

**FINANCIAL ASSISTANCE
FUNDING OPPORTUNITY ANNOUNCEMENT**



**U.S. DEPARTMENT OF ENERGY
Golden Field Office
Biomass Program**

IN PARTNERSHIP WITH



**U.S. DEPARTMENT OF AGRICULTURE
Cooperative State Research, Education, and Extension Service**

**Biomass Research and Development Initiative
Funding Opportunity Number: DE-PS36-09GO99016
Announcement Type: Modification 003**

**CFDA Number: 81.087 (DOE)
CFDA Number: 10.312 (USDA)**

**Issue Date: 1/30/2009
Pre-Application Due Date: 3/10/2009
5:00 PM Eastern Time**

Full Application Due Date: 6/11/2009
5:00 PM Eastern Time

Note: Applicants must be registered with Grants.gov to submit a Pre-application in response to this Funding Opportunity Announcement (this will also be true of the Funding Opportunity Announcement that will be posted to invite full applications for this program). Because Pre-applications are due only a few weeks after the issue date, applicants who are not already registered with Grants.gov are encouraged to do so immediately. Applicants, who are not registered with CCR and Grants.gov, should allow at least 21 days to complete these requirements.



Department of Energy

Golden Field Office
1617 Cole Boulevard
Golden, Colorado 80401-3393

DE-PS36-09G099016
Modification No. 003

DATE: February 27, 2009
FROM: Henry E. Eggink, Contracting Officer
TO: All Prospective Applicants

SUBJECT: Modification No. 003 to Announcement DE-PS36-09G099016,
"Biomass Research and Development Initiative"

The purpose of this amendment is to notify Applicants that the Pre-Application Due Date is extended to Tuesday March 10, 2009, 5:00 PM Eastern Time.

All other content of the Announcement remains unchanged.



Department of Energy

Golden Field Office
1617 Cole Boulevard
Golden, Colorado 80401-3393

DE-PS36-09G099016
Modification No. 002

DATE: February 25, 2009
FROM: Henry E. Eggink, Contracting Officer
TO: All Prospective Applicants

SUBJECT: Modification No. 002 to Announcement DE-PS36-09G099016,
"Biomass Research and Development Initiative"

The purpose of this amendment is to notify Applicants that the Adobe Application package has been posted in Grants.gov for download.

To access the Adobe Application package, go to <http://www.grants.gov>, select "Apply for Grants," and then select "Download Application Package." Enter the CFDA and/or the funding opportunity number located on the cover of the announcement and then follow the prompts to download the application package. Note that Grants.gov requires Applicants to use the compatible version of Adobe Reader software to complete the Grants.gov Adobe application package. To ensure you have the Grants.gov compatible version of Adobe Reader, visit the download software page at http://www.grants.gov/help/download_software.jsp

In addition, this amendment notifies Applicants of a new form required as part of the Adobe Application package entitled "Project/Performance Site Locations". Part IV.B. of the Funding Opportunity Announcement is modified to add the requirement as follows:

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(s).

All other content of the Announcement remains unchanged.



Department of Energy

Golden Field Office
1617 Cole Boulevard
Golden, Colorado 80401-3393

DE-PS36-09G099016

Modification No. 001

DATE: February 4, 2009
FROM: Henry E. Eggink, Contracting Officer
TO: All Prospective Applicants

SUBJECT: Modification No. 001 to Announcement DE-PS36-09G099016,
"Biomass Research and Development Initiative"

The Announcement is amended as follows:

1. Under **Part IV. PRE-APPLICATIONS AND SUBMISSION INFORMATION**, the first paragraph entitled "**ADDRESS TO REQUEST PRE-APPLICATION PACKAGE**" is deleted in its entirety.

All other parts of the Announcement remain unchanged.

NOTE: REQUIREMENTS FOR GRANTS.GOV

Where to Submit

Pre-applications must be submitted through Grants.gov to be considered for award. You cannot submit a pre-application through Grants.gov unless you are registered. Please read the registration requirements carefully and start the process immediately. Remember you have to update your CCR registration annually. If you have any questions about your registration, you should contact the Grants.gov Helpdesk at 1-800-518-4726 to verify that you are still registered in Grants.gov.

Registration Requirements

There are several one-time actions you must complete in order to submit a pre-application through Grants.gov (e.g., obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number, register with the Central Contract Registry (CCR), register with the credential provider, and register with Grants.gov). See <http://www.grants.gov/GetStarted>. Use the Grants.gov Organization Registration Checklist at <http://www.grants.gov/section3/OrganizationRegCheck.pdf> to guide you through the process. Designating an E-Business Point of Contact (EBiz POC) and obtaining a special password called an MPIN are important steps in the CCR registration process. Applicants, who are not registered with CCR and Grants.gov, should allow at least 21 days to complete these requirements.

IMPORTANT NOTICE TO POTENTIAL PRE-APPLICANTS: When you have completed the process, you should call the Grants.gov Helpdesk at 1-800-518-4726 to verify that you have completed the final step (i.e. Grants.gov registration).

Microsoft Vista and Office 2007 Compatibility

Grants.gov is currently incompatible with both the new Microsoft (MS) Vista Operating System and the new Microsoft (MS) Office 2007 versions of Word, Excel, and Power Point. In order to create and submit your pre-application to Grants.gov, you must find a computer with a previous version Microsoft Operating System, such as Windows XP.

If you attach a file created using MS Office 2007, you will not get an error message when you submit the pre-application, HOWEVER, your entire pre-application will not be able to be processed or accepted at Grants.gov and will not reach the Department of Energy/Department of Agriculture (DOE/USDA). Grants.gov can accept pre-applications with attachments created in MS Office 2007 if the attachments are saved in the prior format. See the http://www.grants.gov/assets/Vista_and_office_07_Compatibility.pdf for detailed instructions on how to do this. A file created in MS Office 2007 can be identified by the "x" at the end of the file extension, for example "sample.docx" for a Word file. Contact Grants.gov at 1-800-518-4726 with any questions.

Questions

Questions relating to the registration process, system requirements, how a pre-application form works, or the submittal process must be directed to Grants.gov at 1-800-518-4726 or support@grants.gov. Part VIII, Section A. of this announcement explains how to submit other questions to the DOE/USDA, relative to the content and requirements of this announcement.

Pre-application Receipt Notices

After a pre-application is submitted, the Authorized Organization Representative (AOR) will receive a series of five e-mails. It is extremely important that the AOR watch for and save each of the emails. It may take up to 2 business days from pre-application submission to receipt of

email Number 2. You will know that your pre-application has reached DOE/USDA when the AOR receives email Number 5. You will need the Submission Receipt Number (email Number 1) to track a submission. The titles of the five e-mails are:

Number 1 – Grants.gov Submission Receipt Number

Number 2 – Grants.gov Submission Validation Receipt for Application Number

Number 3 – Grants.gov Grantor Agency Retrieval Receipt for Application Number

Number 4 – Grants.gov Agency Tracking Number Assignment for Application Number

Number 5 – DOE e-Center Grant Application Received

The last email will contain instructions for the AOR to register with the DOE e-Center. If the AOR is already registered with the DOE e-Center, the title of the last email changes to: Number 5 – DOE e-Center Grant Application Received and Matched. This email will contain the direct link to the pre-application in IIPS. The AOR will need to enter their DOE e-Center user id and password to access the pre-application.

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PART I – FUNDING OPPORTUNITY DESCRIPTION

Overview

Collaboration between DOE and USDA on a Biomass Research and Development Initiative is directed under various statutory authorities, primarily the Food, Conservation, and Energy Act of 2008 (FCEA) (P.L. 110-246, Section 9008) and the Energy Policy Act of 2005 (EPAct 2005) (P.L. 109-58; Section 941). In particular, Section 9008(e)(3) of the FCEA provides direction and guidance to DOE and USDA on the technical areas the Biomass Research and Development Initiative should address: (A) Feedstocks development; (B) Biofuels and biobased products development; and, (C) Biofuels development analysis. These are described in more detail below.

Value Chain Framework

Through this Funding Opportunity Announcement (FOA), DOE and USDA are implementing a framework to categorize applications under the three Technical Areas. Since Technical Areas (A) and (B) represent different elements of the biomass to biofuels/biobased products value chain, DOE and USDA need to understand what element(s) of that value chain Applicants intend to address and whether the project is conducting research or a demonstration. Technical Area (C) identifies three key topics where analysis is needed. DOE and USDA need to understand the scale and value chain elements impacted by such analyses.

In its simplest form, this value chain can be characterized as consisting of the following elements: feedstock development and growth; feedstock harvesting and preparation; feedstock logistics and transportation; feedstock storage and handling; biomass pre-processing (as appropriate); biomass conversion; production of biofuels/bioenergy/biobased products; product logistics and handling; product delivery and distribution.

Proposed projects may address different levels of scale, ranging from large industrial to small rural or farm scale. Commercial-scale demonstration projects are not supported by this funding opportunity.

All projects should be planned and implemented in accordance with a life cycle point of view such that both direct and indirect environmental and economic impacts are considered. USDA and DOE are soliciting applications that address a systems-based approach, i.e. applications that incorporate two or more elements of the value chain. In addition, USDA and DOE require that proposed projects addressing Technical Area A or B incorporate a system analysis focusing on environmental and economic sustainability and impacts (including natural resources, and food supply), and/or the potential of environmentally friendly use of federal land resources for the biomass processes involved (see Technical Area C). USDA and DOE are also soliciting applications that address diversification of feedstocks for biobased industrial products.

For those applications submitted under Technical Areas (A), (B) or both, DOE and USDA will require that the Applicant characterize the project in terms of the value chain elements to be addressed and the ultimate scale (large industrial to small rural or farm-scale) involved. For applications submitted addressing Technical Area (C), proposed analyses (i), (ii) or (iii) (See Page 9 for details) should identify the value chain elements to which the analysis applies and characterize the potential benefits/costs that could accrue. Applicants will also be required to identify the project scale that the proposed analysis would address.

Compliance with Presidential Initiatives, the USDA Research, Education and Economics Strategic Energy Science Plan, and the DOE Strategic Plan

In fiscal years (FYs) 2002 – 2007, DOE and USDA jointly solicited and funded biomass research, development, and demonstration activities. With the passage of the FCEA, the collaboration continues between DOE and USDA, now through its Cooperative State Research, Education, and Extension Service (CSREES), with the joint issuance of this Funding Opportunity Announcement which invites pre-applications for the FY 2009 Biomass Research and Development Initiative. Achieving the technical targets in the topic areas below (specific performance targets and areas of interest are outlined in Appendix D) will support:

- the President's Twenty-in-Ten Plan, enacted through the Renewable Fuel Standard Section 202 of the Energy Independence and Security Act, requiring 36 billion gallons of biofuels by 2022;
- the President's Advanced Energy Initiative calling for cost competitive cellulosic ethanol by 2012;
- USDA/CREES's vision of a fully integrated system meeting national, regional, and local energy needs, and agriculture- and natural resource-based sustainable energy that enhances stewardship of the environment;
- the DOE, Energy Efficiency and Renewable Energy strategic goals of reducing dependence on imported oil and enabling a domestic bioindustry; and
- USDA's Biopreferred Program that creates a market pull for new products and technologies.

DOE/USDA Objectives and Purposes

Section 9008 of the FCEA and EPCA 2005 set forth the following objectives and purposes for the Biomass Research and Development Initiative FOAs:

The objectives of this Initiative are to develop:

- technologies and processes necessary for abundant commercial production of biofuels at prices competitive with fossil fuels;
- high-value biobased products –
 - to enhance the economic viability of biofuels and power;
 - to serve as substitutes for petroleum-based feedstocks and products; and
 - to enhance the value of coproducts produced using the technologies and processes; and
- a diversity of economically and environmentally sustainable domestic sources of renewable biomass for conversion to biofuels, bioenergy and biobased products.

The purpose of the Initiative is to competitively award grants to eligible entities to carry out research on and development and demonstration of (A): biofuels and biobased products; and (B) the methods, practices and technologies, for the production of biofuels and biobased products.

Project Description

DOE and USDA/CSREES are, therefore, seeking pre-applications to address the Technical Areas as set out in Section 9008 of the FCEA.

The Technical Areas defined in the FCEA are the only eligible topic areas under this FOA. The Technical Areas are:

(A) FEEDSTOCKS DEVELOPMENT

Research, development, and demonstration activities regarding feedstocks genetic, and feedstock logistics (including the harvest, handling, transport, preprocessing, and storage) relevant to production of raw materials for conversion to biofuels and biobased products.

(B) BIOFUELS AND BIOBASED PRODUCTS DEVELOPMENT.—

Research, development, and demonstration activities to support—

- (i) the development of diverse cost-effective technologies for the use of cellulosic biomass in the production of biofuels and biobased products; and
- (ii) product diversification through technologies relevant to production of a range of biobased products (including chemicals, animal feeds, and cogenerated power) that potentially can increase the feasibility of fuel production in a biorefinery.

(C) BIOFUELS DEVELOPMENT ANALYSIS.—

- (i) STRATEGIC GUIDANCE.— Development of analysis that provides strategic guidance for the application of renewable biomass technologies to improve sustainability and environmental quality, cost effectiveness, security, and rural economic development.
- (ii) ENERGY AND ENVIRONMENTAL IMPACT.— Development of systematic evaluations of the impact of expanded biofuel production on the environment (including forest land) and on the food supply for humans and animals, including the improvement and development of tools for life cycle analysis of current and potential biofuels.
- (iii) ASSESSMENT OF FEDERAL LAND.—Assessments of the potential of Federal land resources to increase the production of feedstocks for biofuels and biobased products, consistent with the integrity of soil and water resources and with other environmental considerations.

Detailed descriptions and desired outcomes of each topic are found in Appendix C.

Research, Development, or Demonstration projects will be considered for all Technical Areas.

Application Process

A two-phase technical evaluation process will be used for applications submitted to the Biomass Research and Development Initiative in FY 2009. **IT IS IMPORTANT TO NOTE THAT DOE IS MANAGING THE FIRST PHASE (PRE-APPLICATIONS) PROCESS, WHILE USDA/CSREES WILL MANAGE THE SECOND PHASE (FULL APPLICATIONS) PROCESS. THE REQUIREMENTS FOR THE FULL APPLICATIONS ARE FOUND IN APPENDIX E TO THIS FOA. IF AN APPLICANT IS INVITED BASED ON THE MERITS OF THEIR PRE-APPLICATION TO SUBMIT A FULL APPLICATION, AT A MINIMUM THE DOCUMENTS IN APPENDIX E WILL BE REQUIRED. ADDITIONAL REQUIREMENTS MAY APPLY. IT IS HIGHLY RECOMMENDED THAT APPLICANTS TO THIS PRE-APPLICATION FOA REVIEW THE REQUIREMENTS OUTLINED IN APPENDIX E – MINIMUM REQUIREMENTS FOR FULL APPLICATIONS AND SELECTION OF AWARDEES FOR JOINT FY 2009 BIOMASS RESEARCH AND DEVELOPMENT INITIATIVE.**

Phase 1 – Pre-applications

The first phase requires the applicant to submit a preliminary application (pre-application) to this FOA, which will be evaluated based on the four technical merit criteria discussed in Part V. As a result of this preliminary review, each applicant will either be requested to submit a full application package or be removed from further consideration for funding this FY. In either case, copies of reviews, including a summary of the panel comments, but not the identity of panel reviewers will be provided to each applicant. The review of pre-applications will be conducted in accordance with both the DOE's merit review guidance (10 CFR 600), and consistent with USDA/CSREES' standards for competition as outlined in Subparts B and C of 7 CFR 3430.

Phase 2 – Full applications

The second evaluation phase will consist of a scientific peer review of all compliant full application packages, based on the four technical merit criteria found in Part V of this FOA. Applicants notified that they are invited to submit full applications will be required to submit them through the Grants.gov website. The minimum requirements for full applications are outlined in Appendix E of this FOA. The review and evaluation of full applications, will meet CSREES' standards for competition as outlined in Subparts B and C of 7 CFR 3430.

Funding Considerations

Applications received under this Announcement will be considered independently for funding from DOE and USDA.

DOE and USDA/CREES reserve the right to select applications for award from any or all of the Technical Areas described above, subject to the requirement included in Section 9008(e)(6)(A)(iv) of the FCEA that each of the three technical areas receive at least 15% of the funds made available.

For FY 2009. Section 9008(h)(1) of the FCEA makes available \$20 million in mandatory funding for USDA awards. DOE funding of \$5 million over the four-year performance period is planned, subject to annual appropriations of the Appropriations Subcommittee on Energy and Water. Currently, \$1 million is planned for FY2009 funding.

Additional Background

Complete text of the legislative authorities can be found at the following websites:

Food, Conservation and Energy Act of 2008 (http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_cong_public_laws&docid=f:publ246.110.pdf)

As an added resource, applicants may review the *Roadmap for Biomass Technologies in the United States* prepared by the Biomass Technical Advisory Committee. It can be found on the web at http://www.brdisolutions.com/Site%20Docs/Roadmap/OBP_roadmapv2_web.pdf .

Another resource applicants may find helpful is the *National Biofuels Action Plan*, developed by the Biomass Research and Development Board, which can be found on the web at <http://www1.eere.energy.gov/biomass/pdfs/nbap.pdf>

PART II – AWARD INFORMATION

A. TYPE OF AWARD INSTRUMENT

- DOE anticipates awarding grants under this program announcement.
- USDA/CREES anticipates awarding grants under this program announcement

B. ESTIMATED FUNDING

- DOE funding is subject to annual appropriations
- All figures below should be treated as estimates.

Total Federal Funding Anticipated:	\$25 million
Anticipated FY08 USDA/CREES Federal Funding Amount:	\$20 million
Anticipated FY09 DOE Federal Funding Amount:	\$1 million
DOE Federal Funding Anticipated for FY10-11:	\$4 million

C. MAXIMUM AND MINIMUM AWARD SIZE

- Ceiling (i.e., the maximum amount for an individual award made under this announcement): \$5,000,000 (total, not per year)
- Floor (i.e., the minimum amount for an individual award made under this announcement): \$1,000,000 (total, not per year)

D. EXPECTED NUMBER OF AWARDS

DOE and USDA/CREES anticipate funding 5-25 awards.

E. ANTICIPATED AWARD SIZE

The average award size for this program in FY 2007 was \$1.0 million. Section 9008(e)(6)(A)(iv) of the FCEA requires that the agencies make at least 15 % of the funds available to carry out this program available to each of the 3 technical areas described above.

F. PERIOD OF PERFORMANCE

DOE and USDA/CREES anticipate making awards that will run for up to 4 years.

G. TYPE OF APPLICATION

DOE and USDA/CREES will **only** accept new applications under this announcement.

PART III - ELIGIBILITY INFORMATION

A. ELIGIBLE APPLICANTS

All entities listed under Section 9008(e)(5) of the Food, Conservation and Energy Act of 2008 are eligible to apply. Eligible entities include:

- (A) an institution of higher education;
- (B) a National Laboratory;
- (C) a Federal research agency;
- (D) a State research agency;
- (E) a private sector entity;
- (F) a nonprofit organization; or
- (G) a consortium of 2 or more entities described in subparagraphs (A) through (F).

Consortia are encouraged to bring important capabilities together to best achieve the desired innovation on biomass projects. Institutions of higher education include colleges and universities beyond the secondary education level. Private sector entities include companies, corporations, farms, ranches, cooperatives, and others that compete in the marketplace.

B. COST SHARING

The minimum required recipient cost share must be at least 20% of the total allowable costs for Research and Development (R&D) projects and 50% of the total allowable costs for Demonstration projects. Applicant cost share must come from non-Federal sources unless otherwise allowed by law. **No blending of R&D and Demonstration or associated cost share will be permitted.**

The sum of the Government share, including FFRDC contractor costs if applicable, and the recipient share of allowable costs equals the total allowable cost of the project. If an FFRDC is involved as either the prime Applicant or as a partner, cost share will still be based on the total project cost and the source of cost share must come from non-Federal sources.

To assure proper cost share determinations in their pre-applications, Applicants will be required to identify the following:

1. Technical Area(s) (A and/or B and/or C) they are applying for (While Applicants may address more than one Technical Area, they must identify the primary technical area);
2. Whether the Applicant is proposing a research, development, or a demonstration project;
3. Which elements of the value chain they are addressing (feedstock growth; feedstock harvesting and preparation; feedstock logistics and transportation; feedstock storage and handling; biomass pre-processing (as appropriate); biomass conversion; production of biofuels/bioenergy/biobased products; product logistics and handling; product delivery and distribution); and
4. The ultimate scale (industrial/commercial or rural/distributed scale) of value chain addressed.

The term “demonstration” is jointly defined in P.L. 109-58 and P.L. 110-246 to mean demonstration of technology in a pilot plant or semi-works scale facility, including a plant or facility located on a farm.

A. OTHER ELIGIBILITY REQUIREMENTS

- **ONLY THOSE APPLICANTS THAT HAVE SUBMITTED A PRE-APPLICATION AND RECEIVED NOTIFICATION FROM DOE OF RECEIPT AND APPROVAL OF THE PRE-APPLICATION WILL BE INVITED TO SUBMIT A FULL APPLICATION UNDER THIS FOA.**

- **DOE/NNSA National Laboratory Contractors and Other Federally Funded Research and Development Center (FFRDC) Contractors.**

1. A DOE/NNSA 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/NNSA 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 M&O contract. The following wording is acceptable for the authorization:

“Authorization is granted for the _____ Laboratory to participate in the proposed project. The work proposed for the laboratory is consistent with or complimentary to the missions of the laboratory and will not adversely impact execution of the DOE/NNSA assigned programs at the laboratory.”

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

Authorization for non-DOE/NNSA 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. Save the authorization in a single file named “FFRDC_Auth.pdf” and click on “Add Optional Other Attachment” in Field 11 to attach.

Authorization for DOE/NNSA FFRDCs. The cognizant contracting officer for the FFRDC must authorize in writing the use of a DOE/NNSA 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 complimentary to the missions of the laboratory, will not adversely impact execution of the DOE/NNSA assigned programs at the laboratory.”

Value/Funding. The value of, and funding for, the FFRDC contractor portion of the work will not normally be included in the award to a successful Applicant. Usually, DOE/NNSA will fund a DOE/NNSA 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 project cost including the Applicant's and the FFRDC contractor's portions of the effort, if any. If an FFRDC is the Applicant, they are responsible for fulfilling the cost share requirement with non-Federal funds. FFRDC private contractor, academic, industry, or other non-federal sources may be utilized for cost share as appropriate.

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.

D. MULTIPLE PRINCIPAL INVESTIGATORS

The assignment and use of multiple Principal Investigators (PIs) in projects awarded under this FOA is allowed. The Applicant, whether a single organization or team/partnership/consortium, must however indicate in the application if the project will include multiple PI's. The decision to use multiple PIs for a project is the sole responsibility of the Applicant. If multiple PI's will be designated, the Applicant must identify in the application the Contact PI/Project Coordinator and provide a "Coordination and Management Plan" that describes the organization structure of the project as it pertains to the designation of multiple PI's. 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
- PI's roles and administrative, technical and scientific responsibilities for the project.

PART IV – PRE-APPLICATION AND SUBMISSION INFORMATION

A. ADDRESS TO REQUEST PRE-APPLICATION PACKAGE.

Pre-application forms and instructions are available at Grants.gov. To access these materials, go to <http://www.grants.gov>, select "Apply for Grants," and then select "Download Application Package." Enter the DOE CFDA (81.087) and/or the funding opportunity number located on the cover of this announcement and then follow the prompts to download the application package.

B. PRE-APPLICATION

1. **Pre-application.** Pre-applications are **required**. You must complete the SF 424, attach your Pre-application Project Summary and Pre-application Project Narrative in the block provided, and submit electronically through Grants.gov at www.Grants.gov.
2. **Pre-application Content and Format**
The pre-application shall consist of an SF 424 "Application for Federal Assistance" form, a one page pre-application project summary, plus no more than a three page pre-application project narrative when printed single-sided. **ONLY THE SF 424, THE ONE PAGE PRE-APPLICATION PROJECT SUMMARY, PLUS THE THREE PAGE PRE-APPLICATION PROJECT NARRATIVE, AS DESCRIBED HEREIN, ARE REQUIRED FOR A PRE-APPLICATION – THE ADDITIONAL REQUIREMENTS AND FORMS DESCRIBED APPENDIX E ARE ONLY REQUIRED FOR APPLICANTS INVITED TO SUBMIT FULL APPLICATIONS AS A RESULT OF THE PRE-APPLICATION REVIEW PROCESS.**

You must complete the mandatory forms and any applicable optional forms 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.**

Grants.gov is currently phasing out the use of the PureEdge software and transitioning to use of Adobe Reader software. Therefore, until such time as the Adobe Application package is ready, an Application package will not be posted with this Announcement. Once the transition is complete, an amendment to the Announcement will be posted, along with the Adobe Application package.

Please note that the information requested in the Announcement will not change with the use of the Adobe Application package and does not preclude Applicants from working on the technical narrative and other required information identified in the Announcement.

Note that Grants.gov requires Applicants to use the compatible version of Adobe Reader software to complete a Grants.gov Adobe application package. To ensure you have the Grants.gov compatible version of Adobe Reader, visit the download software page at http://www.grants.gov/help/download_software.jsp

a) **SF 424 - Application for Federal Assistance.**

Complete all required fields in accordance with the pop-up instructions on the form. In Block 15, along with the project title, indicate the technical area to which the project is applicable and the type of project, i.e., research, development or demonstration. **To activate the instructions, turn on the “Help Mode” (Icon with the pointer and question mark at the top of 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.

b) **Other Attachments Form**

Submit the following files with your pre-application and attach it to the Other Attachments Form. Click on “Add Optional Other Attachment” to attach the one page pre-application project summary. Click on “Add Mandatory Other Attachment” to attach the three page pre-application project narrative.

Pre-application Project Summary File

The pre-application project summary must contain a summary of the proposed activity suitable for dissemination to the public. It must be a self-contained document that includes:

- the name of the applicant;
- the project director/principal investigator(s);
- the project title;
- the project location;
- the Technical Area(s) to which the project is applicable (indicating the primary Technical Area if more than one is proposed);
- the biomass value chain elements and scale to be addressed by the project;
- the project’s major participants (for collaborative projects);
- Federal funds requested;
- cost share proposed;
- total project costs;
- the objectives of the project;
- a description of the project including methods to be employed; and
- the potential impact of the project (i.e., benefits, outcomes).

This document must not include any proprietary or sensitive business information as the DOE and/or USDA/CREES may make it available to the public. The pre-application project summary must not exceed 1 page when printed using standard 8.5” by 11” paper with 1” margins (top, bottom, left and right) with font not smaller than 11 point. Save the information in a single file named “Summary.pdf,” and click on “Add Optional Other Attachment” to attach.

Pre-application Project Narrative File

The pre-application project narrative should address the major aspects of the four technical evaluation criteria given below, should include the technical area to which the project is applicable, and should include the type of project, i.e., R&D or demonstration. The pre-application project narrative must be organized into the following sections:

1. **Technical Relevance and Merit**
2. **Technical Approach/Work Plan**
3. **Energy Efficiency/Displacement, Rural Economic Development, and Environmental Benefits**
4. **Technical, Management, and Facility Capabilities**

The pre-application project narrative must not exceed **3 pages** when printed using standard 8.5” by 11” paper with 1” margins (top, bottom, left and right) with font not smaller than 11 point. **EVALUATORS WILL ONLY REVIEW THE NUMBER OF PAGES SPECIFIED IN THE PRECEDING SENTENCE.** Do not include any Internet addresses (URLs) that provide information necessary to review the application, because the information contained in these sites will not be reviewed. See Part IX.D for instructions on how to mark proprietary application information. Save the information in a single file named “Narrative.pdf,” and click on “Add Mandatory Other Attachment” to attach.

Pre-application - Summary of Required Forms/Files

Your pre-application must include the following documents:

Name of Document	Format	File Name
SF 424	PureEdge Form	N/A
Other Attachments Form: Attach the following files to this form:	PureEdge Form	N/A
Pre-application Project Summary File (1 page)	PDF	Summary.pdf
Pre-application Project Narrative File (3 pages)	PDF	Narrative.pdf

C. SUBMISSIONS FROM SUCCESSFUL APPLICANTS

If selected for award, DOE/USDA/CREES 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
- Name and phone number of the Designated Responsible Employee for complying with national policies prohibiting discrimination (See 10 CFR 1040.5)
- Commitment Letter from Third Parties Contributing to Cost Sharing, if applicable
- Environmental Questionnaire

D. SUBMISSION DATES AND TIMES.

1. Pre-application Due Date.

Pre-applications must be received by March 6, 2009 5:00 PM Eastern Time. (See Part IV.B.2)

2. Anticipated Notice of Selection to Submit Full Application.

After the pre-application review, selected Pre-Applicants will be invited to submit a full application. DOE/CSREES anticipates informing Pre-Applicants whether they are being invited to submit a full application or not by April 28, 2009.

3. Full Application Due Date.

Only applications from applicants invited to submit a full application will be considered. Applicants invited to submit full applications will be notified when full applications are due, but at this time DOE/CSREES anticipates full applications to be due by June 11, 2009 5:00 PM Eastern Time. You are encouraged to transmit your full application well before the deadline. APPLICATIONS RECEIVED AFTER THE DEADLINE WILL NOT BE REVIEWED OR CONSIDERED FOR AWARD.

4. Anticipated Notice of Selection and Award Dates.

DOE/CSREES anticipate notifying Applicants selected for award by July 23, 2009 and making awards by September 30, 2009.

E. INTERGOVERNMENTAL REVIEW

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

F. FUNDING RESTRICTIONS.

FOR Applications invited to be funded by DOE:

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.

FOR Applications invited to be funded by USDA/CREES:

Pursuant to Section 1462(a) of the National Agriculture Research, Extension, and Teaching Policy Act of 1977 (7 U.S.C. 3310(a)), indirect costs are limited to 22 percent under this program. Costs that are a part of an institution's indirect cost pool may not be reclassified as direct costs for the purpose of making them allowable.

USDA/CREES has determined that grant funds awarded under this authority may not be used for the renovation or refurbishment of research, education, or extension space; the purchase or installation of fixed equipment in such space; or the planning, repair, rehabilitation, acquisition, or construction of buildings or facilities.

G. OTHER SUBMISSION AND REGISTRATION REQUIREMENTS

Where to Submit

Pre-applications must be submitted through Grants.gov to be considered for award. You cannot submit a pre-application through Grants.gov unless you are registered. Please read the registration requirements carefully and start the process immediately. Remember you have to update your CCR registration annually. If you have any questions about your registration, you should contact the Grants.gov Helpdesk at 1-800-518-4726 to verify that you are still registered in Grants.gov.

Registration Requirements

There are several one-time actions you must complete in order to submit a pre-application through Grants.gov (e.g., obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number, register with the Central Contract Registry (CCR), register with the credential provider, and register with Grants.gov). See <http://www.grants.gov/GetStarted>. Use the Grants.gov Organization Registration Checklist at <http://www.grants.gov/section3/OrganizationRegCheck.pdf> to guide you through the process. Designating an E-Business Point of Contact (EBiz POC) and obtaining a special password called an MPIN are important steps in the CCR registration process. Applicants, who are not registered with CCR and Grants.gov, should allow at least 21 days to complete these requirements.

IMPORTANT NOTICE TO POTENTIAL PRE-APPLICANTS: When you have completed the process, you should call the Grants.gov Helpdesk at 1-800-518-4726 to verify that you have completed the final step (i.e. Grants.gov registration).

Microsoft Vista and Office 2007 Compatibility

Grants.gov is currently incompatible with both the new Microsoft (MS) Vista Operating System and the new Microsoft (MS) Office 2007 versions of Word, Excel, and Power Point. In order to create and submit your pre-application to Grants.gov, you must find a computer with a previous version Microsoft Operating System, such as Windows XP.

If you attach a file created using MS Office 2007, you will not get an error message when you submit the pre-application, HOWEVER, your entire pre-application will not be able to be

processed or accepted at Grants.gov and will not reach the Department of Energy/Department of Agriculture (DOE/USDA). Grants.gov can accept pre-applications with attachments created in MS Office 2007 if the attachments are saved in the prior format. See the http://www.grants.gov/assets/Vista_and_office_07_Compatibility.pdf for detailed instructions on how to do this. A file created in MS Office 2007 can be identified by the "x" at the end of the file extension, for example "sample.docx" for a Word file. Contact Grants.gov at 1-800-518-4726 with any questions.

Questions

Questions relating to the registration process, system requirements, how a pre-application form works, or the submittal process must be directed to Grants.gov at 1-800-518-4726 or support@grants.gov. Part VIII, Section A. of this announcement explains how to submit other questions to the DOE/USDA, relative to the content and requirements of this announcement.

Pre-application Receipt Notices

After a pre-application is submitted, the Authorized Organization Representative (AOR) will receive a series of five e-mails. It is extremely important that the AOR watch for and save each of the emails. It may take up to 2 business days from pre-application submission to receipt of email Number 2. You will know that your pre-application has reached DOE/USDA when the AOR receives email Number 5. You will need the Submission Receipt Number (email Number 1) to track a submission. The titles of the five e-mails are:

Number 1 – Grants.gov Submission Receipt Number

Number 2 – Grants.gov Submission Validation Receipt for Application Number

Number 3 – Grants.gov Grantor Agency Retrieval Receipt for Application Number

Number 4 – Grants.gov Agency Tracking Number Assignment for Application Number

Number 5 – DOE e-Center Grant Application Received

The last email will contain instructions for the AOR to register with the DOE e-Center. If the AOR is already registered with the DOE e-Center, the title of the last email changes to: Number 5 – DOE e-Center Grant Application Received and Matched. This email will contain the direct link to the pre-application in IIPS. The AOR will need to enter their DOE e-Center user id and password to access the pre-application.

PART V – PRE-APPLICATION REVIEW INFORMATION

A. Pre-Application Evaluation Criteria

Applicants will be required to identify which Technical Area(s) they are applying for, the project scale (industrial/commercial or rural/distributed scale) and whether they are proposing an R&D or Demonstration project.

The following technical evaluation criteria will be used to evaluate pre-applications:

Criterion 1: Technical Relevance and Merit Weight: 35 percent

Specific considerations for this criterion are:

- The perceived relevance and alignment of the project objectives to the Technical Area goals;
- The extent to which key barriers and risks are identified that must be overcome in order to achieve project success;
- The perceived novelty, innovation, uniqueness, and originality of the project objectives;
- The perceived technical value of the proposed research, development, or demonstration; and
- Extent to which the proposed work will demonstrate, compliment, or advance the current state-of-the-art for the relevant Technical Area.

Criterion 2: Technical Approach/Work Plan Weight: 25 percent

Specific considerations for this criterion are:

- The degree to which the technical approach is clearly stated, achievable and technically feasible in responding to the relevant Technical Area goals;
- The adequacy and thoroughness of critical success factors designed to overcome the identified barriers and risks essential to project success and the perceived relevance to the Technical Area goals;
- The viability of the proposed approach to achieve project objectives as evidenced by a logical task structure, realistic milestones, a reasonable schedule, and the adequacy and relevance of performance measures and deliverables. Also, the perceived likelihood that the project will achieve near-term (4 years or less) commercialization of the proposed system or technology; and
- The perceived credibility of the tools and management capabilities to mitigate project uncertainty and risks.

Criterion 3: Energy Efficiency/Displacement, Rural Economic Development, Environmental Benefits Weight: 25 percent

Specific considerations for this criterion are:

- The extent to which the estimated benefits of the proposed technology compare favorably to existing technology(ies) or system(s) (e.g., Quantitative estimates for crude oil displacement or energy efficiency gains in product production must be provided. For example, emission reductions in tons of CO₂ released/day, or millions of gallons of conventional diesel fuel displaced per year, etc);
- The degree to which the cost to produce the targeted product(s), fuel(s), and/or power using the proposed technology compares favorably against existing best commercial technology;
- The extent to which the technology or product is compatible with existing infrastructure and end use applications, e.g. would end users or transporters/distributors have to make significant investments?

- The perceived value of the projected energy and/or economic benefits, especially considering the extent to which activities and/or technologies are protective of the environment, foster enterprise and community self-sufficiency, rural economic development, job creation, and the reduction in imported energy supplies;
- The extent to which public safety, environmental impacts and benefits (including status/evidence of permitting), and land sustainability issues in rural areas are adequately addressed. Of particular interest is the collection of data and the extent to which it can be used to gauge improvements in key sustainability areas, specifically soil quality, water use, generation/reduction of hazardous/toxic substances, air emissions; wastewater discharges; reductions in use of pesticides, herbicides and fertilizer; etc.;
- The credibility and adequacy of the life-cycle economic and environmental analysis.

Criterion 4: Technical, Management, and Facility Capabilities **Weight: 15 percent**

Specific considerations for this criterion are:

- The extent to which the credentials, capabilities, experience (technical and managerial), availability and performance record of key personnel demonstrate the Applicant's capability to achieve the stated project objectives;
- The perceived value of the type, quality, availability, and appropriateness of facilities, equipment, and supplies identified to carry out the proposed work;
- The perceived level of participation by project participants as evidenced by Letter(s) of Commitment and evidence of financial support (letter of credit, balance sheet, third-party support letter, etc.) for recipient cost share portion of project; and
- The extent to which beneficial collaboration across industry and academia is demonstrated through the proposed project.

Applicants are encouraged to read and understand the intent of each criterion before preparing their pre-application. It is the Applicant's responsibility to address each criterion as fully as possible within the 3 page limit of the pre-application project narrative.

B. Pre-Application Review and Selection Process

DOE and USDA/CREES will jointly perform the technical evaluation of all pre-applications, based on the criteria listed above. As part of their joint review, DOE and USDA/CSREES will determine whether (1) the Applicant is eligible for an award; (2) the information required by the announcement has been submitted; (3) all mandatory requirements are satisfied; and (4) the proposed project is responsive to the objectives of the Funding Opportunity Announcement (FOA).

Pre-applications that meet criteria (1) – (4) above, will undergo a merit review in accordance with the guidance provided in the "Department of Energy Merit Review Guide for Financial Assistance and Unsolicited Proposals." This guide is at <http://www.management.energy.gov/documents/meritrev.pdf>. The joint technical merit review is a scientific peer review process. DOE and USDA/CSREES will administer the scientific peer review of all pre-applications, based on the criteria listed above.

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.

As a result of this pre-application technical merit review, each Applicant will either be requested to submit a full application package or be removed from consideration for funding under this Announcement. In either case, a letter of explanation will be provided to each Applicant.

C. ANTICIPATED NOTICE OF SELECTION TO SUBMIT FULL APPLICATION

Date: March 30, 2009

PART VI – ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS

1. Administrative Requirements.

The administrative requirements and national policy requirements (e.g., “generally applicable requirements”) for Federal agency grants and cooperative agreements are governed by the awarding agency’s regulations.

DOE -The regulations at 10 CFR part 600 apply (See: <http://ecfr.gpoaccess.gov>), except for DOE grants made to FDP institutions. The FDP terms and conditions and DOE FDP agency specific terms and conditions are located on the National Science Foundation Web site at http://www.nsf.gov/awards/managing/fed_dem_part.jsp.

USDA/CSREES - The regulations at 7 CFR Part 3430 apply – USDA/CREES Competitive and Noncompetitive Nonformula Grant Programs - General Grant Administrative Provisions. However, other regulations (listed below) may also be applicable. These include, but are not limited to:

2 CFR Part 215—USDA implementation of OMB Circular A-110, Uniform Administrative Requirements for Grants and Other Agreements With Institutions of Higher Education, Hospitals, and Other Nonprofit Organizations.

7 CFR Part 1, subpart A—USDA implementation of the Freedom of Information Act.

7 CFR Part 3—USDA implementation of OMB Circular No. A-129 regarding debt collection.

7 CFR Part 15, subpart A—USDA implementation of Title VI of the Civil Rights Act of 1964, as amended.

7 CFR Part 331 and 9 CFR Part 121—USDA implementation of the Agricultural Bioterrorism Protection Act of 2002.

7 CFR Part 3015—USDA Uniform Federal Assistance Regulations, implementing OMB directives (i.e., OMB Circular Nos. A-21 and A-122, now codified at 2 CFR Parts 220 and 230) and incorporating provisions of 31 U.S.C. 6301-6308 (formerly the Federal Grant and Cooperative Agreement Act of 1977, Pub. L. No. 95-224), as well as general policy requirements applicable to recipients of Departmental financial assistance.

7 CFR Part 3017—USDA implementation of Governmentwide Debarment and Suspension (Nonprocurement) and 7 CFR Part 3021—Governmentwide Requirements for Drug Free Workplace (Grants).

7 CFR Part 3018—USDA implementation of Restrictions on Lobbying. Imposes prohibitions and requirements for disclosure and certification related to lobbying on recipients of Federal contracts, grants, cooperative agreements, and loans.

7 CFR Part 3052—USDA implementation of OMB Circular No. A-133, Audits of States, Local Governments, and Non profit Organizations.

7 CFR Part 3407—USDA procedures to implement the National Environmental Policy Act of 1969, as amended.

29 U.S.C. 794 (section 504, Rehabilitation Act of 1973) and 7 CFR Part 15b (USDA implementation of statute) —prohibiting discrimination based upon physical or mental handicap in Federally assisted programs.

35 U.S.C. 200 et seq. —Bayh Dole Act, controlling allocation of rights to inventions made by employees of small business firms and domestic nonprofit organizations, including universities, in Federally assisted programs (implementing regulations are contained in 37 CFR Part 401)..

2. 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 under Award Terms. The National Policy Assurances to DOE requires that costs be incorporated as award terms are located at

http://management.energy.gov/business_doe/business_forms.htm under Award Terms.

3. Intellectual Property Provisions.

Financial assistance intellectual property provisions for DOE and USDA/CSREES will be specified in the award documents for each project. 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. Intellectual property regulations applicable to USDA/CREES awards are described at <http://www.csrees.usda.gov/business/awards/intellprop.html>, including USDA/CREES use of Interagency Edison for the disclosure of inventions.

PART VII – REPORTING REQUIREMENTS

Reporting requirements for DOE awards are identified on the Federal Assistance Reporting Checklist, DOE F 4600.2, attached to the award agreement. The proposed Checklist for this program is http://management.energy.gov/business_doe/business_forms.htm.

Reporting requirements for USDA/CREES awards: Grantees are required to submit initial project information and annual and summary reports to USDA/CREES ' Current Research Information System (CRIS). The CRIS database contains narrative project information, progress/impact statements, and final technical reports that are made available to the public. For applications recommended for funding, instructions on preparation and submission of project documentation will be provided to the applicant by the agency contact. Documentation must be submitted to CRIS before USDA/CREES funds will be released. Project reports will be requested by the CRIS office when required. For more information about CRIS, visit <http://cris.csrees.usda.gov>.

PART VIII - QUESTIONS

A. PRE-APPLICATION QUESTIONS

Questions regarding the content of the announcement must be submitted through the “Submit Question” feature of the DOE Industry Interactive Procurement System (IIPS) at <http://e-center.doe.gov>. Locate the program announcement on IIPS and then click on the “Submit Question” button. Enter required information. You will receive an electronic notification that your question has been answered. DOE and USDA/CREES 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 relating to the registration process, system requirements, how an application form works, or the submittal process must be directed to Grants.gov at 1-800-518-4726 or support@grants.gov. DOE/CSREES cannot answer these questions.

PART IX - OTHER INFORMATION

A. MODIFICATIONS

Notices of any modifications to this announcement will be posted on Grants.gov and the DOE Industry Interactive Procurement System (IIPS). You can receive an email when a modification or an announcement message is posted by joining the mailing list for this announcement through the link in IIPS. When you download the application at Grants.gov, you can also register to receive notifications of changes through Grants.gov.

B. GOVERNMENT RIGHT TO REJECT OR NEGOTIATE.

DOE and CSREES reserve 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 and USDA/CREES 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. 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 or CSREES award. Specific regulations of each agency will be identified in the award documents for each project.

For DOE: 42 U.S.C. 5908 provides that title to such inventions vests in the United States, except where 35 U.S.C. 202 provides otherwise for nonprofit organizations or small business firms. However, the Secretary of Energy may waive all or any part of the rights of the United States subject to certain conditions. (See "Notice of Right to Request Patent Waiver" in paragraph G below.)

For CSREES: 37 CFR 401 - Rights to Inventions Made by Nonprofit Organizations and Small Business Firms under Government Grants, Contracts, and Co-operative Agreements and 7 CFR 3019.36 - Intangible Property section of Uniform Administrative Requirements For Grants And Agreements With Institutions Of Higher Education, Hospitals, And Other Nonprofit Organizations (which pertains to copyrights, patents, and inventions) provide guidance under this section. For more information, please refer to the following links:

<http://www.csrees.usda.gov/business/awards/intellprop.html>

http://www.csrees.usda.gov/business/pdfs/patents_copyrights.pdf

Rights in Technical Data. Normally, the government has unlimited rights in technical data created under a DOE or CSREES 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. For DOE, 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.

F. NOTICE OF RIGHT TO REQUEST PATENT WAIVER

For DOE, applicants may request a waiver of all or any part of the rights of the United States in inventions conceived or first actually reduced to practice in performance of an agreement as a result of this announcement, in advance of or within 30 days after the effective date of the award. Even if such advance waiver is not requested or the request is denied, the recipient will have a continuing right under the award to request a waiver of the rights of the United States in identified inventions, i.e., individual inventions conceived or first actually reduced to practice in performance of the award. Any patent waiver that may be granted is subject to certain terms and conditions in 10 CFR 784.

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

G. 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.

H. NOTICE OF RIGHT TO CONDUCT A REVIEW OF FINANCIAL CAPABILITY.

DOE and USDA/CSREES reserve 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).

REFERENCE MATERIAL

APPENDIX A – DEFINITIONS

“Advanced Biofuel” means fuel derived from renewable biomass other than corn kernel starch, including:

- (i) biofuel derived from cellulose, hemicellulose, or lignin;
- (ii) biofuel derived from sugar and starch (other than ethanol derived from corn kernel starch);
- (iii) biofuel derived from waste material, including crop residue, other vegetative waste material, animal waste, food waste, and yard waste;
- (iv) diesel-equivalent fuel derived from renewable biomass, including vegetable oil and animal fat;
- (v) biogas (including landfill gas and sewage waste treatment gas) produced through the conversion of organic matter from renewable biomass;
- (vi) butanol or other alcohols produced through the conversion of organic matter from renewable biomass; and
- (vii) other fuel derived from cellulosic biomass.

“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. NOTE: Application is referred to as Proposal in IIPS.

“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 or CSREES 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.

“Biofuel” means a fuel derived from renewable biomass.

“Biobased Product” means

- (A) an industrial product (including chemicals, materials, and polymers) produced from biomass; or
- (B) a commercial or industrial product (including animal feed and electric power) derived in connection with the conversion of biomass to fuel.

“Bioenergy” means power generated in the form of electricity or heat using biomass as a feedstock.

“Biomass Conversion Facility” means a facility that converts or proposes to convert renewable biomass into:

- (A) heat;
- (B) power;
- (C) biobased products; or
- (D) advanced biofuels.

“ Biorefinery” means a facility (including equipment and processes) that:

- (A) converts renewable biomass into biofuels and biobased products; and
- (B) may produce electricity.

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

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

"Consortium (plural consortia)" means a 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 or CSREES official authorized to execute Awards on behalf of DOE or CSREES 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 or CSREES 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 either DOE or CSREES 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 or CSREES. The percentage of Applicant Cost Share is to be applied to the Total Project Cost (i.e., the sum of Applicant plus Federal Cost Shares) rather than to the Federal contribution alone.

“Central Contractor Registry (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 Grants.gov require that the organization first be registered in the CCR at <http://www.grants.gov/CCRRegister>.

“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 submit grant applications on behalf of their organization through Grants.gov.

“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.

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

“Fedconnect” means a new communications portal which DOE will implement in 2009 as a means to post notices and solicitations as well as to communicate award activity (funding and non-funding) to awardees through the lifecycle of an award. This new system is hosted by Compusearch. FedConnect will replace DOE’s current Industry Interactive Procurement System (IIPS). To register in FedConnect, go to <https://www.FedConnect.net/FedConnect/> or contact the FedConnect Helpdesk at support@fedconnect.net. Please note that the system functionality of FedConnect requires organizations to be registered with the CCR before https://www.fedconnect.net/FedConnect/PublicPages/FedConnect_Ready_Set_Go.pdf. registering with FedConnect. FedConnect ‘Quick Start Guide’;

“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, FOAs, or other names depending on the agency and type of program.

"Grant" means a Financial Assistance instrument used by the Government 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 or CSREES and the Applicant during the performance of the contemplated activity.

“Grants.gov” is the “storefront” web portal which allows organizations to electronically find and apply for competitive 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>

“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/>.

“Intermediate Ingredient or Feedstock” means a material or compound made in whole or in significant part from biological products, including renewable agricultural materials (including plant, animal, and marine materials) or forestry materials, that are subsequently used to make a more complex compound or product.

"Key Personnel" means 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 login to Grants.gov to assign privileges to the individual(s) authorized to submit applications 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.

"Project" means the set of activities described in an Application, State plan, or other document that is approved by DOE or CSREES 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 or CSREES, is financially accountable for the use of any Federal funds or property provided for the performance of the Project, and is legally responsible for carrying out the terms and condition of the award.

"Renewable Biomass" means materials, pre-commercial thinnings, or invasive species from National Forest System land and public lands (as defined in section 103 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1702)) that:

(A) are byproducts of preventive treatments that are removed—

- (1) to reduce hazardous fuels;
- (2) to reduce or contain disease or insect infestation; or
- (3) to restore ecosystem health;
- (4) would not otherwise be used for higher-value products; and
- (5) are harvested in accordance with—

(a) applicable law and land management plans; and

(b) the requirements for H. R. 2419—383

(i) old-growth maintenance, restoration, and management direction of paragraphs (2), (3), and (4) of subsection (e) of section 102 of the Healthy Forests Restoration Act of 2003 (16 U.S.C. 6512); and

(ii) large-tree retention of subsection (f) of that section; or

(B) any organic matter that is available on a renewable or recurring basis from non-Federal land or land belonging to an Indian or Indian tribe that is held in trust by the United States or subject to a restriction against alienation imposed by the United States, including:

(1) renewable plant material, including:

- (a) feed grains;
- (b) other agricultural commodities;
- (c) other plants and trees; and
- (d) algae; and

(2) waste material, including—

- (a) crop residue;
- (b) other vegetative waste material (including wood waste and wood residues);

- (c) animal waste and byproducts (including fats, oils, greases, and manure); and
- (d) food waste and yard waste.

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

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

"Sustainability" means an integrated system of plant and animal production practices having a site-specific application that will over the long term: satisfy human food and fiber needs; enhance environmental quality and the natural resource base upon which the agricultural economy depends; make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls; sustain the economic viability of farm operations; enhance the quality of life for farmers and society as a whole.

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

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

"Transportation fuel" means fuel for use in motor vehicles, motor vehicle engines, nonroad vehicles, or nonroad engines (except for ocean-going vessels).

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.

- 1. 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.
- 2. 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
- Birthday cards
- Birthday emails
- Medical information pertaining to work status (i.e. individual A is out sick today)
- 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 – DETAILED DESCRIPTIONS OF TECHNICAL AREAS

1. Feedstocks Development through the development of crops and cropping systems relevant to production of raw materials for conversion to biobased fuels and biobased products, including:

- Development of advanced and dedicated crops with desired features, including enhanced productivity, broader site range, low requirements for chemical inputs, and enhanced processing;
- Advanced crop production methods to achieve the features described in paragraph 1 above;
- Feedstock harvest, handling, transport, and storage; and
- Strategies for integrating feedstock production into existing managed land.

Applications are invited for research, development, and demonstration projects that promote feedstock production through the development of crops and cropping systems relevant to production of raw materials for conversion to biobased fuels and biobased products. Biomass feedstocks of interest include agricultural and forest resources. Biomass feedstock development and production efforts should focus on improving quality, reducing raw material costs, enhancing the productivity, and ensuring agronomic and silvicultural methods for sustainable production. This may include development of advanced and dedicated crops with desired features, including enhanced productivity, broader site range, low chemical input requirements and enhanced processing.

Projects of interest include, but are not limited to, those that develop appropriate agriculture and forest production/management technologies and systems; identify and evaluate innovative equipment designs and systems to produce, harvest, recover, and transport biomass; or develop tools which land managers and community developers can use to evaluate the technical and economic viability of biomass production systems or to manage these systems more efficiently. Tools should integrate management, harvesting, and processing technologies and methods with economic analyses of utilization options for bioenergy, biofuels, and biobased products.

Areas of interest include:

- Scientific and technological breakthroughs to overcome production barriers and enhance economic viability.
- Substantive development and demonstration of known and adapted technologies for effective and economical biomass feedstock production and use.
- Comprehensive descriptive and analytical understanding of methods and costs of management, collection, handling, primary processing, and transportation of primary feedstocks.
- Sustainable production and harvesting systems and methods that protect or enhance the site and surrounding landscape, including the long-term soil productivity, water, and other ecological and environmental resources; collection of data generated from these systems.
- Guidelines, tools, and management systems that provide a basis for decisions on land use, production, and technology application for integrated resource management and biomass use.
- Tools that aid land managers and community developers in evaluating the technical and economic viability of biomass production, markets, and revenue streams for local areas.

2. Biofuels and Biobased Products Development through developing technologies for converting renewable biomass into end products or intermediates that can subsequently be converted into biobased fuels and biobased products.

The following url addresses provide links to the Office of the Biomass Program's Multiyear Program Plan for 2008 for the biochemical and thermochemical conversion platforms. An applicant should refer to the barriers outlined in these documents as a basis for the proposed R&D. Proposed R&D should be able to clearly address the mitigation of the barriers listed in the MYPP and identified in the application.

Program wide goals and objectives:

http://www1.eere.energy.gov/biomass/pdfs/biomass_program_mypp.pdf

Biochemical:

<http://obpreview07.govtools.us/biochem/documents/BC%20Conversion%20MYPP%2007.pdf>

Thermochemical:

http://obpreview07.govtools.us/thermochem/documents/TC%20Conversion%20MYPP%20Section_6-25.doc

Examples of subtopics of interest to the program are described below:

Biochemical

Pretreatment Technologies

1. Understanding the impact of pretreatment processes (both biological and chemical) on cell wall deconstruction and its impact on producing fermentable sugars for advanced biofuels production

Hydrolysis and Saccharification Technologies that enhance advanced biofuels production

1. Regulation of the biosynthesis of cellulases and other biomass-degrading enzymes/proteins including understanding the rate limiting steps in these enzymatic processes
2. Structure-function relationship of the biomass-degrading enzyme systems or complexes
3. Understanding the synergism among biomass-degrading enzymes that improves overall hydrolysis and saccharification processes
4. Increasing enzyme stability under process conditions (T, pressure, solvents, pH, inhibitors, etc.)

Fermentation Technologies for advanced biofuels

1. Discovery and initial characterization and development of robust microorganisms tolerant to the stringent process conditions involved in pretreated and hydrolyzed biomass (pH, T, inhibitory compounds, etc.)
2. Improving catabolic and anabolic pathways within fermentative organisms to produce advanced biofuels including increasing the rate of fermentation, tolerance to end-product inhibition, and the improved production of single, biofuel products.

Advanced bioprocessing technologies

1. Improvements in consolidated bioprocessing
2. Novel approaches using solid state fermentations
3. Use of immobilized enzymes and/or membrane based reactors for improved hydrolysis and fermentation of biomass A1 components

Advanced lipid production from algae

This topic area is aimed at research and development into algae as a source of feedstock for lipid production. Discovery of new algal species is not an area of interest at this time. The work proposed must meet the following criteria:

- Show potential for integration into an integrated biorefinery.
- Feedstock must have a fatty acid profile suitable for the end use.
- Must address ways in which to make the processing technology cost effective enough to become commercially viable.
- Should address at least one of the following barriers as it impacts cost and performance effectiveness:
 - a. Algae growth sensitivity to temperature.
 - b. Costs associated with algae production.
 - c. Robustness of algal organisms from the laboratory to operating in the field (controlled systems, open ponds, etc. where the ability to withstand unregulated field conditions, resistance to contamination, and maintaining the genetic stability and lipid productivity of algal species is addressed).
 - d. Productivity of mass algal production systems.
 - e. Oil extraction systems for algae.
 - f. Purification of neutral lipids.
 - g. Added value for residual biomass.
 - h. Life cycle analysis.
 - i. Assessment of water requirements (source, recycle, chemistries and evaporation issues).
 - j. CO₂ availability and delivery.

Thermochemical and Chemical Conversions

Thermochemical

Gasification:

1. Develop detailed and simplified kinetics models to address the understanding of gasification processes which could be used to develop new hardware. Include the effect of pressure, feedstocks, particle size, and residence time on process performance.
2. Improving the selectivity, yields and productivity of syngas to alcohol catalyts.

Pyrolysis:

1. Develop the fundamental understanding of the relationship between biomass feedstock and processing conditions (heat transfer rate, residence time, pressure, and temperature) to the distribution of compounds in the final fast pyrolysis oil. This could include insights on how to reject oxygen as carbon oxides as well as water.
2. Develop a fundamental understanding of the relationship between the chemistry of fast pyrolysis oil and its propensity to form carbonaceous deposits when undergoing hydroprocessing (hydrotreating and hydrocracking) using generally accepted catalyts and operating conditions¹. Influence of reactor metallurgy (stainless and high nickel alloys) in the coke formation process is also of interest in this topic area.

¹ These catalyts and conditions are broadly outlined in a recent paper published in *Energy & Fuels* 2007, 21, 1792-1815, titled "Historical Developments in Hydroprocessing Bio-oils" and this document should be used as a reference for establishing the generally accepted catalyts and operating conditions

Chemical

R&D in the following areas related to chemically converting biomass components - carbohydrates, lignin based molecules, and bio-oils (please see the definitions in the criteria to see what is excluded) – into advanced Biofuels.

1. Tolerance to inhibitory compounds resulting from biomass pretreatments including acid salts.
2. Reduction at mild conditions (atmospheric pressure, low T, etc.)
3. Selective dehydrations without side reactions.
4. Developing catalysts specific for cleaving C-O and C-C bonds in biomass components.
5. Cleavage of C-N bonds while preserving molecular structure.

For example, a chemical transformation of a biologically produced intermediate to produce an advanced biofuel would represent a hybrid biological/chemical conversion process that would be of interest. The reverse is also true – a biological conversion of a chemically produced intermediate would be of interest.

Biobased Products

The program seeks technologies relevant to production of a range of biobased products (including chemicals, animal feeds, and co-generated power) that eventually can increase the feasibility of fuel production in a biorefinery, including:

- Catalytic processing to biobased products;
- cogeneration of power in biochemical or thermochemical systems;
- Product recovery;
- Power production technologies; and
- Integration into existing biomass processing facilities, including starch ethanol plants, paper mills, and power plants.

Applications are invited for research, development, and demonstrations of technologies that would result in product diversification through technologies relevant to production of a range of biobased products (including chemicals, animal feeds and cogenerated power) that eventually can increase the feasibility of fuel production in a biorefinery, including those that also:

- Enable the conversion, via biological, thermal, catalytic or chemical means, of agricultural and forest biomass feedstocks into biobased products.
- Improve the performance or commercial viability of biobased products and coproducts.
- Improve the potential for developing rural based processing and manufacturing of biobased products.
- Demonstrate commercial relevance of the technology, its expected marketability, and its potential commercial viability for processing and manufacturing biobased products.

Areas of interest include:

- Develop new technologies that would significantly decrease the cost and improve the energy efficiency of converting biomass into sugars for subsequent conversion to marketable fuels, chemicals or polymers.
- Develop new technologies that would significantly decrease the cost and improve the energy efficiency of converting syngas into marketable chemicals.
- Develop new technologies that would significantly decrease the cost and improve the energy efficiency of producing methane or hydrogen from biomass.

- Develop new technologies that would significantly improve the performance or decrease the cost and improve the energy efficiency of producing new, marketable products from biomass.
- Develop new technologies that would significantly improve the performance or decrease the cost and improve the energy efficiency of producing products from the hemicellulose or lignin fractions of biomass.
- Develop new technologies for converting bio-based fats and oils to marketable fuels, chemicals or polymers.

3. Biofuels Development Analysis for the application of biomass technologies in accordance with realization of improved economic and environmental sustainability and environmental quality, cost effectiveness, security, and rural economic development, usually featuring system-wide approaches taking into consideration the potential use of Federal land.

APPENDIX D: SUSTAINABILITY GUIDANCE

The purpose of this Appendix is to provide Applicants an understanding of what statute and policy on sustainability applies to this Funding Opportunity Announcement (FOA) to help them address sustainable development in their Pre-applications. For applicants that are invited to submit Full Applications, further guidance on sustainability indicators will be provided.

For the purposes of this FOA, the USDA/CSREES and DOE are following Executive Order 13423 and U.S. Code Title 7, Section 3101, which is repeated below (See Appendix A – Definitions).

Executive Order 13423, entitled *Strengthening Federal Environmental, Energy, and Transportation Management*, dated January 24, 2007, sets forth policy for Federal agencies to “conduct their environmental, transportation and energy-related activities under the law in support of their respective missions in an environmentally, economically and fiscally sound, integrated, continuously improving, efficient, and *sustainable* [emphasis added] manner. The order defines “sustainable” to mean: “. . . to create and maintain conditions, under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic, and other requirements of present and future generations of Americans.

U.S. Code, Title 7, Section 3101 - “Sustainability” means an integrated system of plant and animal production practices having a site-specific application that will over the long term: satisfy human food and fiber needs; enhance environmental quality and the natural resource base upon which the agricultural economy depends; make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls; sustain the economic viability of farm operations; enhance the quality of life for farmers and society as a whole.

In principle, to be considered sustainable, nature’s resources must only be used at a rate at which they can be replenished naturally.

APPENDIX E:
**MINIMUM REQUIREMENTS FOR FULL APPLICATIONS AND SELECTION OF AWARDEES
FOR JOINT FY 2009 BIOMASS RESEARCH AND DEVELOPMENT INITIATIVE**

The solicitation for full applications, when it is made available via Grants.gov, will contain all of the following information, as well as detailed instructions for applicants on completing and submitting the required forms. However, in the interest of disclosing as much helpful information as possible to those considering submitting pre-applications to the Biomass Research and Development Initiative, we are making a few key sections of the solicitation for full applications available at this time. These are:

- **Content and Form of Application Submission**
 - **Full Application Review Requirements**
 - **General Award Administration Information**
 - **Use of Funds; Changes**
-

Content and Form of Application Submission

For USDA/CREES, this program will be listed in the Catalog of Federal Domestic Assistance (CFDA) under 10.312. When it is made available on Grants.gov, the solicitation for full applications will be associated with this CFDA number. Only electronic applications may be submitted via Grants.gov to CSREES in response to this RFA. When the solicitation for full applications is made available, invited applicants will be able to download and submit the following required forms via Grants.gov

- **SF 424 R&R Cover Sheet**
- **R&R Other Project Information Form**
- **R&R Senior/Key Person Profile
(Expanded)**
- **Project/Performance Site Location**
- **R&R Personal Data (Optional)**
- **R&R Budget**
- **CSREES Supplemental Information
Form**

The Project Narrative portion of the full application must not exceed 25 pages, including cover page, table of contents, charts, graphs, maps, photographs, and other pictorial presentations, when printed using standards 8.5" by 11" paper with 1 inch margins (top, bottom, left, and right). The font must not be smaller than 11 point. Do not include any internet addresses (URLs) that provide information necessary to review the application. The Project Narrative must: 1) clearly identify the biomass to biofuels/bioenergy/bio-based products value chain elements and the scale addressed by the proposed work; 2) include a clear, concise statement of the specific objectives/aims of the proposed work; 3) address each of the evaluation criterion and sub-criterion listed below.

Full Application Review Requirements

Each full application will be evaluated in a 2-part process. First, each full application will be screened to ensure that it meets the administrative requirements as set forth in this RFA. Second, full applications that meet these requirements will be technically evaluated by a review panel.

Reviewers will be selected based upon training and experience in relevant scientific, extension, or education fields, taking into account the following factors: (a) The level of relevant formal scientific, technical education, or extension experience of the individual, as well as the extent to which an individual is engaged in relevant research, education, or extension activities; (b) the need to include as reviewers experts from various areas of specialization within relevant scientific, education, or extension fields; (c) the need to include as reviewers other experts (e.g., producers, range or forest managers/operators, and consumers) who can assess relevance of the applications to targeted audiences and to program needs; (d) the need to include as reviewers experts from a variety of organizational types (e.g., colleges, universities, industry, state and Federal agencies, private profit and non-profit organizations) and geographic locations; (e) the need to maintain a balanced composition of reviewers with regard to minority and female representation and an equitable age distribution; and (f) the need to include reviewers who can judge the effective usefulness to producers and the general public of each application.

Evaluation or Merit Review Criteria

Applicants will be required to identify the Technical Area(s) they are applying for and whether they are proposing Research, Development or Demonstration projects. The following criteria will be used to evaluate Full applications. Weight percentages for each area are as follows:

Criterion 1: Technical Relevance and Merit

Weight: 35 percent

Specific considerations are:

- Relevance and alignment of project objectives to technical area goals;
- Extent to which key barriers and risks are identified that must be overcome in order to achieve project success;
- Novelty, innovation, uniqueness, and originality of project objectives;
- Technical value of proposed research, development, or demonstration; and
- Extent to which proposed work will demonstrate, compliment, or advance current state-of-the-art for relevant Technical Area.

Criterion 2: Technical Approach/Work Plan**Weight: 25 percent**

Specific considerations are:

- Degree to which technical approach is clearly stated, achievable and technically feasible in responding to relevant Technical Area goals;
- Adequacy and thoroughness of critical success factors designed to overcome identified barriers and risks essential to project success and relevance to Technical Area goals;
- Viability of proposed approach to achieve project objectives as evidenced by a logical task structure, realistic milestones, a reasonable schedule, and adequacy and relevance of performance measures and deliverables. Also, likelihood that project will achieve near-term (4 years or less) commercialization of proposed system or technology; and
- Credibility of tools and management capabilities to mitigate project uncertainty and risks.

Criterion 3: Energy Efficiency/Displacement, Rural Economic**Development, and Environmental Benefits****Weight: 25 percent**

Specific considerations are:

- Extent to which estimated benefits of proposed technology compare favorably to existing technology(ies) or system(s) (e.g., Quantitative estimates for crude oil displacement or energy efficiency gains in product production must be provided. For example, emission reductions in tons of CO₂ released/day, or millions of gallons of conventional diesel fuel displaced per year, etc);
- Degree to which cost to produce targeted product(s), fuel(s), and/or power using proposed technology compares favorably against existing best commercial technology;
- Extent to which technology or product is compatible with existing infrastructure and end use applications, e.g., would end users or transporters/distributors have to make significant investments?
- Value of projected energy and/or economic benefits, especially considering the extent to which activities and/or technologies are protective of environment, foster enterprise and community self-sufficiency, rural economic development, job creation, and reduction in imported energy supplies;
- Extent to which public safety, environmental impacts and benefits (including status/evidence of permitting), and land sustainability issues in rural areas are adequately addressed. Of particular interest is extent to which sustainability indicators would be used to gauge improvements in key sustainability areas, such as water use, generation/reduction of hazardous/toxic substances, air emissions; wastewater discharges; reductions in use of pesticides, herbicides and fertilizer; etc.;
- Credibility and adequacy of life-cycle economic and environmental analysis.

Criterion 4: Technical, Management, and Facility Capabilities**Weight: 15 percent**

Specific considerations for this criterion are:

- Extent to which credentials, capabilities, experience (technical and managerial), availability and performance record of key personnel demonstrate Applicant's capability to achieve stated project objectives;
- Value of type, quality, availability, and appropriateness of facilities, equipment, and supplies identified to carry out proposed work;
- Level of participation by project participants as evidenced by Letter(s) of Commitment and evidence of financial support (letter of credit, balance sheet, third-party support letter, etc.) for recipient cost share portion of project; and
- Extent to which beneficial collaboration across industry and academia is demonstrated through proposed project.

Special Considerations

For all full applications, Section 9008(e)(6)(iii) of the Farm Bill of 2008 identifies the following technical "Special Considerations" to be used when ranking applications.

- Involve a consortia of experts from multiple institutions;
- Encourage the integration of disciplines and application of the best technical resources; and
- Increase the geographic diversity of demonstration projects.

Other Selection Factors

For full applications, DOE and USDA/CREES will conduct independent program policy factor reviews DOE's will be conducted by DOE Headquarters (HQ) for consideration by the DOE Selection Official. For applications selected for award by DOE, additional program policy factors will include:

- Balance of the overall portfolio of DOE investments in biomass research and development and relevance to the specific DOE barriers and pathways as outlined in the Program Multi-year Program Plan:
(http://www1.eere.energy.gov/biomass/pdfs/biomass_program_mypp.pdf)
- Cost share above the minimum required.

For applications selected for award by USDA/CREES, additional program policy factors will include:

- Diversity of funded feedstocks and conversion technologies
- Geographic diversity of research and development projects, as well as demonstration projects
- Balance among the value chain components
- Balanced portfolio of projects that contribute to the implementation of the Research, Education, and Extension Strategic Energy Plan
(http://www.ree.usda.gov/news/bead/USDA_REE_strat_plan.pdf)

General Award Administration Requirements

Within the limit of funds available for such purpose, the awarding official of CSREES shall make grants to those responsible, eligible applicants whose applications are judged most meritorious under the procedures set forth in this RFA. The date specified by the awarding official of CSREES as of the effective date of the grant shall be no later than September 30 of the Federal fiscal year in which the project is approved for support and funds are appropriated for such purpose, unless otherwise permitted by law. It should be noted that the project need not be initiated on the grant effective date, but as soon thereafter as practical so that project goals may be attained within the funded project period. All funds granted by CSREES under this RFA shall be expended solely for the purpose for which the funds are granted in accordance with the approved application and budget, the regulations, the terms and conditions of the award, the applicable Federal cost principles, and the Department's assistance regulations.

To view Standard Award Terms and Conditions USDA/CREES intends to utilize for Biomass Research and Development Awards issued in FY 2009: see
<http://www.csrees.usda.gov/business/awards/awardterms.html>.

Use of Funds; Changes

1. Delegation of Fiscal Responsibility

Unless the terms and conditions of the award state otherwise, the awardee may not in whole or in part delegate or transfer to another person, institution, or organization the responsibility for use or expenditure of award funds.

2. Changes in Project Plans

a. The permissible changes by the awardee, PD(s), or other key project personnel in the approved project shall be limited to changes in methodology, techniques, or other similar aspects of the project to expedite achievement of the project's approved goals. If the awardee or the PD(s) is uncertain as to whether a change complies with this provision, the question must be referred to the Authorized Departmental Officer (ADO) for a final determination. The ADO is the signatory of the award document, not the program contact.

b. Changes in approved goals or objectives shall be requested by the awardee and approved in writing by the ADO prior to effecting such changes. In no event shall requests for such changes be approved which are outside the scope of the original approved project.

c. Changes in approved project leadership or the replacement or reassignment of other key project personnel shall be requested by the awardee and approved in writing by the ADO prior to effecting such changes.

d. Transfers of actual performance of the substantive programmatic work in whole or in part and provisions for payment of funds, whether or not Federal funds are involved, shall be requested by the awardee and approved in writing by the ADO prior to effecting such transfers, unless prescribed otherwise in the terms and conditions of the award.

e. The project period may be extended by CSREES without additional financial support, for such additional period(s) as the ADO determines may be necessary to complete or fulfill the purposes of an approved project, but in no case shall the total project period exceed five years. Any extension of time shall be conditioned upon prior request by the awardee and approval in writing by the ADO, unless prescribed otherwise in the terms and conditions of award.

f. Changes in Approved Budget: Unless stated otherwise in the terms and conditions of award, changes in an approved budget must be requested by the awardee and approved in writing by the ADO prior to instituting such changes if the revision will involve transfers or expenditures of amounts requiring prior approval as set forth in the applicable Federal cost principles, Departmental regulations, or award.