Environmental Checklist (EF-1)	PDF	{{ControlNumber}}_{{LeadOrganization}}_EnvChecklist
SF-LLL Disclosure of Lobbying Activities, if applicable	PDF	{{ControlNumber}}_{{LeadOrganization}}_SF-LLL
Waiver Request, if applicable	PDF	{{ControlNumber}}_{{LeadOrganization}}_Waiver

D. Submissions from Successful Applicants

If selected for Award, DOE reserves the right to request additional or clarifying information for any reason deemed necessary, including, but not limited to:

- Indirect cost information
- Other budget information
- Commitment Letter from Third Parties Contributing to Cost Share, if applicable
- Name and phone number of the Designated Responsible Employee for complying with

national policies prohibiting discrimination (See 10 CFR 1040.5)

- Representation of Limited Rights Data and Restricted Software, if applicable

E. Submission Dates and Times

1. Concept Paper Due Date

Concept Papers must be received by **FRIDAY, FEBRUARY 15, 2013**, not later than **5:00 PM Eastern Time**. You are encouraged to transmit the Concept Paper well before the deadline. **CONCEPT PAPERS MUST BE SUBMITTED VIA EERE EXCHANGE AT** https://eere-exchange.energy.gov/.

APPLICANTS MUST SUBMIT A CONCEPT PAPER BY THE DUE DATE TO BE ELIGIBLE TO SUBMIT AN APPLICATION.

2. Application Due Date

Application Due Date and Submission Time
Applications must be received by **FRIDAY, MARCH 22, 2013**, not later than **5:00 PM Eastern Time**. You are encouraged to transmit your Application well before the deadline. **APPLICATIONS MUST BE SUBMITTED VIA EERE EXCHANGE AT** https://eere-exchange.energy.gov/. **APPLICATIONS RECEIVED AFTER THE DEADLINE WILL NOT BE REVIEWED OR CONSIDERED FOR AWARD.**

F. Intergovernmental Review

Program Not Subject to Executive Order 12372

- This program is not subject to Executive Order 12372 – Intergovernmental Review of Federal Programs.

G. Funding Restrictions

Funding for all Awards and future budget periods are contingent upon the availability of funds appropriated by Congress for the purpose of this program and the availability of future-year budget authority.

Cost Principles**.** Costs must be allowable in accordance with the applicable Federal cost principles referenced in: 2 CFR 220 for Educational Institutions; 2 CFR 225 for State, Local, and Indian Tribal Governments; 2 CFR 230 for Non Profit Organizations and FAR Part 31 for commercial organizations.

Pre-Award Costs**.** Recipients may charge to an Award resulting from this announcement pre-Award costs that were incurred within the ninety (90) calendar day period immediately preceding the effective date of the Award and no earlier than the selection date, if the costs are allowable in accordance with the applicable Federal cost principles referenced in 10 CFR part 600. Recipients must obtain the prior approval of the Contracting Officer for any pre-Award costs that are for periods greater than this 90 day calendar period.

Pre-Award costs are incurred at the Applicant's risk. DOE is under no obligation to reimburse such costs if for any reason the Applicant does not receive an Award or if the Award is made for a lesser amount than the Applicant expected.

If Recipients are State or Local Governments, they may not incur pre-Award costs prior to Award, without prior approval of the DOE Contracting Officer.

H. Submission and Registration Requirements

Where to Submit

CONCEPT PAPERS AND APPLICATIONS MUST BE SUBMITTED UNDER THIS ANNOUNCEMENT THROUGH EERE EXCHANGE at https://eere-exchange.energy.gov/ TO BE CONSIDERED FOR AWARD. You will not be able to submit a Concept Paper or an Application through EERE Exchange unless you are registered as a user on this system. Please read the registration requirements below carefully and start the process immediately. Concept Papers and Applications submitted by any other means will not be accepted.

If you have problems completing the registration process or submitting your Application, send an email to the EERE Exchange helpdesk at EERE-ExchangeSupport@hq.doe.gov.
It is the responsibility of the Applicant to verify successful transmission, prior to the Application due date and time.

Registration Process Requirements

There are several one-time actions that must be completed before submitting an Application in response to this Funding Opportunity Announcement (FOA), as follows:

- 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 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 appropriate contact point for each submission.

  The Applicant will receive an automated response when the Concept Paper or Application is received. This will serve as a confirmation of receipt. Please do not reply to the automated response. The Applicant will have the opportunity to re-submit a revised Concept Paper and/or Application for any reason as long as the relevant submission is submitted by the specified deadline. The Users' Guide for Applying to the Department of Energy EERE Funding Opportunity Announcements is found at https://eere-exchange.energy.gov/Manuals.aspx.

  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 those registrations as soon as possible**.

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 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/

Electronic Authorization of Applications and Award Documents

Submission of an Application and supplemental information under this announcement through electronic systems used by the Department of Energy, including EERE Exchange, constitutes the authorized representative's approval and electronic signature.

Submission of Award documents, including modifications, through electronic systems used by the Department of Energy, including FedConnect, constitutes the authorized representative's approval and acceptance of the terms and conditions of the Award. Award acknowledgement via FedConnect constitutes the authorized representative's electronic signature.

SECTION V - APPLICATION REVIEW INFORMATION

A. Criteria

- **Initial Review Criteria**

Application Award Eligibility

- Prior to a comprehensive merit evaluation, DOE will perform an initial review to determine that (1) the Applicant is eligible for an Award; (2) the information required by the announcement has been submitted; (3) all mandatory requirements are satisfied; and (4) the proposed project is responsive to the objectives of the funding opportunity announcement. If an Application fails to meet these requirements, it may be deemed non-responsive and eliminated from full Merit Review.

Merit Review Criteria

Applications will be evaluated against the merit review criteria shown below.

(1) Potential Impact of the Proposed Technology Relative to State-of-the-Art (30%) - Extent to which the Application convincingly describes the potential impact of the proposed project by:

- Presenting a meaningful analysis of the current state of technology for logistics-related costs and feedstock quality parameters for the selected "high impact feedstock(s)" supply system and biorefinery process(es) There are a number of publically available feedstock logistics costing tools that pertain to various feedstocks and supply chain components. One tool that applicants may choose to utilize as part of their analysis is the Integrated Biomass Supply and Logistics Model http://biomass.ubc.ca/software/
- Presenting a convincing and supportable techno-economic base (or benchmark) case feedstock logistics system substantiated by data and experience from field-scale work and/or experimental results (including experimental data, if applicable),
- Demonstrating awareness of competing commercial and emerging technologies and identifying how the proposed concept/technology provides significant improvement over other potential solutions; and
- Clearly explaining the anticipated impact of the proposed technology on the feedstock supply chain, and in particular, how logistics-related costs will be affected relative to the base case.

(2) Overall Scientific and Technical Merit (50%) - Extent to which the Application convincingly demonstrates the technical merit and provides a credible approach for the proposed project by:

- Clearly explaining the relevance of the proposed efforts to the technical objectives of the FOA;
- Clearly defining
  - achievable technical targets;
  - the Research, Development and Demonstration (RD&D) plan to address the two barriers described in Section I.5.; and
  - meaningful project deliverables.
- Proposing a comprehensive and technically feasible work plan for achieving the

quantifiable improvements that can be implemented within the project's cost and schedule and that is responsive to the objectives of the two barrier areas;
- Presenting a clear plan to produce a comprehensive, accurate and convincing techno-economic analysis (TEA) of the integrated logistics system(s) demonstrated during the period of performance of the project, including supporting data that quantifies energy, fuel, water, and other material inputs that would enable evaluation of economic and environmental sustainability;
- Presenting clear, reasonable, measurable and timely milestones;
- Clearly defining at least one Go/No-Go decision point in the project schedule; and
- Sufficiently identifying the perceived key technical risk areas and mitigation strategies to address them.

(3) Applicant Roles and Capabilities (20%) – Extent to which the Applicant has convincingly demonstrated that a superior team has been assembled for pursuing the proposed research by:
- Clearly defining the roles and responsibilities of the key participants;
- Demonstrating the adequacy and availability of key personnel to carry out the proposed research activities;
- Providing evidence of previous success in large, multi-institutional projects;
- Demonstrating the appropriateness and availability of facilities and equipment to accommodate the proposed research; and
- Providing clear evidence of a demonstrated ability to integrate project management practices with existing financial and business systems to measure project progress and enhance the probability of its successful completion.

Other Selection Factors

1. Program Policy Factors

The Selection Official may consider the following program policy factors in the selection process:
- Geographic diversity of projects
- Technological diversity of projects
- Cost share offered above the minimum amount required

B. Review and Selection Process

1. Merit Review

Applications Subject to Merit Review

Applications that pass the initial review will be subjected to a merit review in accordance with the guidance provided in the "Department of Energy Merit Review Guide for Financial Assistance". This guide is available at http://energy.gov/management/office-management/operational-management/financial-assistance under Financial Assistance Policy and Guidance.

It is very important that the Project Abstract and Project Narrative file used during the Merit Review Process do not contain any Personally Identifiable Information, as described in Appendix B.

2. Pre-Selection Clarification

Based upon the results of the merit review of written Applications, DOE may determine that pre-selection clarifications are necessary from certain Applicants. These pre-selection clarifications will be for the purposes of clarifying the Application and may take the form of one or more of the following procedures: written responses to DOE's written clarification questions, video or conference calls with DOE representatives, in person-meetings or presentations at DOE or Applicant site. DOE, based upon the results of the merit review of written Applications and in its sole discretion, may decide not to hold any pre-selection clarifications. The information provided by Applicants to DOE through pre-selection clarifications is incorporated in their Application and contributes to the merit review evaluation and DOE's selection decisions. Selection for participation in pre-selection clarifications does not signify that Applicants have been selected for negotiation of Award. Applicant costs incurred to participate in pre-selection clarifications (such as travel or other presentation costs) are Application costs and are only allowable to Awardees as indirect expenses to Federally sponsored projects to the extent that those costs are allowable, allocable and reasonable.

3. Selection

Selection Official Consideration
The Selection Official may consider the merit review recommendations, program policy factors, and the amount of funds available.

Additionally, the Selection Official may request that a budget evaluation (not point scored) be conducted after the Merit Review on the most highly rated Application(s). The budget evaluation serves to provide the Selection Official and management personnel with an understanding of the annual funding requirements for the suite of potential Awards, as well as cost realism of the budget estimate, appropriateness and reasonableness of resources, and reasonableness and feasibility of the schedule relative to the Applicant's Statement of Project Objectives.

4. Discussions and Award

Government Discussions with Applicant

The Government may enter into discussions with a selected Applicant for any reason deemed necessary, including, but not limited to: (1) the budget is not appropriate or reasonable for the requirement; (2) only a portion of the Application is selected for Award; (3) the Government needs additional information to determine that the Recipient is capable of complying with the requirements in 10 CFR part 600; and/or (4) special terms and conditions are required. Failure to resolve satisfactorily the issues identified by the Government will preclude Award to the Applicant.

C. Anticipated Notice of Selection and Award Dates

Selection and Award Date

- DOE anticipates notifying Applicants selected for Award approximately by July, 2013 and making Awards approximately by September, 2013.

SECTION VI - AWARD ADMINISTRATION INFORMATION

A. Notice of Selection

- **Notice of Selection**
  Selected Applicants Notification
  DOE will notify Applicants selected for Award. This notice of selection is not an authorization to begin performance. (See Section IV.G with respect to the allowability of pre-Award costs.)

  Notice of Award
  A Financial Assistance Award or Assistance Agreement issued by the Contracting Officer is the authorizing Award document. It normally includes, either as an attachment or by reference: (1) Special Terms and Conditions; (2) Applicable program regulations, if any; (3) Application as approved by DOE; (4) DOE assistance regulations at 10 CFR part 600; (5) National Policy Assurances To Be Incorporated As Award Terms; (6) Intellectual Property Provisions; (7) Statement of Project Objectives; (8) Federal Assistance Reporting Checklist, which identifies the reporting requirements; and (9) Budget Summary.

  For grants and cooperative agreements made to universities, non-profits and other entities subject to OMB Circular A-110, the Award also includes the Research Terms and Conditions and the DOE Agency Specific Requirements located at: http://www.nsf.gov/bfa/dias/policy/rtc/index.jsp.

B. Administrative Requirements, National Policy Requirements, and Applicant Representations and Certifications

- **Administrative Requirements**
  The administrative requirements for DOE grants and cooperative agreements are contained in Title 10 CFR Part 600 (See: 10 CFR 600). Grants and cooperative agreements made to universities, non-profits and other entities subject to Title 10 CFR Part 600 are subject to the Research Terms and Conditions located on the National Science Foundation web site at: http://www.nsf.gov/bfa/dias/policy/rtc/index.jsp.

  DUNS and SAM Requirements
  Additional administrative requirements for DOE grants and cooperative agreements are contained in 2 CFR, Part 25 (See: http://ecfr.gpoaccess.gov). Prime Awardees must keep their data at the System for Award Management (SAM) current at https://www.sam.gov. SAM is the government-wide system that replaced the SAM. If you had an active registration in the CCR, you have an active registration in SAM. Subawardees at all tiers must obtain DUNS numbers and provide the DUNS to the prime Awardee before the subaward can be issued.

  Subaward and Executive Reporting
  Additional administrative requirements necessary for DOE grants and cooperative agreements to comply with the Federal Funding and Transparency Act of 2006 (FFATA) are contained in 2 CFR, Part 170. (See: http://ecfr.gpoaccess.gov). Prime Awardees must

register with the new FSRS database and report the required data on their first tier subawardees. Prime Awardees must report the executive compensation for their own executives as part of their registration profile in the System for Award Management (SAM).

Special Terms and Conditions, National Policy Requirements, and Applicant Representations and Certifications

The DOE Special Terms and Conditions for Use in Most Grants and Cooperative Agreements are located at: http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms.

The National Policy Assurances To Be Incorporated as Award Terms are located at http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms

Applicant Representations and Certifications

Corporate Felony Conviction and Federal Tax Liability Representations (March 2212)

By submitting an Application in response to this FOA the Applicant represents that:

(1) It is **not** a corporation that has been convicted (or had an officer or agent of such corporation acting on behalf of the corporation convicted) of a felony criminal violation under any Federal law within the preceding 24 months,

(2) **No** officer or agent of the corporation have been convicted of a felony criminal violation for an offence arising out of actions for or on behalf of the corporation under Federal law in the past 24 months,

(3) It is **not** a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

For purposes of these representations the following definitions apply:

A Corporation includes any entity that has filed articles of incorporation in any of the 50 states, the District of Columbia, or the various territories of the United States [but not foreign corporations]. It includes both for-profit and non-profit organizations.

Intellectual Property Provisions
The standard DOE financial assistance intellectual property provisions applicable to the various types of Recipients are located at http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms

Statement of Substantial Involvement

- Government Insight

  DOE has the right to intervene in the conduct or performance of project activities for programmatic reasons. Intervention includes the interruption or modification of the conduct or performance of project activities. The DOE will be substantially involved in directing the work performed under this Award, to ensure that work in each Award is the most beneficial to achieving program goals. Substantial involvement consists of direction or redirection of the work to achieve the goals of the project. DOE reserves the right to direct which resources it will provide to conduct the independent validation and testing of project results. DOE will utilize the independent validation and testing to assist in funding and direction decisions.

- Go/No-Go Review Process

  DOE has the right to intervene in the conduct or performance of project activities for programmatic reasons. Intervention includes the interruption or modification of the conduct or performance of project activities.

  DOE will require a Go/No-Go review between successive budget periods of the project. Budget Period 1 will culminate with a DOE Go/No-Go decision point. A Go/No-Go review meeting will be convened and attended by DOE staff and a group of independent reviewers who are experienced in the field. The DOE Contracting Officer will make the Go/No-Go decision based upon the results of this review, prior to the project moving forward to Budget Period 2. Budget Period 1 and Budget Period 2 activities will be clearly delineated in the Statement of Project Objectives (SOPO).

C. Reporting

Reporting requirements are identified on the Federal Assistance Reporting Checklist, DOE F 4600.2, attached to the Award agreement.

During the project performance period, Recipients will be required to periodically provide updated Project Management Plans, and also participate in DOE Reviews, such as Project, Peer, and Go/No-Go.

SECTION VII - QUESTIONS/AGENCY CONTACTS

A. Questions

Questions regarding the content of this announcement must be submitted to: Logistics_FOA@go.doe.gov not later than 3 business days prior to the Application due date.

All questions and answers related to this FOA will be posted on EERE Exchange at: https://eere-exchange.energy.gov/. **Please note that you must first select this specific FOA Number in order to view the questions and answers specific to this FOA**. DOE will attempt to respond to a question within 3 business days, unless a similar question and answer has already been posted on the website.

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

B. Agency Contacts

EMAIL: Logistics_FOA@go.doe.gov

SECTION VIII - OTHER INFORMATION

A. Amendments

Amendments to this announcement will be posted on the EERE Exchange web site and the Grants.gov system. However, you will only receive an email when an amendment or an announcement is posted on these sites if you register for email notifications for this FOA in Grants.gov. DOE recommends that you register as soon after the release of the FOA as possible to ensure you receive timely notice of any amendments or other announcements.

B. Government Right to Reject or Negotiate

DOE reserves the right, without qualification, to reject any or all Applications received in response to this announcement and to select any Application, in whole or in part, as a basis for negotiation and/or Award.

C. Commitment of Public Funds

The Contracting Officer is the only individual who can make Awards or commit the Government to the expenditure of public funds. A commitment by other than the Contracting Officer, either explicit or implied, is invalid.

D. Proprietary Application Information

DOE will use data and other information contained in Applications strictly for evaluation purposes. Applicants should not include confidential, proprietary, or privileged information in their Applications unless such information is necessary to convey an understanding of the proposed project.

Applications containing confidential, proprietary, or privileged information must be marked as described below. Failure to comply with these marking requirements may result in the disclosure of the unmarked information under the Freedom of Information Act or otherwise. The U.S. Government is not liable for the disclosure or use of unmarked information, and may use or disclose such information for any purpose.

The cover sheet of the Application must be marked as follows and identify the specific pages containing confidential, proprietary, or privileged information:

Notice of Restriction on Disclosure and Use of Data:
Pages *[list applicable pages]* of this document may contain confidential, proprietary, or privileged information that is exempt from public disclosure. Such information shall be used or disclosed only for evaluation purposes or in accordance with a financial assistance or loan agreement between the submitter and the Government. The Government may use or disclose any information that is not appropriately marked or otherwise restricted, regardless of source.

The header and footer of every page that contains confidential, proprietary, or privileged information must be marked as follows: “Contains Confidential, Proprietary, or Privileged Information Exempt from Public Disclosure.”

In addition, every line and paragraph containing proprietary, privileged, or trade secret information must be clearly marked with double brackets or highlighting.

E. Evaluation and Administration by Non-Federal Personnel

In conducting the merit review evaluation, the Government may seek the advice of qualified non-Federal personnel as reviewers. The Government may also use non-Federal personnel to conduct routine, nondiscretionary administrative activities. The Applicant, by submitting its Application, consents to the use of non-Federal reviewers/administrators. Non-Federal reviewers must sign conflict of interest and non-disclosure agreements prior to reviewing an Application. Non-Federal personnel conducting administrative activities must sign a non-disclosure agreement.

F. Intellectual Property Developed under this Program

Patent Rights. The government will have certain statutory rights in an invention that is conceived or first actually reduced to practice under a DOE Award. 42 U.S.C. 5908 provides that title to such inventions vests in the United States, except where 35 U.S.C. 202 provides otherwise for nonprofit organizations or small business firms. However, the Secretary of Energy may waive all or any part of the rights of the United States subject to certain conditions. (See "Notice of Right to Request Patent Waiver" in paragraph G below.)

Rights in Technical Data. Normally, the government has unlimited rights in technical data created under a DOE agreement. Delivery or third party licensing of proprietary software or data developed solely at private expense will not normally be required except as specifically negotiated in a particular agreement to satisfy DOE's own needs or to insure the commercialization of technology developed under a DOE agreement.

Special Protected Data Statutes. This program is covered by a special protected data statute. The provisions of the statute provide for the protection from public disclosure, for a period of up to five (5) years from the date of its development, of first-produced data that would be trade secret, or commercial or financial information that is privileged or confidential, if the information had been obtained from a non-Federal party. Generally, the provision entitled, Rights in Data – Programs Covered Under Special Protected Data Statutes, (10 CFR 600 Appendix A to Subpart D), will apply to an Award made under this announcement. This provision will identify data or categories of data first produced in the performance of the Award that will be made available to the public, notwithstanding the statutory authority to withhold data from public dissemination, and may also identify data that will be recognized by the parties as protected data. For National Laboratories and FFRDCs, the data rights clause in Applicant's Management and Operating (M&O) Contract will apply.

G. Notice of Right to Request Patent Waiver

Applicants may request a waiver of all or any part of the rights of the United States in inventions conceived or first actually reduced to practice in performance of an agreement as a result of this announcement, in advance of or within 30 days after the effective date of the Award. Even if such advance waiver is not requested or the request is denied, the Recipient

will have a continuing right under the Award to request a waiver of the rights of the United States in identified inventions, i.e., individual inventions conceived or first actually reduced to practice in performance of the Award. Any patent waiver that may be granted is subject to certain terms and conditions in 10 CFR 784.

Domestic small businesses and domestic nonprofit organizations will receive the patent rights clause at 37 CFR 401.14, i.e., the implementation of the Bayh-Dole Act. This clause permits domestic small business and domestic nonprofit organizations to retain title to subject inventions. Therefore, small businesses and nonprofit organizations do not need to request a waiver.

H. Notice Regarding Eligible/Ineligible Activities

Eligible activities under this program include those which describe and promote the understanding of scientific and technical aspects of specific energy technologies, but not those which encourage or support political activities such as the collection and dissemination of information related to potential, planned or pending legislation.

I. Notice of Right to Conduct a Review of Financial Capability

DOE reserves the right to conduct an independent third party review of financial capability for Applicants that are selected for negotiation of Award (including personal credit information of principal(s) of a small business if there is insufficient information to determine financial capability of the organization).

J. Notice of Potential Disclosure under Freedom of Information Act

Applicants should be advised that identifying information regarding all Applicants, including Applicant names and/or points of contact, may be subject to public disclosure under the Freedom of Information Act, whether or not such Applicants are selected for negotiation of Award.

K. Lobbying Restrictions

By accepting funds under this Award, you agree that none of the funds obligated on the Award shall be expended, directly or indirectly, to influence congressional action on any legislation or appropriation matters pending before Congress, other than to communicate to Members of Congress as described in 18 U.S.C. 1913. This restriction is in addition to those prescribed elsewhere in statute and regulation.

REFERENCE MATERIAL

Appendix A – Definitions

"Acceptable Biofuel" means a liquid transportation fuel that is produced from renewable lignocellulosic biomass and that is used to replace or reduce the quantity of fossil fuel present in a transportation fuel. Subject to the other provisions in this FOA, the types of fuels eligible as "acceptable biofuels" under this FOA may include any that meet, or are likely to meet, the following specifications so long as they are derived from an Acceptable Feedstock: ethanol, butanol, and any other hydrocarbons suitable for blending with gasoline, diesel or jet fuels.

"Acceptable Feedstock" means "High Impact Feedstock" (see below).

"Advanced Biofuel" means **a** renewable fuel, other than ethanol derived from corn starch, that has life cycle greenhouse gas emissions, as determined by the EPA Administrator, that are at least 50%less than baseline life cycle greenhouse gas emissions.

"Amendment" means a revision to a Funding Opportunity Announcement

"**Applicant**" means the legal entity or individual signing the Application. This entity or individual may be one organization or a single entity representing a group of organizations (such as a Consortium) that has chosen to submit a single Application in response to a Funding Opportunity Announcement.

"**Application**" means the documentation submitted in response to a Funding Opportunity Announcement.

"Authorized Organization Representative (AOR)" is the person with assigned privileges who is authorized to submit grant Applications through Grants.gov on behalf of an organization. The privileges are assigned by the organization's E-Business Point of Contact designated in the SAM.

"**Award**" means the written documentation executed by a DOE Contracting Officer, after an Applicant is selected, which contains the negotiated terms and conditions for providing Financial Assistance to the Applicant. A Financial Assistance Award may be either a Grant or a Cooperative Agreement.

"**Budget**" means the cost expenditure plan submitted in the Application, including both the DOE contribution and the Applicant Cost Share.

"Cellulosic Biofuel" means a renewable fuel derived from any cellulose, hemicellulose, or lignin that is derived from renewable biomass and that has lifecycle greenhouse gas emissions, as determined by the EPA Administrator, that are at least 60 percent less than the baseline lifecycle greenhouse gas emissions.

"**Consortium (plural consortia)**" means the group of organizations or individuals that have chosen to submit a single Application in response to a Funding Opportunity Announcement.

"**Contracting Officer**" means the DOE official authorized to execute Awards on behalf of DOE and who is responsible for the business management and non-program aspects of the Financial Assistance process.

"**Cooperative Agreement**" means a Financial Assistance instrument used by DOE to transfer money or property when the principal purpose of the transaction is to accomplish a public purpose of support or stimulation authorized by Federal statute, and Substantial Involvement (see definition below) is anticipated between DOE and the Applicant during the performance of the contemplated activity. Refer to 10 CFR 600.5 for additional information regarding cooperative agreements.

"**Cost Sharing**" means the respective share of Total Project Costs to be contributed by the Applicant and by DOE. The percentage of Applicant Cost Share is to be applied to the Total Project Cost (i.e., the sum of Applicant plus DOE Cost Shares) rather than to the DOE contribution alone.

"Data Universal Numbering System (DUNS) Number" is a unique nine-character identification number issued by Dun and Bradstreet (D&B). Organizations must have a DUNS number prior to registering in the SAM. Call 1-866-705-5711 to receive one free of charge.

"E-Business Point of Contact (POC)" is the individual who is designated as the Electronic Business Point of Contact in the SAM registration. This person is the sole authority of the organization with the capability of designating or revoking an individual's ability to conduct SAM transactions.

"E-Find" is a Grants.gov webpage where you can search for Federal Funding Opportunities in FedGrants. http://www.grants.gov/search/searchHome.do

"EERE Exchange" is the Department of Energy, Energy Efficiency and Renewable Energy's web system for posting Federal Funding Opportunity Announcements and receiving Applications. https://eere-exchange.energy.gov/FileContent.aspx?FileID=e10b8886-1826-447d-b1bf-8d9f0bf06f8e

"**Financial Assistance**" means the transfer of money or property to an Applicant or Participant to accomplish a public purpose of support authorized by Federal statute through Grants or Cooperative Agreements and sub-Awards. For DOE, it does not include direct loans, loan guarantees, price guarantees, purchase agreements, Cooperative Research and Development Agreements (CRADAs), or any other type of financial incentive instrument.

"FedConnect" is where federal agencies make Awards via the web. https://www.fedconnect.net/FedConnect/

"Federally Funded Research and Development Center (FFRDC)" means a research laboratory as defined by Federal Acquisition Regulation 35.017.

"Formatted biomass" refers to the physical characteristics of raw biomass that has been preprocessed and packaged in some way to facilitate over-the-road transport, conveyance at the biorefinery, and in-feed into the biorefinery process. For instance, herbaceous materials may be

densified into either large round or large square bales at the field site prior to transport. Woody crops may be chipped at the forest landing prior to transport. Pellets and briquettes are other formatted forms of biomass.

"Funding Opportunity Announcement (FOA)" is a publicly available document by which a Federal agency makes known its intentions to Award discretionary grants or cooperative agreements, usually as a result of competition for funds. Funding opportunity announcements may be known as program announcements, notices of funding availability, solicitations, or other names depending on the agency and type of program.

"GGE (Gasoline Gallon Equivalent)" is defined to equate the energy content of any motor fuel to that of a gallon of gasoline.

"Grant" means a Financial Assistance instrument used by DOE to transfer money or property when the principal purpose of the transaction is to accomplish a public purpose of support or stimulation authorized by Federal statute, and no Substantial Involvement is anticipated between DOE and the Applicant during the performance of the contemplated activity.

"Grants.gov" is the "storefront" web portal which allows organizations to electronically find grant opportunities from all Federal grant-making agencies. Grants.gov is THE single access point for over 900 grant programs offered by the 26 Federal grant-making agencies. http://www.grants.gov

"High Impact Feedstock" means a feedstock that is domestically available and has the agronomically and ecologically sustainable ultimate availability potential of at least 50 million dry metric tonnes of biomass per year. Multiple feedstocks may be combined to satisfy this requirement if the proposed conversion technology is shown to be capable of converting each of the feedstocks that constitute the 50 million dry metric tonnes per year. Alternately, the feedstock must be domestically available and have the agronomically and ecologically sustainable ultimate availability potential to produce at least 1 billion gallons per year of an Acceptable Biofuel.

"**Key Personnel**" mean the individuals who will have significant roles in planning and implementing the proposed Project on the part of the Applicant and Participants, including FFRDCs.

"Marketing Partner Identification Number (MPIN)" is a very important password designated by your organization when registering in SAM. The E-Business Point of Contact will need the MPIN to assign privileges to the individual(s) authorized to perform SAM transactions on behalf of your organization. The MPIN must have 9 digits containing at least one alpha character (must be in capital letters) and one number (no spaces or special characters permitted).

"OEM" means Original Equipment Manufacturer.

"**Participant**" for purposes of this Funding Opportunity Announcement only, means any entity, except the Applicant substantially involved in a Consortium, or other business arrangement (including all parties to the Application at any tier), responding to the Funding Opportunity Announcement.

“Principal Investigator” refers to the technical point of contact/Project Manager for a specific project Award.

"**Project**" means the set of activities described in an Application, State plan, or other document that is approved by DOE for Financial Assistance (whether such Financial Assistance represents all or only a portion of the support necessary to carry out those activities).

“Proposal” is the term used to describe the documentation submitted in response to a Funding Opportunity Announcement. Also see Application.

“Recipient” means the organization, individual, or other entity that receives a Financial Assistance Award from DOE, is financially accountable for the use of any DOE funds or property provided for the performance of the Project, and is legally responsible for carrying out the terms and condition of the Award.

“System for Award Management (SAM)” is the primary database which collects, validates, stores and disseminates data in support of agency missions (https://www.sam.gov).

"**Selection**" means the determination by the DOE Selection Official that negotiations take place for certain Projects with the intent of Awarding a Financial Assistance instrument.

"Selection Official" means the DOE official designated to select Applications for negotiation toward Award under a subject Funding Opportunity Announcement.

"**Substantial Involvement**" means involvement on the part of the Government. DOE's involvement may include shared responsibility for the performance of the Project; providing technical assistance or guidance which the Applicant is to follow; and the right to intervene in the conduct or performance of the Project. Such involvement will be negotiated with each Applicant prior to signing any agreement.

"**Total Project Cost**" means all the funds to complete the effort proposed by the Applicant, including DOE funds (including direct funding of any FFRDC) plus all other funds that will be committed by the Applicant as Cost Sharing.

Appendix B – Personally Identifiable Information

In responding to this Announcement, Applicants must ensure that Protected Personally Identifiable Information (PII) is not included in the following documents: Project Abstract, Project Narrative, Biographical Sketches, Budget or Budget Justification. These documents will be used by the Merit Review Committee in the review process to evaluate each Application. PII is defined by the Office of Management and Budget (OMB) and DOE as:

> Any information about an individual maintained by an agency, including but not limited to, education, financial transactions, medical history, and criminal or employment history and information that can be used to distinguish or trace an individual's identity, such as their name, social security number, date and place of birth, mother's maiden name, biometric records, etc., including any other personal information that is linked or linkable to an individual.

This definition of PII can be further defined as: (1) Public PII and (2) Protected PII.

a. **Public PII:** PII found in public sources such as telephone books, public websites, business cards, university listing, etc. Public PII includes first and last name, address, work telephone number, email address, home telephone number, and general education credentials.

b. **Protected PII:** PII that requires enhanced protection. This information includes data that if compromised could cause harm to an individual such as identity theft.

Listed below are examples of Protected PII that Applicants must not include in the files listed above to be evaluated by the Merit Review Committee.

- Social Security Numbers in any form
- Place of Birth associated with an individual
- Date of Birth associated with an individual
- Mother's maiden name associated with an individual
- Biometric record associated with an individual
- Fingerprint
- Iris scan
- DNA
- Medical history information associated with an individual
- Medical conditions, including history of disease
- Metric information, e.g. weight, height, blood pressure
- Criminal history associated with an individual
- Employment history and other employment information associated with an individual
- Ratings
- Disciplinary actions
- Performance elements and standards (or work expectations) are PII when they are so intertwined with performance appraisals that their disclosure would reveal an individual's performance appraisal

- Financial information associated with an individual
- Credit card numbers
- Bank account numbers
- Security clearance history or related information (not including actual clearances held)

Listed below are examples of Public PII that Applicants may include in the files listed above to be evaluated by the Merit Review Committee:

- Phone numbers (work, home, cell)
- Street addresses (work and personal)
- Email addresses (work and personal)
- Digital pictures
- Medical information included in a health or safety report
- Employment information that is not PII even when associated with a name
- Resumes, unless they include a Social Security Number
- Present and past position titles and occupational series
- Present and past grades
- Present and past annual salary rates (including performance Awards or bonuses, incentive Awards, merit pay amount, Meritorious or Distinguished Executive Ranks, and allowances and differentials)
- Present and past duty stations and organization of assignment (includes room and phone numbers, organization designations, work email address, or other identifying information regarding buildings, room numbers, or places of employment)
- Position descriptions, identification of job elements, and those performance standards (but not actual performance appraisals) that the release of which would not interfere with law enforcement programs or severely inhibit agency effectiveness
- Security clearances held
- Written biographies (e.g. to be used in a program describing a speaker)
- Academic credentials
- Schools attended
- Major or area of study
- Personal information stored by individuals about themselves on their assigned workstation or laptop unless it contains a Social Security Number

Appendix C – Cost Share Information

Cost Sharing or Cost Matching

The terms "cost sharing" and "cost matching" are often used synonymously. Even the DOE Financial Assistance Regulations, 10 CFR Part 600, use both of the terms in the titles specific to regulations applicable to cost sharing. DOE almost always uses the term "cost sharing," as it conveys the concept that **non-federal share is calculated as a percentage of the Total Project Cost.** An exception is the State Energy Program Regulation, 10 CFR Part 420.12, State Matching Contribution. Here "cost matching" for the non-federal share is calculated as a percentage of the Federal funds only, rather than the Total Project Cost.

How Cost Sharing Is Calculated

As stated above, cost sharing is calculated as a percentage of the Total Project Cost. Following is an example of how to calculate cost sharing amounts for a project with $1,000,000 in federal funds with a minimum 20% non-federal cost sharing requirement:

Formula: Federal share ($) divided by Federal share (%) = Total Project Cost
Example: $1,000,000 divided by 80% = $1,250,000

Formula: Total Project Cost ($) minus Federal share ($) = Non-federal share ($)
Example: $1,250,000 minus $1,000,000 = $250,000

Formula: Non-federal share ($) divided by Total Project Cost ($) = Non-federal share (%)
Example: $250,000 divided by $1,250,000 = 20%

See the sample cost share calculation for a blended cost share percentage below. **Keep in mind that FFRDC funding is DOE funding.**

What Qualifies For Cost Sharing

While it is not possible to explain what specifically qualifies for cost sharing in one or even a couple of sentences, in general, if a cost is allowable under the cost principles applicable to the organization incurring the cost and is eligible for reimbursement under a DOE grant or cooperative agreement, then it is allowable as cost share. Conversely, if the cost is not allowable under the cost principles and not eligible for reimbursement, then it is not allowable as cost share. In addition, costs may not be counted as cost share if they are paid by the Federal Government under another Award unless authorized by Federal statute to be used for cost sharing.

The rules associated with what is allowable as cost share are specific to the type of organization that is receiving funds under the grant or cooperative agreement, though are generally the same for all types of entities. The specific rules applicable to:

- Institutions of Higher Education, Hospitals, and Other Nonprofit Organizations are found at 10 CFR 600.123;

- State and Local Governments are found at 10 CFR 600.224;
- For-profit Organizations are found at 10 CFR 600.313.

In addition to the regulations referenced above, other factors may also come into play such as timing of donations and length of the project period. For example, the value of ten years of donated maintenance on a project that has a project period of five years would not be fully allowable as cost share. Only the value for the five years of donated maintenance that corresponds to the project period is allowable and may be counted as cost share.

Additionally, DOE generally does not allow pre-Award costs for either cost share or reimbursement when these costs precede the signing of the appropriation bill that funds the Award. In the case of a competitive Award, DOE generally does not allow pre-Award costs prior to the signing of the Selection Statement by the DOE Selection Official.

Following is a link to the DOE Financial Assistance Regulations. You can click on the specific section for each Code of Federal Regulations reference mentioned above.

DOE Financial Assistance Rules (10 CFR 600)

As stated above, the rules associated with what is allowable cost share are generally the same for all types of organizations. Following are the rules found to be common, but again, the specifics are contained in the regulations and cost principles specific to the type of entity:

(A) *Acceptable contributions.* All contributions, including cash contributions and third party in-kind contributions, must be accepted as part of the Recipient's cost sharing if such contributions meet all of the following criteria:

(1) They are verifiable from the Recipient's records.

(2) They are not included as contributions for any other federally-assisted project or program.

(3) They are necessary and reasonable for proper and efficient accomplishment of project or program objectives.

(4) They are allowable under the cost principles applicable to the type of entity incurring the cost as follows:

(a) *For-profit organizations.* Allowability of costs incurred by for-profit organizations and those nonprofit organizations listed in Attachment C to OMB Circular A–122 is determined in accordance with the for-profit costs principles in 48 CFR Part 31 in the Federal Acquisition Regulation, except that patent prosecution costs are not allowable unless specifically authorized in the Award document. (v) Commercial Organizations. FAR Subpart 31.2—Contracts with Commercial Organizations

(b) *Other types of organizations.* Allowability of costs incurred by other types of organizations that may be subrecipients under a prime Award is determined as follows:

(i) *Institutions of higher education.* Allowability is determined in accordance with: 2 CFR 220 Cost Principles for Educational Institutions

(ii) *Other nonprofit organizations.* Allowability is determined in accordance with: 2 CFR 230 Cost Principles for Nonprofit Organizations

(iii) *Hospitals.* Allowability is determined in accordance with the provisions of: Title 45 Appendix E to Part 74—Principles for Determining Costs Applicable to Research and Development Under Grants and Contracts With Hospitals

(iv) *Governmental organizations.* Allowability for State, local, or federally recognized Indian tribal government is determined in accordance with: PART 225—Cost Principles for State, Local, and Indian Tribal Governments (OMB Circular A–87)

(5) They are not paid by the Federal Government under another Award unless authorized by Federal statute to be used for cost sharing or matching.

(6) They are provided for in the approved budget.

(B) *Valuing and documenting contributions*

(1) *Valuing Recipient's property or services of Recipient's employees.* Values are established in accordance with the applicable cost principles, which mean that amounts chargeable to the project are determined on the basis of costs incurred. For real property or equipment used on the project, the cost principles authorize depreciation or use charges. The full value of the item may be applied when the item will be consumed in the performance of the Award or fully depreciated by the end of the Award. In cases where the full value of a donated capital asset is to be applied as cost sharing or matching, that full value must be the lesser or the following:

(a) The certified value of the remaining life of the property recorded in the Recipient's accounting records at the time of donation; or
(b) The current fair market value. If there is sufficient justification, the Contracting Officer may approve the use of the current fair market value of the donated property, even if it exceeds the certified value at the time of donation to the project. The Contracting Officer may accept the use of any reasonable basis for determining the fair market value of the property.

(2) *Valuing services of others' employees.* If an employer other than the Recipient furnishes the services of an employee, those services are valued at the employee's regular rate of pay, provided these services are for the same skill level for which the employee is normally paid.

(3) *Valuing volunteer services.* Volunteer services furnished by professional and technical personnel, consultants, and other skilled and unskilled labor may be counted as cost sharing or matching if the service is an integral and necessary part of an approved project or program. Rates for volunteer services must be consistent with those paid for similar work in the Recipient's organization. In those markets in which the required skills are not found in the Recipient organization, rates must be consistent with those paid for similar work in the labor market in which the Recipient competes for the kind of services involved. In either case, paid fringe benefits that are reasonable, allowable, and allocable may be included in the valuation.

(4) *Valuing property donated by third parties.*

(a) Donated supplies may include such items as office supplies or laboratory supplies. Value assessed to donated supplies included in the cost sharing or matching share must be reasonable and must not exceed the fair market value of the property at the time of the donation.

(b) Normally only depreciation or use charges for equipment and buildings may be applied. However, the fair rental charges for land and the full value of equipment or other capital assets may be allowed, when they will be consumed in the performance of the Award or fully depreciated by the end of the Award, provided that the Contracting Officer has approved the charges. When use charges are applied, values must be determined in accordance with the usual accounting policies of the Recipient, with the following qualifications:

(i) The value of donated space must not exceed the fair rental value of comparable space as established by an independent appraisal of comparable space and facilities in a privately-owned building in the same locality.

(ii) The value of loaned equipment must not exceed its fair rental value.

(5) *Documentation.* The following requirements pertain to the Recipient's supporting records for in-kind contributions from third parties:

(a) Volunteer services must be documented and, to the extent feasible, supported by the same methods used by the Recipient for its own employees.

(b) The basis for determining the valuation for personal services and property must be documented.

SAMPLE COST SHARE CALCULATION
FOR BLENDED COST SHARE PERCENTAGE

The following example shows the math for calculating required cost share for a project with $2,000,000 in Federal funds with four tasks requiring different Non-federal cost share percentages:

Task	Proposed Federal Share	Required Federal Share %	Non-federal Cost Share %
Task 1 (R&D)	$1,000,000	80%	20%
Task 2 (R&D)	500,000	80%	20%
Task 3 (Demonstration)	400,000	50%	50%
Task 4 (Outreach)	100,000	100%	0%
	$2,000,000		

Federal share ($) divided by Federal share (%) = Task Cost

Each task must be calculated individually as follows:

Task 1
$1,000,000 divided by 80% = $1,250,000 (Task 1 Cost)
Task 1 Cost minus federal share = Non-federal share
$1,250,000 - $1,000,000 = **$250,000 (Non-federal share)**

Task 2
$500,000 divided 80% = $625,000 (Task 2 Cost)
Task 2 Cost minus federal share = Non-federal share
$625,000 - $500,000 = **$125,000 (Non-federal share)**

Task 3
$400,000 / 50% = $800,000 (Task 3 Cost)
Task 3 Cost minus federal share = Non-federal share
$800,000 - $400,000 = **$400,000 (Non-federal share)**

Task 4
Federal share = $100,000
Non-federal cost share is not mandated for outreach = **$0 (Non-federal share)**

The calculation may then be completed as follows:

Task	Proposed Federal Share	Federal Share %	Required Non-federal Cost Share $	Required Non-federal Cost Share %	Total Project Cost
Task 1	$1,000,000	80%	$250,000	20%	$1,250,000
Task 2	500,000	80%	125,000	20%	625,000
Task 3	400,000	50%	400,000	50%	800,000
Task 4	100,000	100%	0	0%	100,000
	$2,000,000		$775,000		$2,775,000

Blended Cost Share %

Non-federal share ($775,000) divided by Total Project Cost ($2,775,000) = 27.9% (Non-federal)
Federal share ($2,000,000) divided by Total Project Cost ($2,775,000) = 72.1% (Federal)

Appendix D – Statement of Project Objectives Template

STATEMENT OF PROJECT OBJECTIVES

[Recipient Name]
[Project Title]

All of the information to be included in the SOPO should be consistent with the Application upon which the Award is based. The SOPO should be written for public disclosure, and, generally, the total length should not exceed 4-5 pages.

*The following items should **not** be included in the SOPO:*

- *Dollar amounts.*
- *Specific dates.*
- *Subcontractors by name. The Award is with the prime and, as such, the SOPO should not reference the subcontractors.*
- *Intellectual property information or data.*

A. PROJECT OBJECTIVES

[Enter a clear and concise statement of the goals and objectives of the project as well as the expected outcomes.]

B. PROJECT SCOPE

[Include a general overview description of the project. Refer to the DOE Program or Division (for example: Hydrogen, Fuel Cells, and Infrastructure Technologies Program; Buildings and Industrial Technologies Division; etc.) objectives that the project is addressing. This section should be only 1-2 paragraphs long.]

C. TASKS TO BE PERFORMED

[For each Task and Subtask, enter 1-2 paragraphs describing the purpose, approach, and expected outcomes. Include project milestones (do not include dates), where appropriate. If applicable, the Tasks should be organized by project phases/budget periods which correspond to major project milestones or Go/No-Go decision points.]

Below is an example of the type of Task structure desired:

PHASE 1 (or BUDGET PERIOD 1) [TITLE OPTIONAL]

Task 1.0 [Insert Title]
[Insert Description]

Task 2.0 [Insert Title]
[Insert Description]

Subtask 2.1 [Insert Title]

[Insert Description]

Subtask 2.2 [Insert Title]
[Insert Description]

Task 3.0 – Go/No-Go Review Meeting

PHASE 2 (or BUDGET PERIOD 2) [TITLE OPTIONAL]

Task 4.0 [Insert Title]
[Insert Description]

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Task N.0 Project Management and Reporting *(Optional paragraph, per discussion with the DOE Project Officer)*
[Include this as the last Task and number it consecutively with the other Tasks. As part or all of the Task Description, include language along the lines of: "Reports and other deliverables will be provided in accordance with the Federal Assistance Reporting Checklist following the instructions included therein." Additional deliverables (for example, hardware delivered for testing or Peer Review Meetings / Project Review Meetings) not specified in the Reporting Checklist should be included in this Task Description.]

Appendix E – EISA 2007, Relevant Sections

EISA 2007

SEC. 201, DEFINITIONS
Section 211(o)(1) of the Clean Air Act (42 U.S.C. 7545(o)) is amended to read as follows:
"(1) DEFINITIONS.—In this section:

"(A) ADDITIONAL RENEWABLE FUEL.—The term 'additional renewable fuel' means fuel that is produced from renewable biomass and that is used to replace or reduce the quantity of fossil fuel present in home heating oil or jet fuel.

"(B) ADVANCED BIOFUEL.—

"(i) IN GENERAL.—The term 'advanced biofuel' means renewable fuel, other than ethanol derived from corn starch, that has lifecycle greenhouse gas emissions, as determined by the Administrator, after notice and opportunity for comment, that are at least 50 percent less than baseline lifecycle greenhouse gas emissions.

"(ii) INCLUSIONS.—The types of fuels eligible for consideration as 'advanced biofuel' may include any of the following:

"(I) Ethanol derived from cellulose, hemicellulose, or lignin.

"(II) Ethanol derived from sugar or starch (other than corn starch).

"(III) Ethanol derived from waste material, including crop residue, other vegetative waste material, animal waste, and food waste and yard waste.

"(IV) Biomass-based diesel.

"(V) Biogas (including landfill gas and sewage waste treatment gas) produced through the conversion of organic matter from renewable biomass.

"(VI) Butanol or other alcohols produced through the conversion of organic matter from renewable biomass.

"(VII) Other fuel derived from cellulosic biomass.

SEC. 202. RENEWABLE FUEL STANDARD.

(a) RENEWABLE FUEL PROGRAM.—Paragraph (2) of section 211(o) (42 U.S.C. 7545(o)(2)) of the Clean Air Act is amended as follows:

(1) REGULATIONS.—Clause (i) of subparagraph (A) is amended by adding the following at the end thereof: ''Not later than 1 year after the date of enactment of this sentence, the Administrator shall revise the regulations under this paragraph to ensure that transportation fuel sold or introduced into commerce in the United States (except in noncontiguous States or territories), on an annual average basis, contains at least the applicable volume of renewable fuel, advanced biofuel, cellulosic biofuel, and biomass-based diesel, determined in accordance with subparagraph (B) and, in the case of any such renewable fuel produced from new facilities that commence construction after the date of enactment of this sentence, achieves at least a 20 percent reduction in lifecycle greenhouse gas emissions compared to baseline lifecycle greenhouse gas emissions.''.

(2) APPLICABLE VOLUMES OF RENEWABLE FUEL.—Subparagraph (B) is amended to read as follows:

''(B) APPLICABLE VOLUMES.—

''(i) CALENDAR YEARS AFTER 2005.—

''(I) RENEWABLE FUEL.—For the purpose of subparagraph (A), the applicable volume of renewable fuel for the calendar years 2006 through 2022 shall be determined in accordance with the following table:

''Calendar year:	Applicable volume of renewable fuel (in billions of gallons):
2006	4.0
2007	4.7
2008	9.0
2009	11.1
2010	12.95
2011	13.95
2012	15.2
2013	16.55
2014	18.15
2015	20.5
2016	22.25
2017	24.0
2018	26.0
2019	28.0
2020	30.0
2021	33.0
2022	36.0

''(II) ADVANCED BIOFUEL.—For the purpose of subparagraph (A), of the volume of renewable fuel required under subclause (I), the applicable volume of advanced biofuel for the calendar years 2009 through 2022 shall be determined in accordance with the following table:

''Calendar year:	Applicable volume of advanced biofuel (in billions of gallons):
2009	0.6
2010	0.95
2011	1.35
2012	2.0
2013	2.75
2014	3.75
2015	5.5
2016	7.25
2017	9.0
2018	11.0
2019	13.0
2020	15.0
2021	18.0
2022	21.0

''(III) CELLULOSIC BIOFUEL.—For the purpose of subparagraph (A), of the volume of advanced biofuel required under subclause (II), the applicable volume of cellulosic biofuel for the calendar years 2010 through 2022 shall be determined in accordance with the following table:

''Calendar year:	Applicable volume of cellulosic biofuel (in billions of gallons):
2010	0.1
2011	0.25
2012	0.5
2013	1.0
2014	1.75
2015	3.0
2016	4.25
2017	5.5
2018	7.0
2019	8.5
2020	10.5
2021	13.5
2022	16.0

''(IV) BIOMASS-BASED DIESEL.—For the purpose of subparagraph (A), of the volume of advanced biofuel required under subclause (II), the applicable volume of biomass-based diesel for the calendar years 2009 through 2012 shall be determined in accordance with the following table:

''Calendar year:	Applicable volume of biomass-based diesel (in billions of gallons):
2009	0.5
2010	0.65
2011	0.80
2012	1.0

''(ii) OTHER CALENDAR YEARS.—For the purposes of subparagraph (A), the applicable volumes of each fuel specified in the tables in clause (i) for calendar years after the calendar years specified in the tables shall be determined by the Administrator, in coordination with the Secretary of Energy and the Secretary of Agriculture, based on a review of the implementation of the program during calendar years specified in the tables, and an analysis of—

''(I) the impact of the production and use of renewable fuels on the environment, including on air quality, climate change, conversion of wetlands, ecosystems, wildlife habitat, water quality, and water supply;

''(II) the impact of renewable fuels on the energy security of the United States;

‘‘(III) the expected annual rate of future commercial production of renewable fuels, including advanced biofuels in each category (cellulosic biofuel and biomass-based diesel);

‘‘(IV) the impact of renewable fuels on the infrastructure of the United States, including deliverability of materials, goods, and products other than renewable fuel, and the sufficiency of infrastructure to deliver and use renewable fuel;

‘‘(V) the impact of the use of renewable fuels on the cost to consumers of transportation fuel and on the cost to transport goods; and

‘‘(VI) the impact of the use of renewable fuels on other factors, including job creation, the price and supply of agricultural commodities, rural economic development, and food prices.

The Administrator shall promulgate rules establishing the applicable volumes under this clause no later than 14 months before the first year for which such applicable volume will apply.

‘‘(iii) APPLICABLE VOLUME OF ADVANCED BIOFUEL.— For the purpose of making the determinations in clause (ii), for each calendar year, the applicable volume of advanced biofuel shall be at least the same percentage of the applicable volume of renewable fuel as in calendar year 2022.

‘‘(iv) APPLICABLE VOLUME OF CELLULOSIC BIOFUEL.—For the purpose of making the determinations in clause (ii), for each calendar year, the applicable volume of cellulosic biofuel established by the Administrator shall be based on the assumption that the Administrator will not need to issue a waiver for such years under paragraph (7)(D).

‘‘(v) MINIMUM APPLICABLE VOLUME OF BIOMASSBASED DIESEL.—For the purpose of making the determinations in clause (ii), the applicable volume of biomass- based diesel shall not be less than the applicable volume listed in clause (i)(IV) for calendar year 2012.’’.

(b) APPLICABLE PERCENTAGES.—Paragraph (3) of section 211(o) of the Clean Air Act (42 U.S.C. 7545(o)(3)) is amended as follows:

(1) In subparagraph (A), by striking ‘‘2011’’ and inserting ‘‘2021’’.

(2) In subparagraph (A), by striking ‘‘gasoline’’ and inserting ‘‘transportation fuel, biomass-based diesel, and cellulosic biofuel’’.

(3) In subparagraph (B), by striking ‘‘2012’’ and inserting ‘‘2021’’ in clause (i).

(4) In subparagraph (B), by striking ‘‘gasoline’’ and inserting ‘‘transportation fuel’’ in clause (ii)(II).

(c) MODIFICATION OF GREENHOUSE GAS PERCENTAGES.—Paragraph (4) of section 211(o) of the Clean Air Act (42 U.S.C. 7545(o)(4)) is amended to read as follows:

‘‘(4) MODIFICATION OF GREENHOUSE GAS REDUCTION PERCENTAGES.—

‘‘(A) IN GENERAL.—The Administrator may, in the regulations under the last sentence of paragraph (2)(A)(i), adjust the 20 percent, 50 percent, and 60 percent reductions in lifecycle greenhouse gas emissions specified in paragraphs (2)(A)(i) (relating to renewable fuel), (1)(D) (relating to biomass-based diesel), (1)(B)(i) (relating to advanced biofuel), and (1)(E) (relating to cellulosic biofuel) to a lower percentage. For the 50 and 60 percent reductions, the Administrator may make such an adjustment only if he determines

that generally such reduction is not commercially feasible for fuels made using a variety of feedstocks, technologies, and processes to meet the applicable reduction.

''(B) AMOUNT OF ADJUSTMENT.—In promulgating regulations under this paragraph, the specified 50 percent reduction in greenhouse gas emissions from advanced biofuel and in biomass-based diesel may not be reduced below 40 percent. The specified 20 percent reduction in greenhouse gas emissions from renewable fuel may not be reduced below 10 percent, and the specified 60 percent reduction in greenhouse gas emissions from cellulosic biofuel may not be reduced below 50 percent.

''(C) ADJUSTED REDUCTION LEVELS.—An adjustment under this paragraph to a percent less than the specified 20 percent greenhouse gas reduction for renewable fuel shall be the minimum possible adjustment, and the adjusted greenhouse gas reduction shall be established by the Administrator at the maximum achievable level, taking cost in consideration, for natural gas fired corn-based ethanol plants, allowing for the use of a variety of technologies and processes. An adjustment in the 50 or 60 percent greenhouse gas levels shall be the minimum possible adjustment for the fuel or fuels concerned, and the adjusted greenhouse gas reduction shall be established at the maximum achievable level, taking cost in consideration, allowing for the use of a variety of feedstocks, technologies, and processes.

''(D) 5-YEAR REVIEW.—Whenever the Administrator makes any adjustment under this paragraph, not later than 5 years thereafter he shall review and revise (based upon the same criteria and standards as required for the initial adjustment) the regulations establishing the adjusted level.

''(E) SUBSEQUENT ADJUSTMENTS.—After the Administrator has promulgated a final rule under the last sentence of paragraph (2)(A)(i) with respect to the method of determining lifecycle greenhouse gas emissions, except as provided in subparagraph (D), the Administrator may not adjust the percent greenhouse gas reduction levels unless he determines that there has been a significant change in the analytical methodology used for determining the lifecycle greenhouse gas emissions. If he makes such determination, he may adjust the 20, 50, or 60 percent reduction levels through rulemaking using the criteria and standards set forth in this paragraph.

''(F) LIMIT ON UPWARD ADJUSTMENTS.—If, under subparagraph (D) or (E), the Administrator revises a percent level adjusted as provided in subparagraphs (A), (B), and (C) to a higher percent, such higher percent may not exceed the applicable percent specified in paragraph (2)(A)(i), (1)(D), (1)(B)(i), or (1)(E).

''(G) APPLICABILITY OF ADJUSTMENTS.—If the Administrator adjusts, or revises, a percent level referred to in this paragraph or makes a change in the analytical methodology used for determining the lifecycle greenhouse gas emissions, such adjustment, revision, or change (or any combination thereof) shall only apply to renewable fuel from new facilities that commence construction after the effective date of such adjustment, revision, or change.''.

(d) CREDITS FOR ADDITIONAL RENEWABLE FUEL.—Paragraph (5) of section 211(o) of the Clean Air Act (42 U.S.C. 7545(o)(5)) is amended by adding the following new subparagraph at the end thereof:

''(E) CREDITS FOR ADDITIONAL RENEWABLE FUEL.—The Administrator may issue regulations providing: (i) for the generation of an appropriate amount of credits by any person that refines, blends, or imports additional renewable fuels specified by the

Administrator; and (ii) for the use of such credits by the generator, or the transfer of all or a portion of the credits to another person, for the purpose of complying with paragraph (2).''.

(e) WAIVERS.—

(1) IN GENERAL.—Paragraph (7)(A) of section 211(o) of the Clean Air Act (42 U.S.C. 7545(o)(7)(A)) is amended by inserting ‘‘, by any person subject to the requirements of this subsection, or by the Administrator on his own motion'' after ‘‘one or more States'' in subparagraph (A) and by striking out ‘‘State'' in subparagraph (B).

(2) CELLULOSIC BIOFUEL.—Paragraph (7) of section 211(o) of the Clean Air Act (42 U.S.C. 7545(o)(7)) is amended by adding the following at the end thereof:

‘‘(D) CELLULOSIC BIOFUEL.—(i) For any calendar year for which the projected volume of cellulosic biofuel production is less than the minimum applicable volume established under paragraph (2)(B), as determined by the Administrator based on the estimate provided under paragraph (3)(A), not later than November 30 of the preceding calendar year, the Administrator shall reduce the applicable volume of cellulosic biofuel required under paragraph (2)(B) to the projected volume available during that calendar year. For any calendar year in which the Administrator makes such a reduction, the Administrator may also reduce the applicable volume of renewable fuel and advanced biofuels requirement established under paragraph (2)(B) by the same or a lesser volume.‘‘

(ii) Whenever the Administrator reduces the minimum cellulosic biofuel volume under this subparagraph, the Administrator shall make available for sale cellulosic biofuel credits at the higher of $0.25 per gallon or the amount by which $3.00 per gallon exceeds the average wholesale price of a gallon of gasoline in the United States. Such amounts shall be adjusted for inflation by the Administrator for years after 2008.

‘‘(iii) Eighteen months after the date of enactment of this subparagraph, the Administrator shall promulgate regulations to govern the issuance of credits under this subparagraph. The regulations shall set forth the method for determining the exact price of credits in the event of a waiver. The price of such credits shall not be changed more frequently than once each quarter. These regulations shall include such provisions, including limiting the credits' uses and useful life, as the Administrator deems appropriate to assist market liquidity and transparency, to provide appropriate certainty for regulated entities and renewable fuel producers, and to limit any potential misuse of cellulosic biofuel credits to reduce the use of other renewable fuels, and for such other purposes as the Administrator determines will help achieve the goals of this subsection. The regulations shall limit the number of cellulosic biofuel credits for any calendar year to the minimum applicable volume (as reduced under this subparagraph) of cellulosic biofuel for that year.''.

(3) BIOMASS-BASED DIESEL.—Paragraph (7) of section 211(o) of the Clean Air Act (42 U.S.C. 7545(o)(7)) is amended by adding the following at the end thereof:

‘‘(E) BIOMASS-BASED DIESEL.—

‘‘(i) MARKET EVALUATION.—The Administrator, in consultation with the Secretary of Energy and the Secretary of Agriculture, shall

periodically evaluate the impact of the biomass-based diesel requirements established under this paragraph on the price of diesel fuel.

''(ii) WAIVER.—If the Administrator determines that there is a significant renewable feedstock disruption or other market circumstances that would make the price of biomass-based diesel fuel increase significantly, the Administrator, in consultation with the Secretary of Energy and the Secretary of Agriculture, shall issue an order to reduce, for up to a 60-day period, the quantity of biomass-based diesel required under subparagraph (A) by an appropriate quantity that does not exceed 15 percent of the applicable annual requirement for biomass-based diesel. For any calendar year in which the Administrator makes a reduction under this subparagraph, the Administrator may also reduce the applicable volume of renewable fuel and advanced biofuels requirement established under paragraph (2)(B) by the same or a lesser volume.

''(iii) EXTENSIONS.—If the Administrator determines that the feedstock disruption or circumstances described in clause (ii) is continuing beyond the 60- day period described in clause (ii) or this clause, the Administrator, in consultation with the Secretary of Energy and the Secretary of Agriculture, may issue an order to reduce, for up to an additional 60-day period, the quantity of biomass-based diesel required under subparagraph (A) by an appropriate quantity that does not exceed an additional 15 percent of the applicable annual requirement for biomass-based diesel.

''(F) MODIFICATION OF APPLICABLE VOLUMES.—For any of the tables in paragraph (2)(B), if the Administrator waives—

''(i) at least 20 percent of the applicable volume requirement set forth in any such table for 2 consecutive years; or

''(ii) at least 50 percent of such volume requirement for a single year, the Administrator shall promulgate a rule (within 1 year after issuing such waiver) that modifies the applicable volumes set forth in the table concerned for all years following the final year to which the waiver applies, except that no such modification in applicable volumes shall be made for any year before 2016. In promulgating such a rule, the Administrator shall comply with the processes, criteria, and standards set forth in paragraph (2)(B)(ii).''.

SEC. 207. GRANTS FOR PRODUCTION OF ADVANCED BIOFUELS.

(a) IN GENERAL.—The Secretary of Energy shall establish a grant program to encourage the production of advanced biofuels.

(b) REQUIREMENTS AND PRIORITY.—In making grants under this section, the Secretary—

(1) shall make Awards to the Proposals for advanced biofuels with the greatest reduction in lifecycle greenhouse gas emissions compared to the comparable motor vehicle fuel lifecycle emissions during calendar year 2005; and

(2) shall not make an Award to a project that does not achieve at least an 80 percent reduction in such lifecycle greenhouse gas emissions.

(c) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this section $500,000,000 for the period of fiscal years 2008 through 2