

**FINANCIAL ASSISTANCE
FUNDING OPPORTUNITY ANNOUNCEMENT**



**U.S. Department of Energy
Golden Field Office**

Recovery Act: Development of Algal / Advanced Biofuels Consortia

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NOTE: Questions regarding the content of this announcement must be submitted through FedConnect. Applicants must be registered in FedConnect to submit or view Questions.

APPLICATION SUBMISSION, FEDCONNECT QUICK START GUIDE, REGISTRATION REQUIREMENTS, AND SUBMISSION OF QUESTIONS

1. Application Submission

APPLICATIONS MUST BE SUBMITTED THROUGH FEDCONNECT AT <https://www.fedconnect.net/> TO BE CONSIDERED FOR AWARD. The Adobe Application Package identified in Section IV. C. is posted as an attachment to this Funding Opportunity Announcement (FOA), (in FedConnect). It is the responsibility of the applicant, prior to the Application due date and time, to verify successful transmission.

Organizations with system-to-system capabilities with Grants.gov may continue to use Grants.gov for submissions. Applications submitted through Grants.gov will also be considered for award.

2. 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 (DOE), including FedConnect, constitutes the authorized representative's approval and electronic signature.

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

3. FedConnect Quick Start Guide

Use this guide to assist you with FedConnect:

https://www.fedconnect.net/FedConnect/PublicPages/FedConnect_Ready_Set_Go.pdf.

4. Registration Requirements

To submit an Application in response to this FOA, applicants must be registered with FedConnect. Before you can register with FedConnect, you will need the following:

- A. Your organization's Dun and Bradstreet Data Universal Numbering System (DUNS) (including plus 4 extension if applicable). To check whether your organization has a DUNS or if your organization requires a DUNS, search for the number or request one at <http://fedgov.dnb.com/webform/displayHomePage.do>.
- B. A federal Central Contractor Registration (CCR) account. If your organization is not currently registered with CCR, please register at www.ccr.gov before continuing with your FedConnect registration.
- C. Possibly, your organization's CCR MPIN. If you are the first person from your organization to register, FedConnect will need to create an organization account. Only a person who knows your organization's CCR MPIN can do this. To find out who this is in your organization, go to <http://www.ccr.gov/> and click **Search CCR**. Once you've found your organization, locate the Electronic Business Point of Contact.

After the initial FedConnect account is created, employees can register themselves without the MPIN. If you are not sure whether your organization has an account with FedConnect, complete the registration form and FedConnect will let you know if your organization is registered. (PLEASE REFER TO THE FEDCONNECT QUICK START GUIDE).

Applicants who are not registered with CCR and FedConnect, should allow at least 21 days to complete these requirements. It is suggested that the process be started as soon as possible. For those applicants already registered in CCR, the CCR registration must be updated annually at <http://www.ccr.gov/Renew.aspx>.

5. Questions

Questions regarding the content of the announcement must be submitted through the FedConnect portal. You must register with FedConnect to submit questions and to receive responses to questions. It is recommended that you register as soon after release of the FOA as possible to have the benefit of all responses. More information is available at https://www.fedconnect.net/FedConnect/PublicPages/FedConnect_Ready_Set_Go.pdf. DOE will try to respond to a question within three business days, unless a similar question and answer have already been distributed.

Questions pertaining to the submission of applications through FedConnect or the FedConnect system should be directed by e-mail to support@FedConnect.net or by phone to FedConnect Support at 1-800-899-6665.

6. Adobe Application Package – Instructions for Completion of Forms

The Adobe Application Package was intended to be utilized in Grants.gov; however, the DOE is currently utilizing it with FedConnect. Please disregard any information within the Adobe Application Package regarding use with Grants.gov; specifically, **DO NOT use the “Save & Submit” button in the Adobe Application Package**, since that button is only used when submitting an application in Grants.gov. Instead, do the following:

- 1) Copy the Adobe Application Package to your desktop.
- 2) Open the Adobe Application Package, and first complete the SF-424 Application, Project/Performance Site Location(s) form, and SF-LLL form (if applicable) which are all part of the Adobe Application Package. To start this process, simply click on the form's name to select the item and then click on the => button. This will move the document to the appropriate "Documents for Submission" box and the form will be automatically added to your application package. Open the forms by selecting the form name and clicking on the "Open Form" button. Then complete the required data fields.
- 3) Identify the remaining forms required to be completed, as identified in Part IV of the Announcement. Prepare and save these forms to your desktop (e.g., project narrative, resume file, budget file...). Once finalized and files are named as indicated in Part IV of the Announcement, upload (attach) these files individually within the Adobe Application Package by clicking on “Add Mandatory Other Attachment” to attach the Project Narrative and clicking on “Add Optional Other Attachment” to attach the remaining files.
- 4) Once all completed files have been attached within the Adobe Application Package, save the Adobe Application Package to your desktop, and submit to FedConnect, following the steps outlined in the FedConnect Quick Start Guide at: https://www.fedconnect.net/Fedconnect/PublicPages/FedConnect_Ready_Set_Go.pdf.

Note that it is the responsibility of the applicant, prior to the Application due date and time, to verify successful transmission in FedConnect.

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SECTION I – FUNDING OPPORTUNITY DESCRIPTION

A. Introduction: American Recovery and Reinvestment Act of 2009

Projects under this Funding Opportunity Announcement (FOA) will be funded, in whole or in part, with funds appropriated by the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, (Recovery Act or Act). The Recovery Act's purposes are to stimulate the economy and to create and retain jobs. The Act gives preference to activities that can be started and completed expeditiously, including a goal of using at least 50 percent of the funds made available by it for activities that can be initiated not later than June 17, 2009. Due to the schedule of this FOA, the preceding date will not affect applications submitted under this FOA. Accordingly, special consideration will be given to projects that promote and enhance the objectives of the Act, especially job creation, preservation and economic recovery, in an expeditious manner.

Be advised that special terms and conditions may apply to projects funded by the Act relating to:

- Reporting, tracking and segregation of incurred costs;
- Reporting on job creation and preservation;
- Publication of information on the Internet;
- Access to records by Inspectors General and the Government Accountability Office;
- Prohibition on use of funds for gambling establishments, aquariums, zoos, golf courses or swimming pools;
- Ensuring that iron, steel and manufactured goods are produced in the United States;
- Ensuring wage rates are comparable to those prevailing on projects of a similar character;
- Protecting whistleblowers and requiring prompt referral of evidence of a false claim to an appropriate inspector general; and
- Certification and Registration.

These special terms and conditions will be based on provisions included in Titles XV and XVI of the Act. The exact terms and conditions will be provided as soon as possible. The currently available Special Provisions are located at:

http://management.energy.gov/business_doe/business_forms.htm.

The Office of Management and Budget (OMB) has issued Initial Implementing Guidance for the Recovery Act. See [M-09-10, Initial Implementing Guidance for the American Recovery and Reinvestment Act of 2009](#). OMB will be issuing additional guidance concerning the Act in the near future. Applicants should consult the DOE website, www.energy.gov, the OMB website <http://www.whitehouse.gov/omb/>, and the Recovery website, www.recovery.gov, regularly to keep abreast of guidance and information as it evolves.

Recipients of funding appropriated by the Act shall comply with requirements of applicable Federal, State, and local laws, regulations, DOE policy and guidance, and instructions in this FOA, unless relief has been granted by the Department of Energy (DOE). Recipients shall flow down the requirements of applicable Federal, State and local laws, and regulations, DOE policy and guidance, and instructions in this FOA to sub-recipients at any tier to the extent necessary to ensure the recipient's compliance with the requirements.

Be advised that Recovery Act funds can be used in conjunction with other funding as necessary to complete projects, but tracking and reporting must be separate to meet the reporting requirements of the Recovery Act and related OMB Guidance. Applicants for projects funded by sources other than the Recovery Act should plan to keep separate records for Recovery Act funds and ensure those records comply with the requirements of the Act. Funding provided through the Recovery Act that is supplemental to an existing grant is one-time funding.

Applicants should begin planning activities for their first tier subawardees, including obtaining a DUNS number (or updating the existing DUNS record), and registering with the Central Contractor Registration (CCR). The extent to which subawardees will be required to register in CCR will be determined by OMB at a later date.

B. Description

Background

DOE's Office of Energy Efficiency and Renewable Energy (EERE), through the Office of the Biomass Program (OBP), announces the availability of funding for establishing Consortia for two primary topic areas - Development of Algal Based Biofuels, and Development of Advanced Cellulosic Biofuels. The intended purpose of this FOA is to serve three primary goals of EERE: 1) increase the viability and deployment of renewable energy technologies, thereby 2) spurring the creation of a domestic bio-industry, resulting in 3) a dramatic reduction in dependence on imported oil.

This FOA addresses the objectives set forth in the following statutes:

American Reinvestment and Recovery Act of 2009: The Recovery Act supports the applied research, development, demonstration, and deployment activities for projects related to biomass (Section 2, Division A, Title IV). The projects sought under this FOA support Recovery Act objectives, including the following: to preserve and create jobs and promote economic recovery; to provide investments needed to increase economic efficiency by spurring technological advances in science and health; and, to invest in transportation, environmental protection, and other infrastructure that will provide long-term economic benefits.

Energy Independence and Security Act of 2007 (EISA): EISA provisions support the continued development and use of biofuels, including a Renewable Fuel Standard (RFS) requiring 36 billion gallons per year of renewable fuels by 2022 with annual requirements for advanced biofuels.

Energy Policy Act of 2005 (EPAct 2005): EPAct 2005 renewed and strengthened existing federal policies fostering ethanol production, and provides incentives for the production and purchase of biobased products. The projects selected from this FOA will support the objectives of EPAct 2005, Section 932.

From 1978 until 1996, the Aquatic Species Program was managed by DOE's Office of Fuels Development. During this time period, a considerable body of knowledge related to algal strains and how they behave under controlled environmental conditions was developed. These organisms are capable of generating very large amounts of biomass under marginal growing

conditions. Because of the recent debate related to displacement of productive food crop land for production of biofuels and the potential for higher yields of biofuels per acre as compared to terrestrial feedstocks, there is renewed interest in exploring the potential of algae as a path to liquid transportation fuels.

OBP has also been engaged in developing biofuels from cellulosic biomass for over thirty years. For the most part, this effort has focused on using biological or thermochemical pathways for conversion of cellulosic biomass to fuel grade ethanol. The use of fuel ethanol as a blending component in gasoline has grown substantially over the last decade; however, that use also revealed near term deployment challenges that require accelerated deployment of E85 or approval of higher than 10% blends of ethanol with gasoline in non-flex fuel vehicles (FFVs) if ethanol continues to be the dominant fuel used to meet the Renewable Fuel Standard as defined in EISA. Consequently, in addition to ethanol, OBP recognizes the need to develop technologies capable of producing infrastructure compatible biofuels - in other words, biofuels that can readily be stored, transported/distributed, blended with petroleum derived hydrocarbons, and utilized in existing end use devices such as engines, turbines, and burners. It is important to engage end users of the proposed biofuels to ensure the fuel specifications and performance attributes are compatible with current and future engine and fuel delivery system designs.

Under this FOA, DOE will require applications from Consortia (see definition in Appendix A). Applications from entities not part of a Consortium will not be considered. Consortia are being sought that synergistically use their unique capabilities to expedite the development of biomass-based fuel production pathways. These teaming efforts are expected to involve specific scientific, engineering, system design, analysis, and project management disciplines that can work together effectively to accomplish the stated project objectives. Such partnerships should include an appropriate mix of U.S. industry, academia, and government and/or non-government laboratories, and could include foreign entities with the appropriate skill sets. Additionally, these partnerships should seek to utilize “best-in-class” technical approaches. DOE is not prescribing a specific number of team members, team structure, or mix of organization types. It will be up to the Consortia to determine the appropriate mix of technical partners.

This FOA contains two distinct topic areas: Topic Area 1 – Algal Biofuel Consortia, and Topic Area 2 – Advanced Infrastructure Compatible Biofuels Consortium. There is no limit to the number of applications that an individual entity may submit either as a lead applicant or as a member of a Consortium.

Topic Area Descriptions

Topic Area 1 – Algal Biofuels Consortium/Consortia

There are many areas where research and development (R&D) is needed to fully realize the potential of algae. These R&D needs were explored at the 2008 National Algal Biofuels Technology Roadmap Workshop, which included attendance of over 200 subject matter experts. Their contributions, along with comments being gathered through a DOE Request for Information on the draft Roadmap, will serve as an important source of information for DOE in pursuit of mechanisms to help accelerate algal biofuels commercialization.

The Algal Biofuel Consortia will take a research and development approach to investigate the

potential for algae to commercially produce a variety of biofuels, such as renewable gasoline, diesel or jet fuel. It is anticipated that the partnerships selected from this Topic Area will develop the framework for sustainable algae production that is ultimately required for this technology to reach commercialization.

DOE has identified three broad technical areas of interest under this Topic Area. Applicants may address one or more of these key areas, in whole or in part. These areas are generally described to encourage the Consortia to propose and justify their own outlined strategies and algal development pathways:

1. Feedstock Supply - Strain Development and Cultivation:

Investigate and develop a variety of algal strains from different environments, e.g., marine, freshwater, brackish/saline, wastewater, etc. Algal screening should at a minimum cover the growth physiology, metabolite production, and strain robustness. Investigate multiple designs for cultivating algal strains, whether they are closed, open, or hybrid systems in order to successfully develop a sustainable system.

2. Feedstock Logistics - Harvesting and Extraction:

Feedstock logistics include harvesting, dewatering and extraction of fuel producing lipids and carbohydrates from algae. Depending on the extraction methods employed, processing technologies, such as flocculation/dissolved air filtration, flocculation/sedimentation, filtration, centrifugation and others may be investigated. Current methods of lipid extraction using solvent systems, transesterification, mechanical rupture, and others may be investigated. Examining other mechanisms that bypass the need for harvesting algal biomass and the extraction of fuel intermediates is also encouraged.

3. Conversion/Production - Accumulation of Intermediate and Synthesis of Fuels and Co-products:

Conversion technologies capable of producing biofuels from whole algae, such as pyrolysis, enzymatic digestion followed by fermentation, and gasification, may be investigated. Conversion of oil extracts to biofuels may also include investigations of chemical transesterification, and catalytic cracking. An investigation of potential co-products from algae may be addressed and may include deriving additional energy from residual algal biomass (e.g., anaerobic digestion). All possible pathways, including but not limited to direct synthesis of ethanol and other advanced biofuels that bypass the need for subsequent conversion, may be investigated.

Applicants should include a detailed discussion of the reasoning behind the proposed strategy or strategies and why the proposed technological pathway(s) has/have the highest probability of success. Sustainable practices, life-cycle and economic analyses, and resources management should be addressed relative to the proposed pathways. Economic and resource issues must be taken into account throughout the process and should be incorporated into the proposed strategy(ies). The Applicant should also include a discussion of where it expects its research and development efforts to be at the conclusion of three years.

At the conclusion of the three year effort, a design report will be required from the Consortium, detailing the current state of the technology(ies) investigated and including a cost analysis and a life cycle analysis. The cost analysis should include the modeled cost of algal biofuels production, both first of a kind and nth plant, based on the experimental and/or operational data gathered from the Consortium's test facility(ies) over the course of the three-year project.

The partnerships will likely span many institutions, thus, the management plan will be evaluated for strategic methods that maximize the exchange of information and existing capabilities (e.g. instruments, facilities, and administrations). In addition, it will be required that researchers publish their findings, share foundational research at meetings and make available unmodified algal strains with desirable properties that have been identified during this funding period. The Consortium shall also convene a yearly meeting, perhaps in conjunction with existing trade organizations or academic meetings, to share and exchange information with the public, DOE program managers, and be reviewed independently by external peer-reviewers. DOE will require the selected Consortium/Consortia to report on the effectiveness of the proposed consortium structure and project management plan per the Reporting Requirements associated with the award and at the peer reviews.

The adoption of a Laboratory Information Management (LIM) system, such as the ones currently in place at the Bioenergy Research Centers, is strongly advised as a centralized data storage and sharing platform. DOE encourages the Consortium to license non-exclusively the technologies it develops to the general research community to ensure an accelerated path towards algal biofuels nationally. Participants in the Consortium may devote time to developing educational programs and community outreach events.

Topic Area 2 – Advanced Infrastructure Compatible Biofuels Consortium

The current domestic transportation sector has evolved in lock step with the domestic petroleum industry under increasingly stringent emissions related environmental regulations. This evolution has resulted in a liquid hydrocarbon fuel production, distribution, and end use infrastructure that very effectively serves the transportation needs of the country. An enormous investment has been made in this infrastructure over the last 100 plus years and it is desirable to continue to reap the benefits of that investment. This infrastructure is based primarily on petroleum derived hydrocarbon fuels that have specific physicochemical properties that enable them to be distributed to, and utilized in, a wide variety of end uses. These end uses include: internal combustion engines, jet turbines, and the distribution network of pipelines, rail cars, and tank trucks that deliver the fuel to the point of end use. The fuels have specified chemical characteristics that are important to the performance of the respective device and the emission profile resulting from combusting the fuel in the device. This Topic Area seeks applications to develop biomass based alternative fuels that are capable of simply being “drop in” replacements for the hydrocarbon based fuels currently being used in these systems instead of trying to adapt the systems to different fuels.

This Topic Area also seeks applications to develop new and innovative approaches for the conversion of biomass to advanced biofuels that are infrastructure compatible, essentially going beyond current technical pathways for producing hydrocarbons from biomass feedstocks. Examples of current technical approaches for production of hydrocarbons from biomass would

be the Exxon-Mobil's 'Seven Step Methanol to Gasoline' process or any configuration of gasification coupled to conventional Fischer Tropsch synthesis. Applications proposing either of these two approaches, will be considered mature technologies and will not score favorably under merit review Criterion 1. Proposed Technologies are expected to be "Next Generation" and, optimally, address issues related to cost, conversion efficiencies, energy density, performance attributes, sustainability, and greenhouse gas footprint.

This Topic Area is not intended to be prescriptive in the technical approach to achieving the stated objectives of producing hydrocarbon fuels from high impact biomass feedstocks. High impact biomass feedstocks are those that are domestically available and have an agronomically and ecologically sustainable ultimate availability potential of at least 100 million dry metric tonnes per year. Applicants can propose any technology(ies) they feel provides the best pathway resulting in infrastructure compatible hydrocarbon fuels starting from biomass feedstocks. However, the best pathway(s) must take into consideration the cost competitiveness (relative to petroleum derived fuels), energy density of the resulting fuel, sustainability of the overall process, and the net greenhouse gas emissions for the technology. The conversion feedstock is intended to be cellulosic, but non-food natural oils will be considered provided the technology using this feedstock can be shown to meet the same performance criteria and high impact status stated above. Although this Topic Area is primarily concerned with development of advanced infrastructure compatible biofuels, to the extent that other co-products can clearly be shown to enhance the performance attributes of a given technical approach, co-products can and should be included. However, technology pathways resulting in co-products, other than liquid transportation fuels, comprising more than 30% on a weight basis of the starting biomass, will be considered a non-optimal use of biomass feedstock within this Topic Area.

Ideally, it is anticipated that 4-6 strategies will be investigated at the onset of the Consortium. These initially proposed strategies should include a clear reasoning as to why the selected technical paths have the highest probability of success. From these strategies the Consortium will then develop a deeper understanding of one to three process design(s) from the down-selection process executed within the first year. It is also expected that design reports will be published that document the current state of technology and identify cost-sensitivities associated with the overall process design. **It is highly desirable that the technology proposed for development by the Advanced Biofuels Consortium be advanced to the stage where it is ready to undergo Process Development Unit (PDU) scale testing by the end of year three.** An accompanying Life Cycle Analysis (LCA) will also be published as part of the final technical report at the end of year three. A modeled cost of biofuels production, both first of a kind and nth plant based on experimental and operational data gathered from the Consortium's testing facilities will also need to be furnished to DOE. This will form the basis from which DOE can independently assess and validate the Consortium's progress and identify reasonable yearly fuel cost targets. The Consortium shall also convene a yearly meeting, perhaps in conjunction with existing trade organizations or academic meetings or program reviews, to share and exchange information with the public, DOE program managers, and be reviewed independently by external peer-reviewers. DOE will require the selected Consortium to report on the effectiveness of the proposed consortium structure and project management plan per the Reporting Requirements associated with the award and at the peer reviews.

For additional information and details relative to Topic Area 2, see Appendix G.

Requirements and Limitations Related to Topic Areas 1 and 2

The Consortium structure should consist of a Consortium Lead Organization (with associated Director and other key personnel) and Technical Partners who will conduct the technical scope of work described by the Consortium in collaboration with the Lead Organization. All participants must be clearly identified. The Consortium Lead should be focused on the coordination and management of the overall technical effort in addition to the strategy, approach, and expected outcomes. The Consortium Lead must describe how they will effectively maintain cohesiveness in a group of organizations having different corporate or operating cultures. It is anticipated that the award(s) per Topic Area will be made to the Lead Organization within the selected Consortium, with the technical partners as sub-recipients to the Lead Organization. Further, DOE will require the selected Consortia to report on the effectiveness of the proposed Consortium structures and project management plans in carrying out the proposed research over the course of the projects.

A Non-Disclosure Agreement (NDA) and a Memorandum of Understanding (MOU) signed by all partners **are required** as part of the application. Refer to Section IV.C.3.d and Section IV.C.3.e and Appendices D and E for requirements and instructions. A description of Consortium's freedom to operate in the necessary intellectual property arena (see Appendix F) **is required** as part of the Project Narrative (see Section IV.C.3.b).

The Consortium must develop and sign an Intellectual Property (IP) Management Plan using the MOU as a guideline. The IP Management Plan should describe handling of IP, including cross-licensing of IP, licensing of background IP, handling of joint inventions, plans for information sharing with the public, how algal strains will be made available to researchers, and how IP will be licensed to the general research community. One IP Management Plan signed by all parties in the proposed Consortium (including any sub-recipients) must be submitted by the Consortium Lead no later than 30 days after notification of selection for negotiation of an award. DOE expects the Partners to conduct business among themselves to facilitate the free flow of information within the Consortium. Unlike the NDA and MOU, DOE has not provided a specific example of an IP management plan, but expects the Consortium to use the principles set forth in the MOU as a guideline for drafting the IP management plan (for more information, See VIII.K).

No major construction activities can be undertaken as part of this FOA. The use of a Consortium is expected to bring together both the human and physical capital necessary to achieve the objectives of this FOA. It is permissible to make modifications to existing experimental infrastructure (such as vessels, reactors, analytical equipment, instrumentation, etc.) at one or more partnering research facilities. Such modifications and the total of all new equipment, however, cannot exceed 20% of the value of the total project cost. Capital expenditure for analytical tools and instrumentation to enhance existing infrastructure is also permissible.

Because funding for this FOA is being provided as part of the Recovery Act, applicants will need to provide a discussion on the impact the proposed work will have on job creation and/or retention. Describe the assumptions and analysis used in deriving the total number of jobs projected in both near term (three years) and long term activities relative to the work being proposed. Similarly, the proposed technology pathway(s) and/or process(es) need(s) to demonstrate greenhouse gas (GHG) reductions over conventional transportation fuels and ideally, the final optimized process(es) should yield fuels that have the potential to reach greater

than or equal to 50% GHG reduction.

SECTION II – AWARD INFORMATION

0. Type of Award Instrument

Cooperative Agreements

- DOE anticipates awarding cooperative agreements under this program announcement (See Part VI.B.5 Statement of Substantial Involvement).

A. Estimated Funding

- Approximately \$85 Million in Recovery Act funds are expected to be available for new awards under this announcement.

B. Maximum and Minimum Award Size

- Ceiling for Algae Consortium/Consortia/Topic Area 1 (i.e., the maximum amount for an individual award made under this announcement): \$50 Million
- Ceiling for Advanced Biofuels Consortium/Topic Area 2 (i.e., the maximum amount for an individual award made under this announcement): \$35 Million
- Floor (i.e., the minimum amount for an individual award made under this announcement): none

C. Expected Number of Awards

- Under this announcement, DOE expects to make the following number of awards within each Program/Topic Area:

Program/Topic Area	Number of Awards
Algal Biofuels Consortium/Consortia (Topic Area 1)	1 – 2
Advanced Infrastructure Compatible Biofuels Consortium (Topic Area 2)	1

D. Anticipated Award Size

- The anticipated award size for projects under each Program/Topic Area in this announcement is:

Program/Topic Area	Award Size
Algal Biofuels Consortium/Consortia (Topic Area 1)	\$25 – 50 Million
Advanced Infrastructure Compatible Biofuels Consortium (Topic Area 2)	\$35 Million

E. Period of Performance

- DOE anticipates projects will be 3 years in duration.

F. Type of Application

- DOE will accept only new applications under this announcement (i.e., applications

for renewals of existing DOE funded projects will not be considered).

SECTION III - ELIGIBILITY INFORMATION

A. Eligible Applicants

Under this FOA, DOE will require applications from Consortia (see definition in Appendix A). Applications from entities not part of a Consortium will not be considered.

The following entities are eligible to apply for this announcement as the Consortium Lead: (1) institutions of higher education; (2) nonprofit and for-profit private entities; (3) State and local governments; (4) Indian Tribes and Tribal Energy Resource Development Organizations or Groups; and (5) DOE/NNSA National Laboratory Contractors (as defined in EPAAct 2005).

Consortia members may include the entities described above, as well as other Federal agencies and non-DOE Federally Funded Research and Development Center (FFRDC) Contractors. However, 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 participate in any capacity.

Foreign participants are not eligible as the Consortium Lead; however, foreign participants are eligible as sub-recipients within the Consortium provided that:

- The foreign participant effort, in aggregate, shall not exceed 20% of the Total Project Cost (which includes both the lead applicant's and the foreign sub-recipient's portions of the effort combined).
- The foreign participant must provide at least 20% cost share for its own portion of the project.

B. Cost Sharing

DOE requests that applicants provide a minimum cost share of 20% of the total project cost (cost share funds must come from non-Federal sources unless otherwise allowed by law). However, using the Secretary's statutory authority to reduce cost share requirements, applications with proposed cost share as low as 10% shall be considered, and for Indian Tribes or Tribal Energy Development Resource Organizations or Groups, cost share may be waived in full. Applicants proposing applicant cost share below 20% must provide a justification for their request in the Project Narrative Section IV.C.3.b. Please note that cost share is a Program Policy Factor in accordance with Section V.A.3 of the FOA.

C. Other Eligibility Requirements

DOE National Laboratory Contractors and Other Federally Funded Research and Development Center (FFRDC) Contractors

A DOE National Laboratory Contractor is eligible to apply for funding under this announcement if its cognizant contracting officer provides written authorization and this authorization is submitted with the application. If a DOE National Laboratory 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 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, and will not place the laboratory in direct competition with the domestic private sector.”

FFRDC contractors may be proposed as team members on another entity's application, subject to the following guidelines:

Authorization for non-DOE FFRDCs. The Federal agency sponsoring the FFRDC contractor must authorize in writing the use of the FFRDC contractor on the proposed project and this authorization must be submitted with the application. The use of a FFRDC contractor must be consistent with the contractor's authority under its award.

Authorization for DOE FFRDCs. The cognizant contracting officer for the FFRDC must authorize in writing the use of a DOE FFRDC contractor on the proposed project and this authorization must be submitted with the application. 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 DOE assigned programs at the laboratory, and will not place the laboratory in direct competition with the domestic private sector.”

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 proposal system and other FFRDC contractors through an interagency agreement with the sponsoring agency.

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.

FFRDC Contractor Effort. The FFRDC contractor effort, in aggregate, shall not exceed 50% of the total estimated 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.

SECTION IV – APPLICATION AND SUBMISSION INFORMATION

A. Address to Request Application Package

The Adobe Application Package is provided as a separate attachment to this FOA in FedConnect at <http://www.fedconnect.net/> (see pages 2 and 3 for additional information regarding FedConnect Registration and the Adobe Application Package). Once you have SAVED the application package and completed all the required documentation, you will submit your application via the FedConnect portal. DO NOT use the Save & Submit selection in Grants.gov.

Organizations with system-to-system capabilities with Grants.gov (i.e., Universities) may continue to use Grants.gov for submission. Applications submitted through Grants.gov will also be considered for award.

B. Letter of Intent and Pre-Application

1. Letters of Intent

Letters of Intent are not required.

2. Pre-application

A pre-application is not required.

C. Content and Form of Application

The Adobe Application Package is provided as a separate attachment to this FOA in FedConnect. **See page 3 for additional information regarding the Adobe Application Package.**

You must complete the mandatory forms and any applicable optional forms (e.g., SF-LLL, Disclosure of Lobbying Activities) in accordance with the instructions on the forms and the additional instructions below. **Files that are attached to the forms must be in Adobe Portable Document Format (PDF), unless otherwise specified in this announcement.**

Once the forms below have been completed, save the Adobe Application Package in a single file, using up to 10 letters of the Applicant's Organization Name as the file name (e.g., UCLA). If your organization is submitting more than one Application, you must identify an application number at the end of each file name (e.g., UCLA-1). If your organization is submitting more than one application to different topic areas, you must identify an application number and the Topic Area Number at the end of each file name (e.g., UCLA-1-Topic 1).

1. SF 424 - Application for Federal Assistance

Complete this form first to populate data in other forms. This form should be completed and submitted by the Consortium Lead. Complete all required fields in accordance with the pop-up instructions on the form. The list of certifications and assurances referenced in Field 21 can be found at http://management.energy.gov/business_doe/business_forms.htm, under Certifications and Assurances.

Note: The dates and dollar amounts on the SF 424 should pertain to the entire project period, not just the first year, first phase or other subset of the project period.

2. Project/Performance Site Location(s)

Indicate the primary site where the work will be performed. If a portion of the project will be performed at any other site(s), identify the site location(s) in the blocks provided. **Note that the Project/Performance Site Congressional District is entered in the format of the 2 digit state code followed by a dash and a 3 digit Congressional district code; for example, VA-001.** In the form, hover over this field for additional instructions.

Use the ‘Next Site’ button to expand the form to add additional Project/Performance Site Locations.

3. Other Attachments Form

Submit the following files with your application and attach them to the Other Attachments Form. Click on “Add Mandatory Other Attachment” to attach the Project Narrative. Click on “Add Optional Other Attachment,” to attach the other files.

a) 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 (Consortium Lead), the project director/principal investigator(s), the project title, the Topic Area, 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 – all Consortium partners). This document must not include any proprietary or sensitive business information, as DOE may make it available to the public. 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 this information in a file named “Summary.pdf,” and click on “Add Optional Other Attachment” to attach.

b) Project Narrative File – Mandatory Other Attachment

The project narrative must not exceed 30 pages, including charts, graphs, maps, photographs, and other pictorial presentations, when printed using standard 8.5” by 11” paper with 1” margins (top, bottom, left, and right), single spaced. EVALUATORS WILL REVIEW ONLY THE NUMBER OF PAGES 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. See Section VIII.D for instruction on how to mark proprietary application information. Save the Project Narrative in a single file named “Project.pdf,” and click on “Add Mandatory Other Attachment” to attach.

The project narrative must include:

- Cover Page and Table of Contents (not included in the page limit)
The Cover Page must indicate the name of the Consortium Lead organization and the names of all Consortium partners, the announcement (FOA) number, the project title, both the technical and business points of contact with their names,

titles, addresses, telephone and facsimile numbers and electronic email addresses. Finally, the Topic Area under which the Applicant is applying must be included on the Cover Page.

- **Project Objectives:**
This section should provide a clear, concise statement of the specific objectives/aims of the proposed project.
- **Cost Share Reduction Request and Justification**
If applicable, a discussion justifying the reduction in cost share must be included (See Section III.B).
- **Discussion of Ownership of Intellectual Property Pertaining to Proposed Technological Pathway(s)**
The section should describe the applicant's rights to use the intellectual property associated with the proposed technological pathway(s). See Appendix F for guidance.
- **Merit Review Criteria**
This section should be formatted to address each of the merit review criterion and sub-criterion listed in Part V. A. 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 ADDRESS SEPARATELY EACH OF THE MERIT REVIEW CRITERION AND SUB-CRITERION.**
- **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 modify or acquire equipment, describe comparable equipment, if any, already at your organization and explain why it cannot be used.
- **Statement of Project Objectives (SOPO)**
The Statement of Project Objectives should be provided in a similar format as the SOPO template shown in Appendix H. 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.
- **American Recovery and Reinvestment Act of 2009, P.L. 111-5 (Recovery Act) Information**
This section should address how the project will promote and enhance the objectives of the Recovery Act, especially job creation and/or preservation, and economic recovery in an expeditious manner. The response must include quantitative data supporting the number of jobs created and/or preserved, as well as data supporting any other direct economic recovery impacts attributable to the performance and conduct of the project.
- **Bibliography/References Cited, as appropriate (not included in page limit)**
Provide a bibliography of any references cited in the Project Narrative. Each reference must include the names of the authors, the article and journal title, book title, volume number, page numbers, and year of publication.

All the components of your Project Narrative (listed above) must be within the Narrative page limit specified above. Documents listed below may be included as clearly marked appendices to

your Narrative 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.

c) Resume File

Provide a resume for each key person proposed, including subawardees and consultants if they meet the definition of key person. A key person is any individual who contributes in a substantive, measurable way to the execution of the project. Save all resumes in a single file named “Resumes.pdf” and click on “Add Optional Other Attachment” to attach. 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 following information, if applicable:

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

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

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.

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

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).

For 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 (Consortium Lead) 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:

- Process for making decisions on scientific/technical direction;
- Publications;
- Intellectual property issues;
- Communication plans;
- Procedures for resolving conflicts; and
- PIs’ roles and administrative, technical and scientific responsibilities for the project.

As previously noted in Section III.A, foreign participants may not apply as the Consortium Lead, but can participate as a technical partner. Please refer to this section for eligibility requirements as they relate to foreign participants.

The information requested here relative to Multiple Principal Investigators and the plan requirements may be addressed within the Project Narrative within Section IV.C.3.b – Merit Review Criterion (fourth bullet).

The Resume File does not have a page limitation.

d) Non-Disclosure Agreement (NDA)

One NDA signed by all parties in the proposed Consortium (including any sub-recipients) must be submitted with the application. DOE recommends using the example provided in Appendix D, without substantial changes. If the document requires amending before submission with the application, submit a red-lined version of the document with changes shown. DOE expects the partners to conduct business among themselves to facilitate the free flow of information within the Consortium. The required NDA will assist in this effort, but the terms and conditions of the Intellectual Property (IP) management agreements among partners will be left to the partners to negotiate (for more information see Section VIII.J). Save this document in a single PDF file named “AlgaeNDA.pdf” for Topic Area 1, and “AdvBiofuelsNDA.pdf” for Topic Area 2 and click on “Add Optional Other Attachment” to attach.

e) Memorandum of Understanding (MOU)

One MOU signed by all parties in the proposed Consortium (including any subrecipients) must be submitted with the application. DOE recommends using the example provided in Appendix E, without substantial changes. If the document requires amending before submission with the application, submit a red-lined version of the document with changes shown. DOE expects the partners to conduct business among themselves to facilitate the free flow of information within the Consortium. Similar to the NDA, the required MOU will assist in this effort, but the terms and conditions of the IP management agreements among partners will be left to the partners to negotiate (for more information see Part VIII.K). Save this document in a single PDF file named “AlgaeMOU.pdf” for Topic Area 1 and “AdvBiofuelsMOU.pdf” for Topic Area 2 and click on “Add Optional Other Attachment” to attach.

f) Budget File

SF 424 A Excel, Budget Information – Non-Construction Programs File

You must provide a separate budget for each year of support requested and a cumulative budget for the total project period. Use the SF 424 A Excel, “Budget Information – Non Construction Programs” form on the DOE Financial Assistance Forms Page at http://management.energy.gov/business_doe/business_forms.htm.

You may request funds under any of the Object Class Categories as long as the item and

amount are necessary to perform the proposed work, meet all the criteria for allowability under the applicable Federal cost principles, and are not prohibited by the funding restrictions in this announcement (see Section IV, G). Save the information in a single file named “SF424A.xls” and click on “Add Optional Other Attachment” to attach.

g) Budget Justification File

You must justify the costs proposed in each Object Class Category/Cost Classification category (e.g., identify key persons and personnel categories and the estimated costs for each person or category; provide a list of equipment and cost of each item; identify proposed subaward/consultant work and cost of each subaward/consultant; describe purpose of proposed travel, number of travelers and number of travel days; list general categories of supplies and amount for each category; and provide any other information you wish to support your budget). Provide the name of your cognizant/oversight agency, if you have one, and the name and phone number of the individual responsible for negotiating your indirect rates.

Save the budget justification information in a single file named “BudgetJustification.xls,” and click on “Add Optional Other Attachment” to attach.

See Appendix I for further discussion of an Excel budget justification format.

**h) American Recovery and Reinvestment Act of 2009, P.L. 111-5 (Recovery Act)
Additional Budget Justification Information**

Applications shall provide information which validates that all laborers and mechanics on projects funded directly by or assisted in whole or in part by and through funding appropriated by the Recovery act are paid wages at rates not less than those prevailing on projects of a similar character and in the same locality as determined by Subchapter IV of Chapter 31 of Title 40, United States Code (Davis-Bacon Act). For guidance on how to comply with this provision, see <http://www.dol.gov/esa/whd/contracts/dbra.htm>.

To satisfy this requirement, please provide a written assurance that you will comply with the Davis-Bacon Act, as identified above with the signature of the authorized representative of your organization. Save the information in a single file named “DavisBacon.pdf,” and click on “Add Optional Other Attachment” to attach.

i) Letters of Commitment

If cost share is required, you must have 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. Letters of Commitment from parties participating in the project, exclusive of vendors, who will not be contributing cost share but will be integral to the success of the project, must be included as part of the Appendix to the Narrative. Letters of Commitment will not count towards the Project Narrative page limit.

j) 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% of the total work effort (whichever is less). Use the SF 424 A Excel for Non Construction Programs. The form is found on the DOE Financial Assistance Forms Page at http://management.energy.gov/business_doe/business_forms.htm. Save each subawardee's budget in a separate file. Use up to 10 letters of the subawardee's name (plus 424.xls) as the file name (e.g., ucla424.xls or energyres424.xls). Click on "Add Optional Other Attachment" to attach each file.

A budget justification for the subaward is also required. The budget justification must include the same justification information described in Section IV.C.3.h above. Save each subawardee's budget justification in a separate file. Use up to 10 letters of the subawardee's name (plus budjust.xls) as a file name (e.g., uclabudjust.xls or energyresbudjust.xls). Click on "Add Optional Other Attachment" to attach.

First-Tier Subawardee American Recovery and Reinvestment Act of 2009, P.L. 111-5 (Recovery Act) Additional Budget Justification Information

First-Tier Subawardee Budget Justification shall provide information which validates that all laborers and mechanics on projects funded directly or assisted in whole or in part by and through funding appropriated by the Recovery Act are paid wages at rates not less than those prevailing on projects of a similar character and in the same locality as determined by Subchapter IV of Chapter 31 of Title 40, United States Code (Davis-Bacon Act). For guidance on how to comply with this provision, see <http://www.dol.gov/esa/whd/contracts/dbra.htm>.

To satisfy this requirement, first-tier subawardees should provide a written assurance that they will comply with the Davis-Bacon Act, as identified above, with the signature of the authorized representative of the organization. Save the information in a single file named "DavisBacon_[add sub name].pdf". Click on "Add Optional Other Attachment" to attach the file.

k) 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 in accordance with the requirements in DOE Order 412.1 Work Authorization System. The DOE Order 412.1, Work Authorization System and DOE O 412.1, Field Work Proposal form are available at the following link, under "DOE Budget Forms":

http://management.energy.gov/business_doe/business_forms.htm

Use up to 10 letters of the FFRDC name (plus.pdf) as the file name (e.g., lanl.pdf or anl.pdf), and click on "Add Optional Other Attachment" to attach.

l) Authorization for DOE FFRDCs

Save the Authorization for DOE FFRDCs, as specified in Section III.C. Other Eligibility Requirements, in a single file named "FFRDC_Auth.pdf" and click on "Add Optional Other Attachment" to attach.

m) Environmental Questionnaire

You must complete the environmental questionnaire at <https://www.eere-pmc.energy.gov/NEPA.asp>. The questionnaire attachment must not exceed 10 pages when printed on 8.5” by 11” paper with 1” margins (top, bottom, left, and right) with font not smaller than 11 point. Save the questionnaire in a single file named “Env.pdf” and click on “Add Attachments” in Field 11 to attach.

n) SF-LLL Disclosure of Lobbying Activities

If applicable, complete 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 this grant/cooperative agreement, you must complete and submit Standard Form – LLL, “Disclosure Form to Report Lobbying.” The form is available in the optional document box on the Adobe Application Package attached to this FOA.

Summary of Required Forms/Files

Your application must include the following documents:

Name of Document	Format	File Name
SF 424 - Application for Federal Assistance	Part of Adobe Application Package	
Project/Performance Site Location(s)	Part of Adobe Application Package	
Other Attachments Form: Attach the following files to this form:	Part of Adobe Application Package	See Instructions
Project Summary/Abstract File	PDF	Summary.pdf
Project Narrative File, including required appendices (Letters of Commitment)	PDF	Project.pdf
Resume File	PDF	Resumes.pdf
Non-Disclosure Agreement (NDA)	PDF	AlgaeNDA.pdf (for Topic Area 1); AdvBiofuelsNDA.pdf (for Topic Area 2)
Memorandum of Understanding (MOU)	PDF	AlgaeMOU.pdf (for Topic Area 1); AdvBiofuelsMOU.pdf (for Topic Area 2)
SF 424A Excel - Budget Information for Non-Construction Programs File	Excel	SF424A.xls

Budget Justification File	Excel	BudgetJustification.xls
Davis Bacon File	PDF	DavisBacon.pdf
Subaward Budget File(s), if applicable	Excel	See Instructions
Subaward Budget Justification(s), if applicable	Excel	See Instructions
First-Tier Subaward Davis Bacon File	PDF	DavisBacon_[add sub name].pdf
Budget for Federally Funded Research and Development Center (FFRDC) Contractor File, if applicable	PDF	See Instructions
Authorization from cognizant Contracting Officer for FFRDC, if applicable	PDF	FFRDC_Auth.pdf
Environmental Questionnaire	PDF	See Instructions
SF-LLL Disclosure of Lobbying Activities, if applicable	Part of Adobe Application Package	

D. Submissions from Successful Applicants

If selected for negotiation of an 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
- Environmental Questionnaire

Because Recovery Act funds apply to awards under this announcement, additional certification requirements will be required for state or local governments. See Special Provisions located at: http://management.energy.gov/business_doe/business_forms.htm.

E. Submission Dates and Times

1. Pre-application Due Date

- Pre-applications are not required

2. Application Due Date (September 14, 2009, 11:59 PM Eastern Time)

- Applications must be received by September 14, 2009, not later than 11:59 PM Eastern Time. You are encouraged to transmit your application well before the deadline. **APPLICATIONS RECEIVED AFTER THE DEADLINE WILL NOT BE REVIEWED OR CONSIDERED FOR AWARD.**

FedConnect questions should be directed by email to support@fedconnect.net or by phone to FedConnect Support at 1-800-899-6665.

F. Intergovernmental Review

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

Applicants should contact the appropriate State Single Point of Contact (SPOC) to find out about, and to comply with, the State’s process under Executive Order 12372. The names and addresses of the SPOC’s are listed on the Web site of the Office of Management and Budget at <http://www.whitehouse.gov/omb/grants/spoc.html>.

G. Funding Restrictions

Cost Principles. Costs must be allowable in accordance with the applicable Federal cost principles referenced in 10 CFR Part 600. The cost principles for commercial organization are in FAR Part 31.

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, 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

1. Where to Submit

APPLICATIONS MUST BE SUBMITTED THROUGH FEDCONNECT TO BE CONSIDERED FOR AWARD. Submit electronic applications through the FedConnect portal at www.FedConnect.net. Information regarding how to submit applications via Fed Connect can be found at https://www.fedconnect.net/FedConnect/PublicPages/FedConnect_Ready_Set_Go.pdf.

Organizations with system-to-system capabilities with Grants.gov may continue to use Grants.gov for submission. Applications submitted through Grants.gov will also be considered for award.

2. Registration Process Requirements

To submit an application in response to this FOA, applicants must be registered with FedConnect. Before you can register with FedConnect, you will need the following:

- a. Your organization’s Dun and Bradstreet Data Universal Numbering System (DUNS) (including plus 4 extension if applicable). To check whether your organization has a

- The technical viability of the proposed effort based on evidence of previous work, experimental results (including experimental data, if applicable), and/or the application of sound scientific principles to substantiate the proposed effort;
- The innovation of the proposed effort and the extent to which it offers advantages over current existing and emerging technologies and methodologies or products;
- The identification of the key technical risk areas and mitigation strategies to address them;
- The relevance and clarity of the goals and objectives of the project;
- The adequacy and reasonableness of the work breakdown structure, including task descriptions and schedule as they pertain to each partner within the Consortium;
- The clarity, reasonableness, and timing of the milestones, go/no go decision points and the decision point criteria;
- The clarity and adequacy of the project deliverables, including the specific anticipated end results, and production of a design report that includes a cost analysis and life cycle analysis;
- The adequacy of the communication plan to work effectively within the proposed Consortium to meet the project goals; and
- The strategic methods that will be utilized to maximize the exchange of information and materials within the Consortium and to maximize the existing capabilities (personnel, instruments, technologies, facilities, materials, location, etc.) of Consortium members.

Criterion 2: Energy, Environmental, and Economic Benefits Weight: [20%]

The application includes a credible economic discussion and a comprehensive discussion of environmental impacts, in particular, how the proposed technology or product results in substantially reducing greenhouse gas emissions over conventional fossil fuel technologies and products by at least 50% or more. The discussion convincingly presents and justifies the following:

- The proposed technology(ies) or product(s) substantially reduce(s) greenhouse gas emissions over conventional fossil fuels by 50% or more;
- Overall process energy efficiency is maximized; and
- The impact of the economic benefits as it pertains to the market potential for the proposed technology or product is clearly addressed.

For the algal biofuels Consortium:

- Fresh water consumption and/or evaporative losses are minimized;
- Impact on arable/agricultural lands is reduced; and
- Micronutrient consumption is minimized and/or process recycling mechanisms are implemented.

Criterion 3: Applicant and Participant Roles and Capabilities Weight: [30%]

The application demonstrates a proposed Consortium consisting of the necessary partners (expertise, facilities, commitment, freedom to operate in the necessary intellectual property arena) to successfully complete the proposed effort. The description of the proposed Consortium convincingly presents and justifies the following:

- The adequacy with which all portions of the technical objectives of the FOA are addressed by the proposed Consortium;
- The adequacy of the education, professional training, technical skills, and experience of the key personnel within the partnering organizations within the proposed Consortium;

- The extent to which the Consortium (applicant and project team) possess the necessary IP sufficient to conduct the proposed research and development;
- The level and reasonableness of the commitment of the key personnel within the Consortium;
- The degree of current experience and success in similar projects which lead to successful technology development and commercialization or technology transfer to commercial processes or product(s) by proposed Consortium partners;
- The adequacy of the facilities to be utilized within the Consortium; and
- The reasonableness of any request for modification of facilities or new equipment;

For the algal biofuels Consortium:

- The proposed Consortium, at a minimum, should have the expertise to address aspects of:
 - fundamental strain biology as it relates to cultivation (e.g. genetic manipulation, tolerance to biotic and abiotic agents, increasing biomass productivity, formation of desirable biofuel intermediates and co-products);
 - process engineering and modeling (mass/energy balances, pond/reactor design, LCA, process efficiency and economics);
 - algae processing (harvesting and intermediates extraction) and resource management (CO₂, micronutrients, land and water); and
 - biofuel production and quality assessment.

For the advanced biofuels Consortium:

- The proposed Consortium, at a minimum, should demonstrate the partners' knowledge, skills and ability to carry out modeling, testing and verification of:
 - basic physical, chemical or biochemical reactions occurring through the process;
 - reactor design;
 - catalysts or biocatalysts to deconstruct the biomass (in-situ and downstream of the reactor);
 - catalysts or biocatalysts to upgrade the quality of the reactor outputs (e.g. syngas, bio-oils);
 - catalysts or biocatalysts to synthesize fuel either from the 'outputs' or directly from the biomass; and
 - biofuel production, quality assessment and preliminary end-use characteristics (yield, lubricity, combustion, compatibility with materials used in current infrastructure, current engines and advance combustion engines).

Criterion 4: Industrial Involvement and Commercialization Weight: [20%]

The application presents the commercialization potential of the proposed technology or product by presenting and justifying the following:

- The commercialization strategy or plan for the proposed technology or product and the adequacy of the intellectual property rights and/or institutional alliances to execute the commercialization strategy;
- The viability and practicality of the proposed technology or product to meet the needs of the target market in a cost effective manner without major market or infrastructure restructuring considering potential technical, regulatory, economic, environmental, production, or other issues impacting success;

- The strength of the ownership claims as asserted in Appendix F;
- The ability and willingness to license and market the resulting technology to the public; and
- The inclusion and adequacy of the NDA and MOU signed by all Members of the Consortium.

3. Other Selection Factors

The selection official may consider the following program policy factors in the selection process:

- Diversity of proposing Consortium and technologies;
- Significant cost/benefit advantages;
- Cost share offered above the minimum amount required;
- Selection of Applications which promote and enhance the objectives of the American Recovery and Reinvestment Act of 2009, P.L. 111-5, especially job creation, and/or preservation and economic recovery in an expeditious manner.

B. Review and Selection Process

1. 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 at: <http://www.management.energy.gov/documents/meritrev.pdf>.

2. Selection

Selection Official Consideration

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

3. Discussions and Award

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 negotiation of an 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 satisfactorily resolve 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 by the end of November 2009 and making awards by the end of January 2010.

SECTION VI - AWARD ADMINISTRATION INFORMATION

A. Award Notices

1. 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.)

Non-selected Notification

Organizations whose applications have not been selected will be advised as promptly as possible. This notice will explain why the application was not selected.

2. 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) Budget Summary; and (7) Federal Assistance Reporting Checklist, which identifies the reporting requirements; (8) Intellectual Property provisions; and (9) Statement of Project Objectives.

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 and National Policy Requirements

1. Administrative Requirements

The administrative requirements for DOE grants and cooperative agreements are contained in 10 CFR part 600 (See: <http://ecfr.gpoaccess.gov>). Grants and cooperative agreements made to universities, non-profits and other entities subject to OMB Circular A-110 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>.

2. American Recovery and Reinvestment Act of 2009 Award Administration Information

Special Provisions relating to work funded under American Recovery and Reinvestment Act of 2009, Pub. L. 111-5 shall apply. (Special Provisions are located at: http://management.energy.gov/business_doe/business_forms.htm.) Also, the Office of Management and Budget may be promulgating additional provisions or modifying existing

provisions. Those additions and modifications will be incorporated into the Special Provisions as they become available.

3. Special Terms and Conditions and National Policy Requirements

The DOE Special Terms and Conditions for Use in Most Grants and Cooperative Agreements are located at

http://management.energy.gov/business_doe/business_forms.htm

<http://www.management.energy.gov/documents/specialtermsandcondition308.pdf>.

The National Policy Assurances To Be Incorporated As Award Terms are located at

http://management.energy.gov/business_doe/business_forms.htm

http://management.energy.gov/business_doe/1374.htm.

4. Intellectual Property Provisions

The standard DOE financial assistance intellectual property provisions applicable to the various types of recipients are located at

http://www.gc.doe.gov/financial_assistance_awards.htm.

5. Statement of Substantial Involvement

DOE, in providing project management oversight of the Consortia, will be substantially involved in the project by participating in the following, but not limited to: review and approval of projects planned by the Consortia to reach programmatic goals, review of Consortia progress based on metrics, and participation in Stage Gate Reviews (go/no go decision points) and peer reviews – either or which may lead to redirecting efforts - as the Consortia work toward focusing on specific technological pathways leading to the efficient, economical, and sustainable production of algal and advanced biofuels and the reduction of green house gases. If the Consortia include DOE FFRDCs, DOE will be substantially involved to ensure the efficient and facile interaction between the Consortia and the lab(s).

C. Reporting

Reporting requirements are identified on the Federal Assistance Reporting Checklist, DOE F 4600.2, attached to the award agreement. For a sample Checklist, see

<http://management.energy.gov/documents/DOEF46002PolicyVersion.pdf>.

Awards under this FOA will be funded, in whole or in part, with funds appropriated by the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, (Recovery Act or Act). Be advised that Recovery Act reporting requirements may apply to projects funded by the Act. The reporting requirements will be specified in the DOE F 4600.2 or other related Recovery Act guidance as they become available.

SECTION VII - QUESTIONS/AGENCY CONTACTS

A. Questions

Questions regarding the content of the announcement must be submitted through the FedConnect portal. You must register with FedConnect to respond as an interested party to submit questions, and to review responses to questions. It is recommended that you register as soon after release of the FOA as possible to have the benefit of all responses. More information is available at <http://www.compusearch.com/products/fedconnect/fedconnect/asp>. DOE will try to respond to a question within 3 business days, unless a similar question and answer have already been posted on the website.

Questions pertaining to the **submission** of applications through FedConnect should be directed by e-mail to support@FedConnect.net or by phone to FedConnect Support at 1-800-899-6665.

SECTION VIII - OTHER INFORMATION

A. Modifications

Notices of any modifications to this announcement will be distributed through the FedConnect portal. You can receive an email when a modification or an announcement message is posted by registering with FedConnect as an interested party for this FOA. It is recommended that you register as soon after the release of the FOA as possible to ensure you receive timely notice of any modifications or other announcements. More information is available at <http://www.fedconnect.net> and <http://www.compusearch.com/products/fedconnect/fedconnect.asp>.

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

Patentable ideas, trade secrets, proprietary or confidential commercial or financial information, disclosure of which may harm the applicant, should be included in an application only when such information is necessary to convey an understanding of the proposed project. The use and disclosure of such data may be restricted, provided the applicant includes the following legend on the first page of the project narrative and specifies the pages of the application which are to be restricted:

“The data contained in pages _____ of this application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this applicant receives an award as a result of or in

connection with the submission of this application, DOE shall have the right to use or disclose the data herein to the extent provided in the award. This restriction does not limit the government's right to use or disclose data obtained without restriction from any source, including the applicant.”

To protect such data, each line or paragraph on the pages containing such data must be specifically identified and marked with a legend similar to the following:

“The following contains proprietary information that (name of applicant) requests not be released to persons outside the Government, except for purposes of review and evaluation.”

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 Part VIII.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 5 years from the development of the information, of 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), would 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 will also identify data that will be recognized by the parties as protected data. For National Laboratories and FFRDCs, the data rights clause in the Applicant's Management and Operating (M&O) Contract will apply.

G. Notice of Right to Request Patent Waiver

DOE intends to issue a class waiver for each Consortium awarded under this FOA, which DOE expects will cover most, if not all, team Members which are not domestic small businesses or domestic non-profit organizations. If a class waiver is not issued or a Consortium Member does not qualify for the class waiver, a Consortium Member 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 Consortium Members 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. Additionally, DOE's patent waivers will include a U.S. competitive provision reflecting DOE's programmatic objectives; e.g., improving the competitive position as well as the U.S. employment opportunities in U.S. industries.

Domestic small business 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 businesses 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. Algal/Advanced Biofuel Consortium Intellectual Property (IP) Management and Information Sharing

The Consortium must develop and sign an Intellectual Property (IP) Management Plan using the MOU as a guideline. The IP Management Plan should describe handling of IP, including cross-licensing of IP, licensing of background IP, handling of joint inventions, plans for information sharing with the public, how algal strains will be made available to researchers, and how IP will be licensed to the general research community. One IP Management Plan signed by all parties in the proposed Consortium (including any sub-recipients) must be submitted by the Consortium Lead no later than 30 days after notification of selection for negotiation of an award. DOE

expects the Members to conduct business among themselves to facilitate the free flow of information within the Consortium. Unlike the NDA and MOU, DOE has not provided a specific example of an IP management plan, but expects the Consortium to use the principles set forth in the MOU as a guideline for drafting the IP management plan. Instructions on how the NDA and MOU should be submitted with the application are described in Section IV.C.3.

REFERENCE MATERIAL

Appendix A – Definitions

“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 CCR.

"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.

“Central Contractor Registration (CCR)” is the primary database which collects, validates, stores and disseminates data in support of agency missions. Funding Opportunity Announcements which require application submission through FedConnect or Grants.gov require that the organization first be registered in the CCR at <http://www.grants.gov/CCRRegister>.

"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.

"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.

“Credential Provider” is an organization that validates the electronic identity of an individual through electronic credentials, PINS, and passwords for Grants.gov. Funding Opportunity Announcements which require application submission through Grants.gov require that the individual applying on behalf of an organization first be registered with the Credential Provider at <https://apply.grants.gov/OrcRegister>.

“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 CCR. Call 1-866-705-5711 to receive one free of charge. http://www.grants.gov/applicants/request_duns_number.jsp

“E-Business Point of Contact (POC)” is the individual who is designated as the Electronic Business Point of Contact in the CCR registration. This person is the sole authority of the organization with the capability of designating or revoking an individual’s ability to conduct CCR 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>

“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 post opportunities and make awards via the web. Any Applicant can view public postings without registering. However, registered users have numerous added benefits including the ability to electronically submit Applications / Responses to the government directly through this site. <https://www.fedconnect.net/FedConnect/>

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

“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.

“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” is a feedstock that is domestically available and has the agronomically and ecologically sustainable ultimate availability potential of at least 100 million dry metric tonnes of biomass per year.

“Industry Interactive Procurement System (IIPS)” is DOE’s Internet-based procurement system which allows access to DOE’s business opportunities database, allows user registration and submittal of Applications: <http://e-center.doe.gov/>.

“Indian Tribe” means any Indian tribe, band, nation, or other organized group or community, including Alaska Native village or regional or village corporation, as defined in or established pursuant to the Alaska Native Claims Settlement Act (85 Stat. 688)[43 U.S.C. § 1601 et seq.], which are recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.

"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 CCR. The E-Business Point of Contact will need the MPIN to assign privileges to the individual(s) authorized to perform CCR 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).

"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.

“Process Development Unit (PDU)” is a small scale (> 20 kg/hr feed rate) process capable of being operated in a completely integrated fashion beginning with feedstock introduction through final product collection and measurement. Final product purification to market specification is not required. The design and operation needs to be sufficiently adequate to enable accurate mass and energy balance data to be obtained.

"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 in IIPS meaning 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.

"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.

"Technology Investment Agreement (TIA)" is a type of assistance instrument used to support or stimulate research projects involving for-profit firms, especially commercial firms that do business primarily in the commercial marketplace. TIAs are different from grants and cooperative agreements in that the award terms may vary from the Government-wide standard terms (See DOE TIA regulations at 10 CFR Part 603). The primary purposes for including a TIA in the type of available award instruments are to encourage non-traditional Government contractors to participate in an R&D program and to facilitate new relationships and business practices. A TIA can be particularly useful for awards to Consortia (See 10 CFR 603.225(b) and 603.515, Qualification of a Consortium).

"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.

"Tribal Energy Resource Development Organization or Group" means an "organization" of two or more entities, at least one of which is an Indian Tribe (see "Indian Tribe" above) that has the written consent of the governing bodies of all Indian Tribes participating in the organization to apply for a grant or loan, or other assistance under 25 U.S.C. § 3503.

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%

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 CFR600.123;
- State and Local Governments are found at 10 CFR600.224;
- For-profit Organizations are found at 10 CFR600.313.

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 three years would not be fully allowable as cost share. Only the value for the three 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 Regulations:

<http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=98a996164312e8dcf0df9c22912852b0&rgn=div5&view=text&node=10:4.0.1.3.9&idno=10>

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.

(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 OMB Circular No. A-21 -- Cost Principles for Educational Institutions.

(ii) *Other nonprofit organizations.* Allowability is determined in accordance with OMB Circular A-122, Cost Principles for Non-Profit Organizations.

(iii) *Hospitals.* Allowability is determined in accordance with the provisions of 45 CFR Part 74, Appendix E, 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 OMB Circular No. A-87, Cost Principles for State, Local, and Indian Tribal Governments.

(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.

Appendix D – Example Non-Disclosure Agreement (NDA)

Development of Algal/Advanced Biofuels Consortia

To protect certain Protected Data and Proprietary Information,

INSERT NAMES OF MEMBERS HERE

all of the above hereinafter referred to individually as “Member” or collectively as “Members” hereby agree:

1. Disclosing Member/Receiving Member: Proprietary Information and Protected Data may be mutually shared by the Members, which may include subcontractors to the Members.
2. “Employee” includes professors, principal investigators, visiting scholars, trainees, postdoctoral appointees, graduate students, undergraduate student assistants, support services contractors, and staff employees.
3. “Award” means the Consortium’s agreement with the U.S. Department of Energy for this Algal/Advanced Biofuels Consortium entitled [INSERT NAME OF AWARD HERE].
4. "Proprietary Information" means Limited Rights Data and Restricted Computer Software, which are defined in the award to the Consortium as follows: Limited Rights Data means data (other than computer software) developed at private expense that embody trade secrets or are commercial or financial and confidential or privileged. Restricted Computer Software means computer software developed at private expense and that is a trade secret; is commercial or financial and confidential or privileged; or is published copyrighted computer software; including modifications of such computer software.
5. “Protected Data” is defined in the award to the Consortium as technical data or commercial or financial data first produced in the performance of the award which, if it had been obtained from and first produced by a non-federal Member, would be a trade secret or commercial or financial information that is privileged or confidential under the meaning of 5 U.S.C. 552(b)(4) and which data is marked as being protected data by a Member to the award.
6. Protected Data and Proprietary Information disclosed hereunder, may not be used by any Member other than the Disclosing Member for any purpose other than as stated herein.
7. Receiving Member shall protect only Disclosing Member's Protected Data and Proprietary Information, which is either:
 - a. disclosed in writing or other tangible form and plainly marked as the Disclosing Member's Protected Data or Proprietary Information.
 - b. disclosed in another manner and identified as business sensitive or proprietary at the time of disclosure, and summarized and designated business sensitive or proprietary in a written memorandum delivered to Receiving Member within thirty (30) days of the disclosure; in which case the information contained in the summary (not information contained solely in the non-tangible disclosure) shall be subject to the restrictions herein.
8. Receiving Member shall:
 - a. protect the Disclosing Member's Protected Data and Proprietary Information by using the same degree of care, but no less than a reasonable degree of care, as Receiving Member uses to protect

- its own Protected Data and Proprietary Information of a like nature.
 - b. not disclose the Disclosing Member's Protected Data or Proprietary Information to any third Member without the written consent of the Disclosing Member.
 - c. restrict disclosure of the Disclosing Member's Protected Data and Proprietary Information to employees or contractors who have a need to know the same and who have been advised of Receiving Member's obligations under this Agreement.
 - d. not remove the restrictive markings from any of the Disclosing Member's Protected Data or Proprietary Information.
9. The Members acknowledge that U.S. Government employees have the right to inspect all written Protected Data and Proprietary Information provided to any Management & Operating Contractor for a National Laboratory or Federally Funded Research and Development Center upon reasonable notice and that such information shall be protected against further disclosure by U.S. Government employees under 18 USC 1905.
10. The obligations of nonuse and nondisclosure set forth in this Agreement shall not apply to any information which:
- a. is or becomes part of the public domain otherwise than as a consequence of breach of obligations under this Agreement;
 - b. was already known to the Receiving Member prior to receipt from the Disclosing Member;
 - c. is lawfully disclosed by the Disclosing Member to a third party without restriction;
 - d. is disclosed by a third party to the Receiving Member without restriction and otherwise than as a consequence of breach of obligations of a nondisclosure Agreement; or
 - e. is at any time developed by Receiving Member independently without the use of Disclosing Member Protected Data or Proprietary Information.
11. No license to a Member, under any patent, trademark, copyright, mask work or any other intellectual property right, is either granted or implied by the conveying of Protected Data or Proprietary Information to such Member. None of the Protected Data or Proprietary Information which may be disclosed or exchanged by the Members shall constitute any representation, warranty, assurance, guarantee or inducement by a Member to any other Member of any kind, and, in particular, with respect to the non-infringement of patents or any other intellectual property rights, or other rights of third persons or of the Members hereto.
12. Neither this Agreement nor the disclosure or receipt of Protected Data or Proprietary Information shall constitute or imply any promise or intention to make any purchase of products or services by any Member, or any commitment by any Member with respect to the present or future marketing of any product or service.
13. Upon termination or expiration of this Agreement as to any Member, such Member will, within a reasonable period of time thereafter and upon receipt of a written request to do so by the Disclosing Member, return to such Disclosing Member all Protected Data and Proprietary Information received from that Disclosing Member under this Agreement and copies made thereof, or certify by written memorandum that all such Protected Data and Proprietary Information has been destroyed; provided, however, that the terminating Member may retain an archival copy to be used only in case of a dispute concerning this Agreement.
14. The Receiving Members hereunder acknowledge that they will not export or disclose to any non-resident foreign person or entity, any technical data without first complying with U.S. Government export control laws and regulations such as the International Traffic Arms Regulations and the Export Administration Regulations, including requirements for obtaining export licenses, regardless of

whether the transfer occurs within the United States or abroad. Each Receiving Member further agrees that it will not export, directly or indirectly, any Protected Data or Proprietary Information it receives under this Agreement without the written consent of the Disclosing Member.

15. This Agreement shall be in full force and effect for as long as the Consortium exists. Each Member may terminate this Agreement by giving thirty (30) days' prior written notice to the other Members. However, the obligations undertaken by a Receiving Member with respect to specific items of Proprietary Information received hereunder shall survive until the passage of five (5) years after the date of disclosure regardless of the expiration of the Agreement or the exercise of the right to terminate upon thirty-days' written notice by a Member hereto.
16. The obligations undertaken by a Receiving Member with respect to specific items of Protected Data received hereunder shall survive until the passage of five (5) years after the date of disclosure, or the date upon which the data are no longer protected under the Award, whichever comes sooner, regardless of the expiration of the Agreement or the exercise of the right to terminate upon thirty-days' written notice by a Member hereto.
17. Addition of new Members: When a new Member is proposed to be added to the Consortium and this Agreement, the Consortium Lead shall transmit an abstract via fax or electronic mail regarding the new Member to all current Members to the Agreement for a comment and consent period not to exceed 30 days from the date the abstract is transmitted. The Consortium Lead shall collate and disseminate to all Members all comments regarding the addition. All Members shall make a good-faith effort to resolve any issues regarding the addition, and shall not unreasonably withhold their consent to the addition. If the Members are unable to reach unanimous consent, The Consortium Lead shall send the abstract together with all comments regarding the proposed addition to the cognizant DOE program official, who will make a final decision regarding the proposed new Member's addition. Upon unanimous consent of the Members or final decision by DOE, the Consortium Lead shall provide the Agreement for the new Member's signature. Members will not be required to re-circulate the Agreement for signing by all Members when a new Member is added. Upon addition of a new Member, the Consortium Lead shall send a courtesy copy to all Members of the Agreement reflecting the addition.
18. This Agreement will be binding on Members, and their professors, principal investigators, visiting scholars, trainees, postdoctoral appointees, graduate students, undergraduate student assistants, support services contractors, subcontractors, and staff employees.
19. All notices and/or correspondence hereunder, shall be mailed, faxed or hand-delivered and addressed to:

INSERT MEMBERS' CONTACT INFO HERE
20. This Agreement shall be construed in accordance with the laws of the United States of America.
21. The Members acknowledge that, with respect to National Laboratory and Federally Funded Research and Development Centers Management & Operating Contractors, this Agreement and all information received hereunder by said Members, may be transferred to their respective successor contractors if the Management & Operating Contracts are terminated.
22. This Agreement contains the entire understanding of the Members regarding the treatment of Protected Data and Proprietary Information. Any previous agreements or understanding regarding the Protected Data and Proprietary Information, whether written or oral, are superseded. The waiver, amendment or modification of this Agreement will not be effective unless in writing signed by authorized representatives of all of the Members. Amendments and modifications as discussed in this

Paragraph do not include the addition of new Members, which will be conducted pursuant to Paragraph 19.

23. Reproduction of this agreement, with all signatures affixed, shall be deemed a duplicate executed original of this agreement.

IN WITNESS WHEREOF, the authorized representatives of the Members have executed this Agreement as set forth below.

INSERT SIGNATURE BLOCKS HERE

Appendix E – Example Memorandum of Understanding (MOU)

MEMORANDUM OF UNDERSTANDING

For Implementation of a Standardized Approach to Intellectual Property and Proprietary Data in the
Recovery Act Funding for Development of Algal / Advanced Biofuels Consortia

By and Among

The U.S. Department of Energy
Office of the Biomass Program

and

INSERT CONSORTIUM MEMBERS NAMES HERE

hereinafter referred to collectively as “the Members”

ARTICLE I. BACKGROUND

The Department of Energy (DOE) is providing federal assistance under the Biomass Program to research, develop, and demonstrate biofuels production for transportation and stationary applications. Under the Program, three Consortia (Consortium or Consortia), two for algal-based systems and one for advanced cellulosic biofuels will be created and composed of multiple team Members. The Consortium lead organization (Consortium Lead) will operate under a cooperative agreement with DOE, and the other Members will operate under subagreements with the Consortium Lead. The Consortium Lead is expected to coordinate the various development activities undertaken by its Members. This MOU covers the Recovery Act Funding for Development of Algal/Advanced Biofuels Consortium.

ARTICLE II. PURPOSE

- A. The purpose of this MOU is to further the goals establishing the Consortium by promoting a consistent, uniform approach to the disposition of intellectual property (IP) rights and the handling of proprietary and protected data across all Members of the Consortium to accelerate research via an open exchange of information; and to provide a framework upon which the Consortium will draft and execute an IP management plan. This MOU sets forth a voluntary agreement by the undersigned Members to follow a set of operating principles and guidelines, and to adhere to the corresponding Consortium nondisclosure agreement (NDA). The Members are expected to have flexibility in the application of the principles and guidelines. Compliance with this MOU will be considered as part of the periodic appraisal of the Consortium by the Office of the Biomass Program. Nothing in this MOU shall contravene the terms and conditions of the agreements each Member has with DOE or any legally binding agreements the Members may make among themselves.

- B. This MOU does not provide legal authority establishing an authorized agreement format. Such authority is found elsewhere. For example, the CRADA authority, DOE Order 483.1, and the Work for Others (WFO) authority, DOE Order 481.1, both provide legally authorized agreement formats.

In consideration of the foregoing, the Members hereby agree to the operating principles and guidelines as set forth in Article III below:

ARTICLE III. OPERATING PRINCIPLES AND GUIDELINES

- A. Management of the Consortium. DOE expects the Consortium Lead to facilitate communications among the Members and to optimize opportunities to take full advantage of synergies among the Members to effectuate DOE's programmatic goals for the Consortium. The Consortium Lead will facilitate achievement of these goals by organizing regular face-to-face meetings and teleconferences when necessary; and by seeking consensus among Members regarding operation of the Consortium, including the free flow of information among Members and the management of intellectual property that arises under the Consortium.
- B. Intellectual Property
 1. Disclosure of Subject Inventions. Members are encouraged to disclose to other Members Subject Inventions, as defined in their respective agreements with DOE, within 30 days of reporting the Subject Inventions to DOE as required under their respective agreements. Members may disclose the Subject Inventions by either providing copies to all other Members, or by providing them to the Consortium Lead for distribution to all Members in a manner agreed upon by the Members (e.g., posting to a secure website accessible by all Members). Such disclosures will be subject to the NDA if the discloser properly marks the Subject Invention disclosure.
 2. Intellectual Property Management. Two or more Members may decide to enter into intellectual property (IP) management agreements to address issues such as joint inventions, cross-licensing of inventions developed under the Consortium, licensing of background IP, sharing of patenting costs, or other IP-management issues. For example, the Members may decide to have one Member be responsible for the licensing of all inventions arising from the Consortium. In addition, DOE encourages Members to license to each other for reasonable royalties the technologies developed under their Consortium awards that are specifically used to meet Consortium program objectives, so that the work performed by the Consortium is not compromised when Members leave the Consortium before the Consortium program has ended. The Consortium Lead and DOE are available to facilitate Members entering into such agreements. Any Member may request assistance from the Consortium Lead or DOE, through the cognizant DOE program official, who will consult with the DOE Field Patent Counsel, on putting in place an IP management agreement.
 3. Sole Inventions. Inventions solely owned by one Member will be managed by that Member unless that Member chooses to designate another Member to manage the ownership instead. A Member may decide, for instance to allow another Member to manage one or more of its inventions if the other Member is already managing closely-related inventions. In such cases, the Members involved will be expected to execute an intellectual property (IP) management agreement.
 4. Joint Inventions. Due to the collaborative nature of the Consortium, two or more Members may jointly create a Subject Invention. In these cases, the affected Members are expected to enter

into an IP management agreement to set forth ownership of the inventions and facilitate the filing of patent applications and licensing.

5. Algal strain availability. Members are expected to make available to the research community unmodified algal strains with desirable properties that are identified in the course of the Consortium's work, via bailments, material transfer agreements, or similar arrangements.

6. Licensing to the research community. Members are expected to license IP developed by the Consortium to the research community so that new technology will be disseminated widely and may advance the state of the art in an efficient manner. The Consortium must set forth its research community licensing strategy in the IP management plan (e.g., in what circumstances licenses will be royalty-free versus royalty-bearing, how technology will be available to the broadest array of researchers practicable).

- C. Amendments to MOU. If any Member desires a modification to this MOU, the Members are expected to confer in good faith to determine the desirability of the modification. The modification will not be effective until a written amendment is signed by all the Members. Modifications, as discussed in this Paragraph do not include the addition of new Members, which will be conducted pursuant to Article IV, Paragraph D.
- D. Changes in Consortium Membership. To ensure a smooth transition when new Members are added to the Consortium, the Consortium Lead will provide a copy of this MOU and the NDA for review and signature by the new Member. After receipt of the new Member's signature on the MOU, the Consortium Lead will circulate the signed document to all Members for their records. Addition of new Members to the NDA is set forth in the NDA and is discussed in Article IV of this MOU. If a Member leaves the Consortium, those provisions of the NDA and any IP management agreement that, by their nature, are intended to survive the termination, will survive.
- E. Information Sharing.
1. Proprietary Nature of Disclosures. The Members recognize that some material disclosed during the operation of the Consortium will be proprietary to the disclosing party. Therefore, all Members are expected to sign the Nondisclosure Agreement (NDA), attached to the Funding Opportunity Announcement as Appendix D, and to abide by the marking and confidentiality requirements therein.
 2. Members are expected to share research findings with the public using a variety of methods, such as annual meetings, professional conferences, and publications.
 3. Members must cooperate with persons designated by DOE to review the Consortium's progress toward meeting DOE's technical goals, and to share information with the reviewers that is needed to evaluate the Consortium's progress (under nondisclosure agreements, where appropriate).
- F. Education and Outreach. Members are encouraged to engage in educational and outreach activities pertaining to the Consortium's work, and to provide information to the public regarding the Consortium's activities in furtherance of these activities.

ARTICLE IV. NONDISCLOSURE AGREEMENT

- A. Purpose. The Consortium should operate in an environment that fosters a free exchange of ideas to the benefit of all Members and DOE. The Members realize that some of those ideas will involve proprietary information, and must be kept within the Consortium. To foster information exchange, the Members are expected to agree to the corresponding Consortium NDA. All

Members are expected to sign the NDA before receiving or disclosing proprietary information to other Members.

- C. Government Personnel, Support Service Contractors, and Others Acting in a Government Capacity. Government personnel will not be required to sign the NDA because they are subject to 18 U.S.C. 1905 (The Trade Secrets Act). It is the Government's responsibility to ensure that those personnel acting on the Government's behalf are contractually obligated to not disclose proprietary information.
- D. New Members. New Members will be expected to sign the NDA when they join the Consortium. Requiring every existing Member to re-sign the NDA every time a new Member is added to the Consortium is cumbersome. Therefore, the Consortium Lead will facilitate the addition of new Members as follows: When a new party is proposed to be added to the NDA, the Consortium Lead will transmit an abstract via fax or electronic mail regarding the new party to all current Members for a comment and consent period not to exceed 30 days from the date the abstract is transmitted. The Consortium Lead will collate and disseminate to all Members all comments regarding the addition. All Members will make a good-faith effort to resolve any issues regarding the addition, and will not unreasonably withhold their consent to the addition. If the Members are unable to reach unanimous consent, the Consortium Lead will send the abstract together with all comments regarding the proposed addition to the cognizant DOE program official, who will make a final decision regarding the proposed new party's addition. Upon unanimous consent of the Members or final decision by DOE, the Consortium Lead will provide the NDA for the new party's signature, after which the Consortium Lead will send an amended NDA reflecting the addition to all Members, and the amended NDA will be binding on all the Members.
- E. Flowdown. The NDA will be binding on Members, and their professors, principal investigators, visiting scholars, trainees, postdoctoral appointees, graduate students, undergraduate student assistants, support services contractors, subcontractors, and staff employees. It is expected that each Member will inform these personnel regarding their legal obligations to not disclose proprietary information.

WHEREFORE, let it be known by all present and all who shall read this document that on this ____ day of _____, 2009, the Department of Energy and the Members do signify, with the signing of this MOU, their commitment to adhere to the nondisclosure agreement attached hereto according to the operating principles and guidelines set forth herein.

ON BEHALF OF THE DEPARTMENT OF ENERGY:

I, _____, [TITLE] of the Office of Biomass Program, do hereby authorize the Members to use the attached nondisclosure agreement and to act according to the operating principles and guidelines set forth herein.

ON BEHALF OF THE PARTIES:

We, the undersigned, as representatives of the Members, do hereby agree to use the attached agreements according to the operating principles set forth herein.

Appendix F – Applicant’s Representation of Its Rights to Pursue the Proposed Technological Pathway(s) as Evidenced by Secured Intellectual Property

Please describe your rights to use the proposed technological pathway(s) as described in your project narrative:

- Do you (the Consortium Lead and/or a Consortium Technical Member) own all the intellectual property necessary to accomplish your tasks? If not, have you secured all the necessary license rights?
- If the intellectual property is licensed from another party, please provide a non-proprietary description of the terms and conditions of the license(s) including whether the license is for commercial purposes or research only, license duration, field of use, and exclusivity. Please DO NOT attach copies of the license(s).

Appendix G – Supplemental Information

Advanced Infrastructure Compatible Biofuels

Consortium Details: It is the intention of this Topic Area to leverage the capabilities of a number of organizations to exploit the unique capabilities such organizations can bring to a collective research effort such as this. Those capabilities are anticipated to be both human and physical, bringing together many years of accumulated hardware and knowledge base that can be synergistically brought to bear on creating a technology capable of starting with biomass and ending up with advanced infrastructure compatible biofuels. Essentially biofuels that are “drop in” substitutes for today’s petroleum derived hydrocarbons.

The narrative should describe in detail the unique capabilities of each organization being proposed as part of the Consortium and how those capabilities will synergistically be used to accelerate the development of a new technical pathway for production of hydrocarbon fuels from biomass. It is recognized that a collection of research organizations brings both cultural diversity as well as technical diversity to the common goal of the Consortium. With this Consortium approach to advancing a technical solution, it is important to effectively manage the different cultures and capabilities each organization brings to the common effort. The narrative must include a comprehensive plan that describes how communication, coordination of effort, distribution of resources, and sharing of intellectual property will be implemented between the various member organizations. Because of the desire to accelerate the development of this technology the Consortium needs to be ready to function as a single entity from the very start of the project effort. This coordination plan needs to convincingly show that will be the case from the very outset of the project. A path to commercialization of the selected technical approach also needs to be part of the narrative discussion. Please include any technical, market, and policy issues that would have a bearing on the ability to accelerate the proposed technology to commercialization.

Technology Description: In general terms the objective of the Topic Area is to have a Consortium aggressively develop a technology capable of starting with cellulosic biomass feedstocks and cost effectively converting them into hydrocarbon type fuels. It is also desirable to have a technology that is “feedstock ambiguous”, i.e. able to process a wide variety of biomass types without requiring significant changes to process operability. The technical approach of doing this conversion is left entirely up to the applicant. It is envisioned that a number of approaches are potentially capable of achieving this goal based on chemical, thermochemical, bioconversion or a combination or hybrid of these. The applicant must discuss their proposed technology in the context of cost (compared to petroleum derived fuels), properties of product biofuel (compatibility with current petroleum based fuels), sustainability, and greenhouse gas footprint. Include in the discussion especially challenging technical hurdles that must be overcome and the way the Consortium is addressing these challenges. Explain why the approach being proposed is better than others that may have been considered and include a discussion on the probability of successfully achieving the stated goals.

Appendix H – Statement of Project Objectives (SOPO) Format

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]

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

Task 3.0 [Insert Title]

[Insert Description]

Task X.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 I – Budget Justification Guidance

Using the “Object Class Categories” in the SF-424A, justify the costs in each category for each budget period of the project. A budget justification is required for the applicant. A separate SF 424A and budget justification is required for each subawardee/sub-recipient having a budget over \$100,000. All charges, Federal and cost share, must be justified. The totals in each category and also the Total Project Cost should match between the budget justification and SF 424A budget. A spreadsheet or other tabular format is recommended.

Personnel

List costs solely for employees of the entity completing this form (award recipient or sub-recipient). All other personnel costs (of sub-recipients or other contractual efforts of the entity preparing this) must be included under “Contractual.” This includes all consultants and FFRDCs.

Identify positions to be supported. Key personnel should be identified by title. All other personnel should be identified either by title or a group category. State the amounts of time (e.g., hours or % of time) to be expended, the composite base pay rate, total direct personnel compensation and identify the rate basis (e.g., actual salary, labor distribution report, technical estimate, state civil service rates, etc.). Identify the number of employees (on a Full Time Equivalent) that will be employed in each position or group category.

Note the prevailing wage requirements in the ARRA (P.L. 111-5).

Task # and Title	Position Title	Budget Period 1			Budget Period 2			Budget Period 3			Project Total Hours	Project Total Dollars	Rate Basis
		Time (Hours)	Pay Rate (\$/Hr)	Total Budget Period 1	Time (Hours)	Pay Rate (\$/Hr)	Total Budget Period 2	Time (Hours)	Pay Rate (\$/Hr)	Total Budget Period 3			
1. Generation 2A Reactor Design		10000		\$423,000	600		\$24,000	800		\$31,000	11400	\$478,000	Actual Salary
	Sr. Engineer (1)	2000	\$85.00	\$170,000	200	\$50.00	\$10,000	200	\$50.00	\$10,000	2400	\$190,000	Actual Salary
	Process engineers (3)	6200	\$35.00	\$217,000	400	\$35.00	\$14,000	600	\$35.00	\$21,000	7200	\$252,000	Actual Salary
	Technician (1)	1800	\$20.00	\$36,000	0	\$0.00	\$0	0	\$0.00	\$0	1800	\$36,000	Actual Salary

Fringe

A federally approved fringe benefit rate agreement, or a proposed rate supported and agreed upon by DOE for estimating purposes is required if reimbursement for fringe benefits is requested. If a fringe benefit rate has been negotiated with, or approved by, a federal government agency, a copy of the latest rate agreement must be included with this application, and if selected, must be provided electronically to the Contracting Officer for this project. Please state if the rate agreement has already been provided to the Contracting Officer, OR if it has changed since it was. If there is not a current, federally approved rate agreement negotiated and available, provide a copy of the proposal with the application. If selected, the rate agreement will be finalized during award negotiations. Calculate the fringe rate and enter the total amount in Section B, line 6.b. (“Fringe Benefits”) of form SF-424A.

	Budget Period 1	Budget Period 2	Budget Period 3	Total
Rate applied:	0.0%	0.0%	0.0%	
Total fringe requested:	\$0	\$0	\$0	\$0

Travel

Provide travel detail as requested below, identifying total Foreign and Domestic Travel as separate items. Purpose of travel are items such as professional conference, DOE sponsored meeting, project management meeting, etc. The Basis for Estimating Costs could be items such as past trips, current quotations, Federal Travel Regulations, etc. Identify number of travelers, estimated cost per traveler, and duration of trip.

All listed travel must be necessary for performance of the Statement of Project Objectives.

Note: All projects should budget for sending 1-2 travelers to a DOE project review during each year of the project, each review will take approximately 2-3 days.

Purpose of travel	No. of Travelers	Depart From	Destination	No. of Days	Cost per Traveler	Cost per Trip	Basis for Estimating Costs
Budget Period 1							
Domestic Travel							
Visit to reactor mfr. to set up vendor agreement	2	Denver CO	Dallas TX	2	\$650	\$1,300	Internet prices
Domestic Travel subtotal						\$1,300	
International Travel							
Visit to technology provider to discuss IP agreement	2	Denver CO	Berlin Germany	5	\$4,000	\$8,000	Previous experience
International Travel subtotal						\$8,000	
Budget Period 1 Total						\$9,300	
(repeat as necessary for each Budget Period)							

Equipment

Equipment is generally defined as an item with an acquisition cost greater than \$5,000 and a useful life expectancy of more than one year. Further definitions can be found in 10 CFR 600.

List all proposed equipment below, providing a basis of cost such as vendor quotes, catalog prices, prior invoices, etc., and briefly justifying its need as it applies to the Statement of Project Objectives. If it is existing equipment, and the value of its contribution to the project budget is being shown as cost share, provide logical support for the estimated value shown. If it is new equipment which will retain a useful life upon completion of the project, provide logical support for the estimated value shown.

For equipment over \$50,000 in price, also include a copy of the associated vendor quote or catalog price list.

Equipment Item	Qty	Unit Cost	Total Cost	Basis of Cost	Justification of need
Budget Period 1					
EXAMPLE ONLY!!! Thermal shock chamber	2	\$20,000	\$40,000	Vendor Quote	Reliability testing of PV modules- Task 4.3
Budget Period 1 Total			\$40,000		
(repeat as necessary for each Budget Period)					

Supplies

Supplies are generally defined as an item with an acquisition cost of \$5,000 or less and a useful

life expectancy of less than one year. Supplies are generally consumed during the project performance. Further definitions can be found in 10 CFR 600.

List all proposed supplies, providing a basis of cost such as vendor quotes, catalog prices, prior invoices, etc., and briefly justifying the need for the Supplies as they apply to the Statement of Project Objectives. Note that Supply items must be direct costs to the project at this budget category, and not duplicative of supply costs included in the indirect pool that is the basis of the indirect rate applied for this project.

General Category of Supplies	Qty	Unit Cost	Total Cost	Basis of Cost	Justification of need
Budget Period 1					
EXAMPLE ONLY!!! Wireless DAS components	10	\$360.00	\$3,600	Catalog price	For Alpha prototype - Task 2.4
Budget Period 1 Total			\$3,600		
(repeat as necessary for each Budget Period)					

Contractual

The applicant must provide and justify all costs related to sub-recipients, vendors, contractors, consultants and FFRDC partners.

Sub-recipients (partners, sub-awardees):

For each sub-recipient with total project costs greater than \$100,000 or assigned to complete a major portion of the project, a separate SF-424A budget and budget justification form must be submitted. These sub-recipient forms may be completed by either the sub-recipients themselves or by the applicant. The budget totals on the sub-recipient's forms must match the contractual entries in the budget and budget justification of the applicant.

It is the responsibility of the applicant to ensure adequate support of the sub-recipient budget is included with the application. The support to justify the budgets of sub-recipients with estimated costs less than \$100,000 may be in any format, and at a minimum should provide what Statement of Project Objectives task(s) are being performed, the purpose/need for the effort, and a basis of the estimated costs that is considered sufficient for DOE evaluation.

Vendors (includes contractors and consultants):

List all vendors, contractors and consultants supplying commercial supplies or services used to support the project. The support to justify vendor costs (in any amount) should provide the purpose for the products or services and a basis of the estimated costs that is considered sufficient for DOE evaluation.

Federal Research and Development Centers (FFRDCs):

For FFRDC partners, the applicant should provide a Field Work Proposal (if not already provided with the original application), along with the FFRDC labor mix and hours, by category and FFRDC major purchases greater than \$25,000, including Quantity, Unit Cost, Basis of Cost, and Justification.

Sub-Recipient Name/Organization	Purpose/Tasks in SOPO	Budget Period 1 Costs	Budget Period 2 Costs	Budget Period 3 Costs	Project Total
EXAMPLE ONLY!!! XYZ Corp.	Partner to develop optimal fresnel lens for Gen 2 product - Task 2.4	\$48,000	\$32,000	\$16,000	\$96,000

		Sub-total	\$48,000	\$32,000	\$16,000	\$96,000
Vendor Name/Organization	Product or Service, Purpose/Need and Basis of Cost (Provide additional support at bottom of page as needed)	Budget Period 1 Costs	Budget Period 2 Costs	Budget Period 3 Costs	Project Total	
EXAMPLE ONLY!!! ABC Corp.	Vendor for developing custom robotics to perform lens inspection, alignment, and placement (Task 4). Required for expanding CPV module mfg. capacity. Cost is from competitive quotes.	\$32,900	\$86,500		\$119,400	
	Sub-total	\$32,900	\$86,500	\$0	\$119,400	
FFRDC Name/Organization	Purpose	Budget Period 1 Costs	Budget Period 2 Costs	Budget Period 3 Costs	Project Total	
					\$0	
	Sub-total	\$0	\$0	\$0	\$0	
Total Contractual		\$80,900	\$118,500	\$16,000	\$215,400	

Construction

Construction, for the purpose of budgeting, is defined as all types of work done on a particular facility, including erecting, altering, or remodeling. Construction conducted by the award recipient should be justified in this category. Any construction work that is performed by a vendor or subrecipient to the award recipient should be entered under “Contractual.”

List all proposed construction below, providing a basis of cost such as engineering estimates, prior construction, etc., and briefly justify its need as it applies to the Statement of Project Objectives. For major endeavors, a copy of the engineering estimate or quote should also be provided.

Overall description of construction activities: Example Only!!! - Build wind turbine platform			
General Description	Cost	Basis of Cost	Justification of need
Budget Period 1			
Three days of excavation for platform site EXAMPLE ONLY!!!	\$28,000	Engineering estimate	Site must be prepared for construction of platform.
Budget Period 1 Total	\$28,000		
Budget Period 2			
Budget Period 2 Total	\$0		
Budget Period 3			
Budget Period 3 Total	\$0		
PROJECT TOTAL	\$28,000		

Other Direct Costs

Other direct costs are direct cost items required for the project which do not fit clearly into other categories, and are not included in the indirect pool for which the indirect rate is being applied to this project. Examples are meeting costs, postage, couriers or express mail, telephone/fax costs, printing costs, etc.

Basis of cost are items such as vendor quotes, prior purchases of similar or like items, published

price list, etc.

General description	Cost	Basis of Cost	Justification of need
Budget Period 1			
EXAMPLE ONLY!!! Grad student tuition	\$16,000	Established UCD costs	Support of graduate students working on project
Budget Period 1 Total	\$16,000		
(repeat as necessary for each Budget Period)			

Indirect Costs

A federally approved indirect rate agreement, or rate proposed supported and agreed upon by DOE for estimating purposes is required if reimbursement of indirect benefits is requested. If there is a federally approved indirect rate agreement, a copy must be provided with this application and if selected, must be provided electronically to the Contracting Officer for this project. If there is no current, federally approved indirect rate agreement or if the federally approved indirect rate agreement has been changed or updated, a rate proposal must be included with the application. If selected, the rate agreement will be finalized during award negotiations. Calculate the indirect rate dollars and enter the total in the Section B., line 6.j. (Indirect Charges) of form SF 424A.

	Budget Period 1	Budget Period 2	Budget Period 3	Total
Rate applied:	0.0%	0.0%	0.0%	
Total indirect costs requested:				\$0

Cost Share

A detailed presentation of the cash or cash value of all cost share proposed for the project must be provided in the table below. Identify the source and amount of each item of cost share proposed by the award recipient and each sub-recipient or vendor. Letters of commitment must be submitted for all third party cost share (other than award recipient).

Note that "cost-share" is not limited to cash investment. Other items that may be assigned value in a budget as incurred as part of the project budget and necessary to performance of the project, may be considered as cost share, such as: contribution of services or property; donated, purchased or existing equipment; buildings or land; donated, purchased or existing supplies; and/or unrecovered personnel, fringe benefits and indirect costs, etc. For each cost share contribution identified as other than cash, identify the item and describe how the value of the cost share contribution was calculated.

Funds from other Federal sources MAY NOT be counted as cost share. This prohibition includes FFRDC sub-recipients. Non-Federal sources include private, state or local Government, or any source not originally derived from Federal funds. If selected, documentation of cost sharing commitments must be provided during award negotiations unless they have not changed since its submission.

Fee or profit will not be paid to the award recipients or subrecipients of financial assistance awards. Additionally, foregone fee or profit by the applicant shall not be considered cost sharing under any resulting award. Reimbursement of actual costs will only include those costs that are allowable and allocable to the project as determined in accordance with the applicable cost

principles prescribed in 10 CFR 600.127, 10 CFR 600.222 or 10 CFR 600.317. Also see 10 CFR 600.318 relative to profit or fee.

Organization/Source	Type (cash or other)	Cost Share Item	Budget Period 1 Cost Share	Budget Period 2 Cost Share	Budget Period 3 Cost Share	Total Project Cost Share
ABC Company EXAMPLE ONLY!!!	Cash	Project partner ABC Company will provide 40 PV modules for product development at 50% off the of the retail price of \$680	\$13,600			\$13,600
						\$0
						\$0
		Totals	\$0	\$0	\$0	\$0
Total Project Cost:		\$312,300	Cost Share Percent of Award:			0.0%

American Recovery and Reinvestment Act Information:

Applications shall provide information which validates that all laborers and mechanics on projects funded directly by or assisted in whole or in part by and through funding appropriated by the Recovery Act are paid wages at rates not less than those prevailing on projects of a similar character and in the same locality as determined by subchapter IV of Chapter 31 of title 40, United States Code (Davis-Bacon Act). For guidance on how to comply with this provision, see <http://www.dol.gov/esa/whd/contracts/dbra.htm>.

To satisfy this requirement, please provide a written affirmation that you will comply with the Davis-Bacon Act, as identified above, along with the signature of the authorized representative of your organization.