

**FINANCIAL ASSISTANCE
FUNDING OPPORTUNITY ANNOUNCEMENT**



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

IN PARTNERSHIP WITH U.S. DEPARTMENT OF AGRICULTURE

Biomass Research And Development Initiative

Funding Opportunity Number: DE-PS36-06GO96002P

Announcement Type: Initial

CFDA Number: 81.087 Renewable Energy Research and Development

Issue Date: 11/02/2005

Letter of Intent Due Date: 11/22/2005

Pre-Application Due Date: 12/20/2005 at 8:00 PM Eastern Time

Application Due Date: 04/03/2006 at 8:00 PM Eastern Time

NOTE: NEW REQUIREMENTS FOR GRANTS.GOV

Where to Submit

Applications must be submitted through Grants.gov to be considered for award.

Registration Requirements

There are several one-time actions you must complete in order to submit an 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/assets/OrganizationRegCheck.doc> 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 14 days to complete these requirements. It is suggested that the process be started as soon as possible.

Questions

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. Part VII of this announcement explains how to submit other questions to the Department of Energy (DOE).

Application Receipt Notices

After an application is submitted, the Authorized Organization Representative (AOR) will receive a series of four e-mails. It is extremely important that the AOR watch for and save each of the emails. It may take up to two (2) business days from application submission to receipt of email Number 2. You will know that your application has reached DOE when the AOR receives email Number 4. You will need the Submission Receipt Number (email Number 1) to track a submission. The titles of the four 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

VERY IMPORTANT – Download PureEdge Viewer

In order to download the application package, you will need to install PureEdge Viewer. This small, free program will allow you to access, complete, and submit applications electronically and securely. For a free version of the software, visit the following web site:

<http://www.grants.gov/DownloadViewer>.

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PART I – FUNDING OPPORTUNITY DESCRIPTION

The U.S. Department of Energy (DOE) and the U.S. Department of Agriculture (USDA) jointly solicit applications for financial assistance addressing research and development of biomass based products, bioenergy, biofuels and related processes. This funding opportunity announcement, herein referred to as the “Announcement,” is intended to promote greater innovation and development related to biomass, and to support the Biomass Research Development Act of 2000, the Healthy Forest Restoration Act of 2003, the Energy Policy Act of 2005, and Federal policy calling for greater use of biomass-based products, feedstock production, and processing and conversion.

This joint USDA/DOE announcement for FY06 reflects the technical areas identified in the Biomass Research and Development Act of 2000 as amended by the Energy Policy Act of 2005. These technical areas will assist DOE and USDA in developing and maintaining a balanced portfolio of activities under the Federal Government’s Biomass program to effectively advance cost effective utilization of biomass for the production of biobased fuels and products.

1. Legislative Authority.

Collaboration between DOE and USDA on a Biomass Research and Development Initiative is directed under various statutory authorities, primarily the Biomass Research and Development Act of 2000, and as amended by Title IX of the Farm Security and Rural Investment Act of 2002 (P.L. 107-171) and Title II of the Healthy Forest Restoration Act of 2003 (P.L. 108-148) as well as Titles XX through XXII of the Energy Policy Act of 1992 (P.L. 102-486) and the Energy Policy Act of 2005 (P.L. 109-58; Section 941).

2. General Information

The Energy Policy Act of 2005 sets forth the following objectives and purposes for the Biomass Research and Development Initiative under which this announcement is issued.

OBJECTIVES —The objectives of the Initiative are to develop—

- (1) technologies and processes necessary for abundant commercial production of biobased fuels at prices competitive with fossil fuels;
- (2) high-value biobased products—
 - (A) to enhance the economic viability of biobased fuels and power; and
 - (B) as substitutes for petroleum-based feedstocks and products; and
- (3) a diversity of sustainable domestic sources of biomass for conversion to biobased fuels and biobased products.

PURPOSES —The purposes of the Initiative are—

- (1) to increase the energy security of the United States;
- (2) to create jobs and enhance the economic development of the rural economy;
- (3) to enhance the environment and public health; and
- (4) to diversify markets for raw agricultural and forestry products.

DOE and USDA are, therefore, seeking applications to address the Technical Areas as set out in Section 307(d)(1) – (4) of the Biomass R&D Act of 2000 as amended by the Energy Policy Act of 2005. The Technical Areas are discussed in greater detail in Appendix C. The Technical

Areas defined in the Energy Policy Act of 2005, and listed here, are the **only** eligible topic areas under this Announcement. **Each individual application must address only one Technical Area.** However, an applicant may submit multiple, unique applications in order to respond to multiple topics or may submit multiple unique applications to a single topic area.

The Technical Areas are:

- 1) Feedstock Production through the development of crops and cropping systems relevant to production of raw materials for conversion to biobased fuels and biobased products.
- 2) Overcoming Recalcitrance of cellulosic biomass through developing technologies for converting cellulosic biomass into intermediates that can subsequently be converted into biobased fuels and biobased products.
- 3) 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.
- 4) Analysis that provides strategic guidance for the application of biomass technologies in accordance with realization of improved sustainability and environmental quality, cost effectiveness, security, and rural economic development, usually featuring system-wide approaches.

3. Application Process

A two-phase technical evaluation process will be used for applications submitted under this Announcement. **The first phase requires the applicant to submit a preliminary application (pre-application) which will be evaluated based on the four criteria discussed in section IV.B.2.ii.** 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 under this Announcement. In either case, a letter of explanation will be provided to each applicant. **The second evaluation phase will consist of a detailed review of all full application packages, based on the technical merit criteria and other selection factors discussed in Part V.**

4. Funding Considerations

Applications received under this Announcement will be considered independently for funding from DOE and USDA. However, successful applicants will not receive funding from both DOE and USDA for the same project. An applicant may submit multiple, unique applications for different topic areas, and thus receive funding from each agency.

Due to funding availability, it is likely that awards by DOE will be limited to Technical Area 2, overcoming recalcitrance of cellulosic biomass. DOE and USDA may, however, select proposals for award from any of the Technical Areas.

5. Additional Background

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

Biomass Research and Development Act of 2000 (Title III of the Agricultural Risk Protection Act of 2000, PL 106-224) http://www.bioproducts-bioenergy.gov/about/bio_act.asp

Revisions to the Biomass Research and Development Act of 2000, as included in Title IX of the Farm Security and Rural Investment Act of 2002 (PL 107-171) <http://www.nrcs.usda.gov/about/legislative/pdf/PLaw107171.pdf>

Revisions to the Biomass Research and Development Act of 2000, as included in Section 941 of the Energy Policy Act of 2005 (PL 109-58) <http://thomas.loc.gov/cgi-bin/bdquery/z?d109:HR00006:TOM:/bss/d109query.html>

Title II of the Healthy Forest Restoration Act of 2003 (PL 108-148) http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=108_cong_bills&docid=f:h1904enr.txt.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.bioproducts-bioenergy.gov/pdfs/FinalBiomassRoadmap.pdf>.

Appendix A of this document contains definitions of terms that are used in this Announcement

PART II – AWARD INFORMATION

A. TYPE OF AWARD INSTRUMENT.

- DOE anticipates awarding both grants and cooperative agreements under this program announcement. If it is determined that a cooperative agreement is the appropriate award instrument, the nature of the Federal involvement will be included in a special award condition.
- USDA anticipates awarding grants under this program announcement. Where DOE regulations and procedures are cited and USDA has equivalent regulations and procedures, USDA will use its regulations and procedures for its awards. If a Cooperative Agreement is the appropriate award instrument USDA can only pay 10% of indirect costs.

B. ESTIMATED FUNDING.

- Up to \$2 million in DOE funding and \$12 million in USDA funding is expected to be available for new awards under this announcement.

C. MAXIMUM AND MINIMUM AWARD SIZE.

- Ceiling (i.e., the maximum amount for an individual award made under this announcement): \$2 million
- Floor (i.e., the minimum amount for an individual award made under this announcement): \$250,000
- **D. EXPECTED NUMBER OF AWARDS.** DOE and USDA anticipate making a total of 10-20 awards under this announcement depending on the size of the awards.

E. ANTICIPATED AWARD SIZE

- The average award size for this program in FY 2004 was \$1.1 million. DOE and USDA expect the average award size to be similar under this announcement.

As directed in the Energy Policy Act of 2005 (P.S. 109-58, Section 941(e)), awards up to the amounts listed below will be made in each Technical Area (ref. I.2)

1. Feedstock Production: \$2,800,000
2. Overcoming Recalcitrance of Cellulosic Biomass: \$6,300,000
3. Product Diversification: \$4,200,000
4. Analysis for Strategic Guidance: \$700,000

F. PERIOD OF PERFORMANCE.

- DOE and USDA anticipate making awards with project periods that will run for up to 3 years.

G. TYPE OF APPLICATION

- DOE and USDA will accept **only new** applications under this Announcement.

PART III - ELIGIBILITY INFORMATION

A. ELIGIBLE APPLICANTS.

- All entities listed under Section 307(f) of the Biomass Research and Development Act of 2000 (P.L. 106-224), as amended by the Energy Policy Act of 2005 (Section 941 of P.L. 109-58), are eligible to apply, except nonprofit organizations described in section 501(c)(4) of the Internal Revenue Code of 1986 that engaged in lobbying activities after December 31, 1995. Eligible entities include:
 1. Institutions of higher education (as defined in section 102(a) of the Higher Education Act of 1965 (20 U.S.C. 1002(a))
 2. National Laboratories (as defined in Section 2 of the Energy Policy Act of 2005; P.L. 109-58);
 3. Federal research agencies;
 4. State research agencies;
 5. Private sector entities;
 6. Nonprofit organizations, other than 501(c)(4) organizations that engage in lobbying; or
 7. Consortia of 2 or more entities described in 1 through 6 above.
- Consortia are encouraged in order 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

- As directed under Section 307(g)(4) of the Biomass Research and Development Act of 2000 (P.L. 106-224), as amended by Section 941 of the Energy Policy Act of 2005 (P.L. 109-58), the cost share must be at least 20% of the total allowable costs for research, development and demonstration projects and 50% of the total allowable costs for commercial application projects and must come from non-Federal sources. The sum of the Government share, including FFRDC contractor costs if applicable, and the recipient share of allowable costs equals the total allowable cost of the project. (See 10 CFR part 600 for the applicable cost sharing requirements.)

The term "demonstration" is defined in P.L. 109-58 as follows: "The term 'demonstration' means demonstration of technology in a pilot plant or semi-works scale facility."

C. OTHER ELIGIBILITY REQUIREMENTS.

- **Federally Funded Research and Development Center (FFRDC) Contractors.** FFRDC applicants are eligible for an award under this announcement, or they may be proposed as a team member in both cases subject to the following guidelines:

Authorization for non-DOE/USDA FFRDCs. The Federal agency sponsoring the FFRDC contractor must authorize in writing the participation of the FFRDC contractor in the

proposed project and this authorization must be submitted with the application. The use of a FFRDC contractor must be consistent with the contractor's authority under its award. Authorization for DOE/USDA FFRDCs. The cognizant contracting officer for the FFRDC must authorize in writing the participation of a DOE/USDA FFRDC contractor in 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 and 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, when the FFRDC is not the prime recipient, will not normally be included in the award to a successful applicant. Usually, DOE/USDA will fund a DOE/USDA FFRDC contractor through the DOE field work proposal system and other FFRDC contractors through an interagency agreement with the sponsoring agency.

Cost Share. The applicant's cost share requirement will be based on the total cost of the project, including the applicant's and the FFRDC contractor's portions of the effort if any. If an FFRDC is the applicant, they are responsible for fulfilling the cost share requirement with non-Federal funds.

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.

PART IV – APPLICATION AND SUBMISSION INFORMATION

A. ADDRESS TO REQUEST APPLICATION PACKAGE.

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 CFDA and/or the funding opportunity number located on the cover of this announcement and then follow the prompts to download the application package. **NOTE:** You will not be able to download the Application Package unless you have installed PureEdge Viewer (See: <http://www.grants.gov/DownloadViewer>).

B. LETTER OF INTENT AND PRE-APPLICATION.

1. Letter of Intent.

- Applicants are requested to submit a letter of intent by November 22, 2005. This letter should include the name of the applicant, the title of the project, the Technical Area to which the application will apply, the name of the Project Director/Principal Investigator(s), the amount of funds requested, and a one-page abstract. Letters of intent will be used to organize and expedite the merit review process. Failure to submit such letters will not negatively effect a responsive application submitted in a timely fashion. The letter of intent should be sent by E-mail to gobiomass@go.doe.gov.

2. Pre-application.

- Pre-applications are required. You must complete the SF 424, attach your pre-application file in the block provided, and submit electronically through Grants.gov at www.Grants.gov.

i. Pre-application Format

The pre-application shall consist of a SF 424 “Application for Federal Assistance” form plus no more than three additional pages when printed single-sided. ONLY the SF-424 plus the three-page project summary, as described herein, are required for a pre-application – the additional forms described under Section IV.C are only required for applicants invited to submit full applications as a result of the pre-application review process (See Section IV.B.2.iii).

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.

a) SF 424 - Application for Federal Assistance.

Complete this form first to populate data in other forms. Complete all required fields in accordance with the pop-up instructions on the form. To activate the instructions, turn on the “Help Mode” (Icon with the pointer and question mark at the top of the form).

On the SF424 form, Applicants must complete Boxes 1, 2 and 5-18, checking “Non-construction” under “Pre-Application section of Box 1. Applicants must also indicate in Box 11, “Descriptive Title of Applicant’s Project,” the Technical Area to which the pre-application is directed. Technical Areas are listed in Part I.2 and described in more detail in Appendix C.

b) Other Attachments Form

Submit the following file with your pre-application and attach it to the Other Attachments Form. Click on “Add Mandatory Other Attachment” to attach the Pre-application narrative file.

Pre-application Narrative File - Mandatory Other Attachment

The project narrative must not exceed 3 pages, including charts, graphs, maps, photographs, and other pictorial presentations, when printed using standard 8.5” by 11” paper with 1 inch margins (top, bottom, left, and right). EVALUATORS WILL REVIEW ONLY THE NUMBER OF PAGES SPECIFIED IN THE PRECEDING SENTENCE. The font must not be smaller than 11 point. Do not include any Internet addresses (URLs) that provide information necessary to review the application. See Part VIII.D for instructions on how to mark proprietary application information. Save the information in a single file named “Project.pdf,” and click on “Add Mandatory Other Attachment” to attach.

The pre-application narrative should address the major aspects of the four technical evaluation criteria given below. The pre-application shall 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

Summary of Required Forms/Files

Your application must include the following documents:

Name of Document	Format	File Name
Application for Federal Assistance – SF424	PureEdge Form	N/A
Other Attachments Form: Attach the following files to this form:	PureEdge Form	N/A
Pre-application Narrative File	PDF	Project.pdf

ii. Pre-Application Evaluation Criteria

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

Criterion 1:	Technical Relevance and Merit	Weight: 30 percent
Criterion 2:	Technical Approach/Work Plan	Weight: 25 percent
Criterion 3:	Energy Efficiency/Displacement, Rural Economic Development, and Environmental Benefits	Weight: 25 percent
Criterion 4:	Technical, Management, and Facility Capabilities	Weight: 20 percent

More detailed descriptions of the technical merit criteria are given in Part V.A.2, and 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.

iii. Pre-Application Review Process

DOE and USDA will jointly perform the technical evaluation of all pre-applications, based on the criteria listed above. As a result of this pre-application 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. CONTENT AND FORM OF FULL APPLICATION – SF 424

Only applicants invited to submit a full application may apply for an award. There is no commitment by DOE or USDA to fund a specific number of full applications. Applicants are encouraged to present projects that have substantial technical merit and that address the Technical Areas and meet the criteria identified above. Projects ranging from fundamental, innovative and demonstration will all be considered.

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

1. SF 424 - Application for Federal Assistance.

Complete this form first to populate data in other forms. Complete all required fields in accordance with the pop-up instructions on the form. To activate the instructions, turn on the "Help Mode" (Icon with the pointer and question mark at the top of the form).

2. Other Attachments Form

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

Project Narrative File - Mandatory Other Attachment

The project narrative must not exceed 20 pages, including charts, graphs, maps, photographs, and other pictorial presentations, when printed using standard 8.5" by 11"

paper with 1 inch margins (top, bottom, left, and right). EVALUATORS WILL REVIEW ONLY THE NUMBER OF PAGES SPECIFIED IN THE PRECEDING SENTENCE. The font must not be smaller than 11 point. Do not include any Internet addresses (URLs) that provide information necessary to review the application. See Part VIII.D for instructions on how to mark proprietary application information. Save the information in a single file named "Project.pdf," and click on "Add Mandatory Other Attachment" to attach.

The project narrative must include:

- Cover Page: Cover page should include the name and type of organization, the Funding Opportunity Announcement Number, the project title and Technical Area which the project addresses (Technical Areas are listed in Part I.2 above and described in more detail in Appendix C), and both the technical and business points of contact for the applicant, showing the names, titles, addresses, telephone and facsimile numbers, and electronic mail addresses. (Note this page does not count against the narrative's specified page limit).
- Table of Contents: Table of contents should include page numbers corresponding to the elements outlined in these guidelines. (Note the table of contents does not count against the narrative's specified page limit).
- Project Objectives. This section should provide a clear, concise statement of the specific objectives/aims of the proposed project.
- Merit Review Criterion Discussion. This section should be formatted to address each of the merit review criterion and sub-criterion listed in Section V. A. Provide sufficient information so that reviewers will be able to evaluate the application in accordance with these merit review criteria. DOE and USDA WILL EVALUATE AND CONSIDER ONLY THOSE APPLICATIONS THAT ADDRESS SEPARATELY EACH OF THE MERIT REVIEW CRITERION AND SUB-CRITERION.
- Relevance and Outcomes/Impacts. This section should explain the relevance of the effort to the objectives in the program announcement and the expected outcomes and/or impacts.
- Project Timetable: This section should outline as a function of time, year by year, all the important activities or phases of the project, including any activities planned beyond the project period. Successful applicants must use this project timetable to report progress.
- Evaluation Phase: This section must include a plan and metrics to be used to assess the success of the project.

Project Summary/Abstract File

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

business information as the Department may make it available to the public. The project summary must not exceed 1 page when printed using standard 8.5" by 11" paper with 1" margins (top, bottom, left and right) with font not smaller than 11 point. Save this information in a file named "Summary.pdf," and click on "Add Optional Other Attachment" to attach.

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

You must provide a separate budget for each year of support requested and a cumulative budget for the total project period. Use the SF 424 A Excel, "Budget Information – Non Construction Programs" form on the Applicant and Recipient Page at <http://grants.pr.doe.gov>. You may request funds under any of the Object Class Categories as long as the item and amount are necessary to perform the proposed work, meet all the criteria for allowability under the applicable Federal cost principles, and are not prohibited by the funding restrictions in this announcement (See PART IV, G). Save the information in a single file named "SF424A.xls," and click on "Add Optional Other Attachment" to attach.

Budget Justification File

You must justify the costs proposed in each Object Class Category/Cost Classification category (e.g., identify key persons and personnel categories and the estimated costs for each person or category; provide a list of equipment and cost of each item; identify proposed subaward/consultant work and cost of each subaward/consultant; describe purpose of proposed travel, number of travelers and number of travel days; list general categories of supplies and amount for each category; and provide any other information you wish to support your budget). Provide the name of your cognizant/oversight agency, if you have one, and the name and phone number of the individual responsible for negotiating your indirect rates. If cost sharing is required, provide an explanation of the source, nature, amount and availability of any proposed cost sharing. Save this information in a single file named "Budget.pdf," and click on "Add Optional Other Attachment" to attach.

Subaward Budget File(s)

You must provide a separate budget (i.e., budget for each budget year and a cumulative budget) for each subawardee that is expected to perform work estimated to be more than \$100,000 or 50 percent of the total work effort (which ever is less). Use the SF 424 A Excel for Non Construction Programs or the SF 424 C Excel for Construction Programs. These forms are found on the Applicant and Recipient Page at <http://grants.pr.doe.gov>. Save each Subaward budget in a separate file. Use up to 10 letters of the subawardee's name (plus .xls) as the file name (e.g., ucla.xls or energyres.xls), and click on "Add Optional Other Attachment" to attach.

Certifications/Assurances for Use with SF 424 File

You must complete and provide the "Certifications and Assurances for Use with SF 424" form on the Applicant and Recipient Page at <http://grants.pr.doe.gov>. Submission of an electronic application through Grants.gov constitutes the submission of a signed document. Type the name of the person responsible for providing the certifications and assurances in the signature block and save as a pdf file. Do not submit a scanned copy of the form. Name the file "Certs.pdf," and click on "Add Optional Other Attachment" to attach.

EPACT Representation File

This program is covered under Title XX through XXIII of the Energy Policy Act (EPACT) of 1992 (See Part III. C, Other Eligibility Requirements). If an applicant is a business entity other than an organization of the type described in section 501(c)(3) of the Internal Revenue Code of 1954, it must provide an EPACT Representation if the amount of Federal funds requested is more than \$100,000. The EPACT Representation form is on the Applicant and Recipient Page at <http://grants.pr.doe.gov>. Submission of an electronic application through Grants.gov constitutes the submission of a signed document. The person responsible for providing the representation does not need to sign the document. Type their name in the signature block and save as a pdf file. Do not submit a scanned copy of the form. Name the file "EPACT.pdf," and click on "Add Optional Other Attachment" to attach.

State, local, and tribal governments, as well as 501(c)(3) organizations, do not need to complete an EPACT representation form.

Commitment Letters from Third Parties Contributing to Cost Sharing

The applicant must have firm funding commitment letters from third parties expected to contribute to cost sharing. At the time the application is submitted, the applicant must identify for each participant providing cost sharing: 1) the name of the organization; 2) the proposed dollar amount to be provided; 3) the amount as a percentage of the total project cost; and 4) the proposed cost sharing – cash, services, or property. For projects with multiple cost sharing partners, summarize the information in a table format. Provide the information in a single file named "CLTP" and click on "Add Optional Other Attachment" to attach.

Biographical Sketch File

Provide a biographical sketch for each key person proposed, including subawardees and consultants if they meet the definition of key person. A key person is any individual who contributes in a substantive, measurable way to the execution of the project. Save all biographical sketches in a single file named "bio.pdf" and click on "Add Optional Other Attachment" to attach. The biographical information for each person must not exceed 2 pages when printed on 8.5" by 11" paper with 1 inch margins (top, bottom, left, and right) with font not smaller than 11 point and must include:

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

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

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

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

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

Budget for DOE/NNSA Federally Funded Research and Development Center (FFRDC)

Contractor, if applicable If a DOE/NNSA FFRDC contractor is to perform any portion of the work, you must provide a DOE Field Work Proposal in accordance with the requirements in DOE Order 412.1 Work Authorization System. This order and the DOE Field Work Proposal form are available at <http://grants.pr.doe.gov>. Use up to 10 letters of the FFRDC name (plus .pdf) as the file name (e.g., lanl.pdf or anl.pdf), and click on “Add Attachments” in Field 11 to attach.

Authorization for Participation of a Federally Funded Research and Development Center (FFRDC) Contractor, if applicable.

If a FFRDC contractor is to perform any portion of the work, you must provide an authorization letter as described in Part III.C.

Provide

the information in a single file named using up to 6 letters of the FFRDC name (plus “auth.pdf” e.g. anlauth.pdf, laslauth.pdf) and click on “Add Optional Other Attachment” to attach.

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

Summary of Required Forms/Files

Your application must include the following documents:

Name of Document	Format	File Name
Application for Federal Assistance – SF424	PureEdge Form	N/A
Other Attachments Form: Attach the following files to this form:	PureEdge Form	N/A
Project Narrative File	PDF	Project.pdf
Project Summary/Abstract File	PDF	Summary.pdf
SF 424A File - Budget Information for Non-Construction Programs	Excel	SF424A.xls

Budget Justification	PDF	Budget.pdf
Subaward Budget File(s)	Excel	See Instructions
Reference Check on Federal Awards	PDF	Reference.pdf
Certifications/Assurances File	PDF	Certs.pdf
EPACT Representation	PDF	EPACT.pdf
Commitment Letters from Third Parties Contributing to Cost Sharing File, if applicable.	PDF	CLTP.pdf
Biographical Sketch File	PDF	Bio.pdf
Budget for FFRDC Contractor, if applicable	PDF	Name.pdf
Authorization for Participation of a FFRDC Contractor, if applicable	PDF	Nameauth.pdf
SF-LLL Disclosure of Lobbying Activities, if applicable.	PureEdge Form	N/A

D. SUBMISSIONS FROM SUCCESSFUL APPLICANTS.

- The Department anticipates that no additional submissions will be required. However, it reserves the right to request additional or clarifying information for any reason deemed necessary.

E. SUBMISSION DATES AND TIMES.

1. Pre-application Due Date.

Pre-applications must be received by December 20, 2005, not later than 8:00 PM Eastern Time.

2. Full Application Due Date. (by invitation only)

Only those applicants selected from the pre-application stage will be considered. Applications must be received by April 03, 2006, not later than 8:00 PM Eastern Time. You are encouraged to transmit your application well before the deadline. APPLICATIONS RECEIVED AFTER THE DEADLINE WILL NOT BE REVIEWED OR CONSIDERED FOR AWARD.

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

G. FUNDING RESTRICTIONS.

Cost Principles. Costs must be allowable in accordance with the applicable Federal cost principles referenced in 10 CFR part 600.

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 recipient's risk. DOE and USDA are 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.

H. OTHER SUBMISSION AND REGISTRATION REQUIREMENTS

1. Where to Submit.

APPLICATIONS MUST BE SUBMITTED THROUGH GRANTS.GOV TO BE CONSIDERED FOR AWARD. Submit electronic applications through the "Apply for Grants" function at www.Grants.gov. If you have problems completing the registration process or submitting your application, call Grants.gov at 1-800-518-4726 or send an email to support@grants.gov.

Registration Process You must COMPLETE the one-time registration process (all steps) before you can submit your first application through Grants.gov (See www.grants.gov/GetStarted). **We recommend that you start this process at least two weeks before the application due date.** It may take 14 days or more to complete the entire process. Use the Grants.gov Organizational Registration Checklists at <http://www.grants.gov/assets/OrganizationReqCheck.doc> to guide you through the process. **IMPORTANT:** During the CCR registration process, you will be asked to designate an E-Business Point of Contact (EBIZ POC). The EBIZ POC must obtain a special password called "Marketing Partner identification Number" (MPIN).

PART V - APPLICATION REVIEW INFORMATION

A. CRITERIA

1. Initial Review Criteria.

Prior to a comprehensive merit evaluation, DOE will perform an initial review to determine that (1) the applicant is eligible for an award and meets the minimum cost share requirements; (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.

2. Merit Review Criteria.

The following criteria will be used to evaluate applications. Weight percentages for each area are as follows:

Criterion	Weight
1: Technical Relevance and Merit	30
2: Technical Approach/Work Plan	25
3: Energy Efficiency/ Displacement, Rural Economic Development, and Environmental Benefits	25
4: Technical, Management, and Facility Capabilities	20

Applications will be reviewed in accordance with the following criteria: All timely applications that fulfill the minimum application requirements, as determined by the compliance review (described in the previous paragraph) will be eligible for comprehensive evaluation and will undergo the following evaluations by DOE and USDA. The first evaluation includes a *joint* technical merit review using a scientific peer review process. During the technical merit review, each application will be rated with a numerical score using the following technical rating criteria:

Criterion 1: Technical Relevance and Merit Weight: 30 percent

The technical merit of the application will be evaluated based on the extent to which the project, if successfully carried out, will address research, development, and demonstration activities for the biomass Technical Topic Areas as described in this Announcement.

Specific considerations for this criterion are:

- Clarity and relevance of the project objectives.
- Novelty, innovation, uniqueness, and originality of the project objectives.
- Technical merit of the proposed research, development, or demonstration.
- Extent to which the proposed work will demonstrate the current state of knowledge and/or technology.
- Extent to which the proposed work will complement or advance the current knowledge or technology for the stated objectives.

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

The technical approach will be evaluated based on the clarity and technical strength of the approach to achieve the project objectives, including the plan for each task and subtask, milestones and deliverables. Specific considerations for this criterion are:

- Technical feasibility of the proposed work.
- Adequacy and completeness of the proposed tasks.
- Clarity and completeness of the description of each activity necessary to complete the project.
- Likelihood of achieving project objectives through realistic milestones and logical task structure.
- Reasonableness of the schedule.
- Performance measures and milestones for evaluating progress with regard to key subtasks and/or deliverables.
- Identification and appropriateness of key decision points for mitigating potential problems.
- Process for monitoring and evaluating the project's progress and performance.

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

The overall projected benefits will be evaluated in terms of: improvements in energy efficiency and economics of the biomass technology, oil displacement, rural economic development, and environmental benefits. Specific considerations for this criterion are:

- Estimated benefits in comparison to existing technology or system (e.g., crude oil displacement or energy efficiency gains in product production).
- Comparison of the cost to produce the targeted product(s), fuel(s), and power, versus existing best commercial technology.
- Anticipated energy and/or economic benefits, including those related to enterprise and community self-sufficiency, rural economic development, job creation, and reduction in imports.
- Potential for the proposed work to provide sufficient benefits in terms of cost reduction, risk reduction, or performance improvement to justify the cost of the system being investigated.
- Potential for near-term implementation of the proposed system or technology.
- Incorporation of activities and technologies that are protective of the environment.
- Extent to which public safety, environmental concerns, and land sustainability issues in rural areas are addressed.

Criterion 4: Technical, Management, and Facility Capabilities **Weight: 20 percent**

Technical and management qualifications of all participating organizations and key personnel, including subcontractors and consultants, will be evaluated with respect to their ability to carry out the proposed effort. The adequacy and appropriateness of the facilities planned for this work will also be considered. Specific considerations for this criterion are:

- Credentials, capabilities, experience (technical and managerial), performance record, and availability of the applicant and participants to comprehensively address all aspects of the proposed project.
- Soundness of the project management concept with respect to proposed tasks and organizational structure to achieve project objectives.
- Type, quality, availability, and appropriateness of facilities, equipment, and materials utilized to carry out the proposed work.
- Level of participation by project participants as evidenced by letter(s) of commitment.
- Extent of beneficial collaboration across industry and academia.
- Current or recent government contracts, grants, cooperative agreements, or other work by the applicant and/or participants in this or related fields.

The maximum score for all of the above technical rating criteria is 100 points.

3. Other Selection Factors.

There will be an independent program policy factor review conducted by DOE Headquarters (HQ) and USDA under their respective Topic Areas for consideration by the Selection Official.

For all Applications, the program policy factors will include the extent to which the proposed activity:

- creates continuously expanding opportunities for participants in existing biofuels production by seeking synergies and continuity with current technologies and practices, such as the use of dried distillers grains as a bridge feedstock;
- maximizes the environmental, economic, and social benefits of production of biobased fuels and biobased products on a large scale through life-cycle economic and environmental analysis and other means; and
- assesses the potential of Federal land and land management programs as feedstock resources for biobased fuels and biobased products, consistent with the integrity of soil and water resources and with other environmental considerations;
- involves a consortia of experts from multiple institutions;
- encourages the integration of disciplines and application of the best technical resources; and
- increases the geographic diversity of demonstration projects.

For proposals selected for award by DOE, additional program policy factors will include:

- Relevance to the specific DOE barriers and pathways as outlined in the Program Multi-year Program Plan: (http://www.eere.energy.gov/biomass/pdfs/multiyear_plan2004.pdf).
- Balance of the overall portfolio of DOE investments in biomass research and development.
- Level of cost sharing above the minimum requirement.

For proposals selected for award by USDA, additional program policy factors will include giving precedence to applications:

- Emphasizing near-term implementation and application to commercially viable biomass production, management, handling, processing, and manufacturing.
- Involving consortia that include Tribal entities.
- Addressing methods for biomass production, harvesting, handling, and utilization that are environmentally beneficial and cost effective.
- Exhibiting mobility and adaptability of economically viable and relatively small-scale biomass utilization technology.
- Improving rural-based processing and manufacturing of biobased products and power from biomass, including those that demonstrate the potential to stimulate revenue streams and economic improvement in rural areas.
- Developing, diversifying, and expanding renewable biomass products systems, leading to improved self-sufficiency for rural constituencies, including farmers, ranchers, rural communities and institutions, tribes, local governments, and businesses.

B. REVIEW AND SELECTION PROCESS.

1. Merit Review.

- Applications that pass the initial review will be subjected to a merit review in accordance with the guidance provided in the "Department of Energy Merit Review Guide for Financial Assistance and Unsolicited Proposals." This guide is available under Financial Assistance, Regulations and Guidance at <http://professionals.pr.doe.gov/ma5/ma-5web.nsf/?Open>.

2. Selection.

- The Selection Official will consider the merit review recommendation, program policy factors, and the amount of funds available.
- DOE reserves the right to conduct an independent third party review of financial capability for applicants that are selected for negotiation of award (including personal credit information of the principal(s) of a small business if there is insufficient information to determine financial capability of the organization).

3. Discussions and Award.

- The Government may enter into discussions with a selected applicant for any reason deemed necessary, including but not limited to: (1) the budget is not appropriate or reasonable for the requirement; (2) only a portion of the application is selected for award; (3) the Government needs additional information to determine that the recipient is capable of complying with the requirements in 10 CFR part 600; and/or (4) special terms and conditions are required. Failure to resolve satisfactorily the issues identified by the Government will preclude award to the applicant.
- C. ANTICIPATED NOTICE OF SELECTION AND AWARD DATES.
 - DOE and USDA anticipate notifying applicants selected for negotiation of award by June 05, 2006. Awards will be made no later than September 20, 2006.

PART VI - AWARD ADMINISTRATION INFORMATION

A. AWARD NOTICES.

- **1. Notice of Selection.**

DOE and USDA will notify applicants selected for award. This notice of selection is not an authorization to begin performance. (See Part IV.G with respect to the allowability of pre-award costs.)

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

- **2. Notice of Award.**

- A Notice of Financial Assistance Award issued by the contracting officer is the authorizing award document. It normally includes, either as an attachment or by reference: 1. Special Terms and Conditions; 2. Applicable program regulations, if any; 3. Application as approved by DOE/NNSA.; 4. Financial assistance regulations of the awarding agency (10 CFR part 600 for DOE; 7 CFR part 3015 and 3019 for USDA), or, for Federal Demonstration Partnership (FDP) institutions, the FDP terms and conditions; 5. National Policy Assurances To Be Incorporated As Award Terms; 6. Budget Summary; and 7. Federal Assistance Reporting Checklist, which identifies the reporting requirements.

B. 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 (10 CFR Part 600 for DOE (See: <http://ecfr.gpoaccess.gov>); 7 CFR part 3015 and 3019 for USDA), except for grants made to Federal Demonstration Partnership (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.

- **2. Special Terms and Conditions and National Policy Requirements.**

Special Terms and Conditions and National Policy Requirements.

The Special Terms and Conditions for Use in Most Grants and Cooperative Agreements are located at <http://grants.pr.doe.gov>. The National Policy Assurances To Be Incorporated As Award Terms are located at <http://grants.pr.doe.gov>.

Intellectual Property Provisions.

Financial assistance intellectual property provisions for USDA and DOE 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/techtrans/sipp_matrix.html.

Statement of Substantial Involvement.

- Either a grant or cooperative agreement may be awarded under this program announcement. If the award is a cooperative agreement, the DOE Specialist and DOE Project Officer will negotiate a Statement of Substantial Involvement prior to award.

C. REPORTING.

Reporting requirements are identified on the Federal Assistance Reporting Checklist, DOE F 4600.2, attached to the award agreement. See <http://www.go.doe.gov/PDFs/4600-2.pdf> for the proposed Checklist for this program.

PART VII - QUESTIONS/AGENCY CONTACTS

A. 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/NNSA 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/NNSA cannot answer these questions.

B. AGENCY CONTACT

Patrick Liles
pat.liles@go.doe.gov
303-275-4754 (FAX)

PART VIII - 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 USDA 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 or USDA shall have the right to use or disclose the data herein to the extent provided in the award. This restriction does not limit the government’s right to use or disclose data obtained without restriction from any source, including the applicant.”

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

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

E. EVALUATION AND ADMINISTRATION BY NON-FEDERAL PERSONNEL.

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

F. INTELLECTUAL PROPERTY DEVELOPED UNDER THIS PROGRAM.

Patent Rights. The government will have certain statutory rights in an invention that is conceived or first actually reduced to practice under a DOE or USDA award. Specific regulations of each agency will be identified in the award documents for each project.

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

Rights in Technical Data. Normally, the government has unlimited rights in technical data created under a Federal Agency 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 the Government’s own needs or to insure the commercialization of technology developed under a Government agreement. The rights in data applicable to the various types of DOE financial assistance recipients are contained in 10 CFR 600 and for USDA in 7 CFR part 3015 and 3019.

- Special Protected Data Statutes. This program is covered by a special protected data statute. The provisions of the statute provide for the protection from public disclosure, for a period of up to five (5) years from the 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.

G. NOTICE OF RIGHT TO REQUEST PATENT WAIVER.

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

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

H. NOTICE REGARDING ELIGIBLE/INELIGIBLE ACTIVITIES.

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

REFERENCE MATERIAL

APPENDIX A – DEFINITIONS

“Agency” means the United State Department of Agriculture, Rural Development, or the United States Department of Energy, either or both acting on behalf of the Federal government.

“Amendment” means a revision to a solicitation.

"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 solicitation.

"Application" means the documentation submitted in response to a solicitation. 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 USDA 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.

“Biobased Fuel” —The term ‘biobased fuel’ means any transportation fuel produced from biomass.

“Biobased Product” —The term ‘biobased product’ means an industrial product (including chemicals, materials, and polymers) produced from biomass, or a commercial or industrial product (including animal feed and electric power) derived in connection with the conversion of biomass to fuel.

“Biomass” —The term “biomass” means any organic matter that is available on a renewable or recurring basis, including agricultural crops and trees, wood and wood wastes and residues, plants (including aquatic plants), grasses, residues fibers, and animal wastes, municipal wastes, and other waste materials.

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

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

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

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

"Cost Sharing" means the respective share of Total Project Costs to be contributed by the Applicant and by the Federal Government. The percentage of Applicant Cost Share is to be applied to the Total Project Cost (i.e., the sum of Applicant plus Federal Government Cost Shares) rather than to the DOE or the USDA 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 <http://www.grants.gov/CredentialProvider>.

"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/RequestaDUNS>

"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. <http://www.grants.gov/assets/EBIZReqCheck.doc>

"E-Find" is a Grants.gov webpage where you can search for Federal Funding Opportunities in FedGrants. <http://www.grants.gov/FindGrantOpportunities?search=basic>

"Fedgrants.gov" is the official website where you can locate Federal Funding Opportunities <http://fedgrants.gov/Applicants/index.html>.

"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.

"Funding Opportunity Announcement (FOA)" is a publicly available document by which a Federal agency makes known its intentions to award discretionary grants or cooperative agreements, usually as a result of competition for funds. Funding opportunity announcements

may be known as program announcements, notices of funding availability, solicitations, or other names depending on the agency and type of program.

"Grant" means a Financial Assistance instrument used by DOE or USDA 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 USDA 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/>.

"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 Solicitation 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 Solicitation.

"Project" means the set of activities described in an Application, State plan, or other document that is approved by DOE or USDA 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 solicitation. Also see Application.

"Pure Edge Viewer" is a small, free program which allows you to access, complete and submit applications electronically and securely through Grants.gov. You will not be able to access, complete, or submit an application through Grants.gov, unless the Pure Edge Viewer is downloaded on your computer. <http://www.grants.gov/DownloadViewer>.

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

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

"Selection Official" means the DOE or USDA official designated to select Applications for negotiation toward Award under a subject solicitation.

"Substantial Involvement" means involvement on the part of the Government. DOE's or USDA'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 government funds (including direct funding of any FFRDC) plus all other funds that will be committed by the Applicant as Cost Sharing.

APPENDIX B – GRANTS.GOV

Prior to submitting an application in Grants.gov, you must COMPLETE the one-time registration process (all steps) at www.grants.gov/GetStarted, which may take up to 14 days due to coordination of steps. Therefore, you are highly encouraged to register as soon as possible. The following points are provided to assist you in the registration process.

Please read through the information below prior to starting the registration process. This information will assist you in making the registration process as seamless as possible. It is important to follow the steps in the order outlined below, allowing the time specified between each of the steps.

Request a DUNS Number - Follow the instructions at <http://www.grants.gov/RequestaDUNS>. It is highly recommended that the DUNS number be requested by telephone at 1-866-705-5711, which will take about 10 minutes. There is no charge. ***Once the telephone registration is completed, you must allow 24 hours before attempting to use the DUNS number in the next step of registering with the Central Contractor Registry (CCR).***

Register with the Central Contractor Registry (CCR) - Go to <http://www.grants.gov/CCRRegister> and click on the “Help” button to locate the tutorial. Print the tutorial for reference and follow the instructions in the link above. We also recommend that you print and complete the 7-page CCR Worksheet at <http://www.ccr.gov/CCRRegTemplate.pdf> prior to registration, as it may take up to 3 days to gather the information needed for the worksheet. You are required to designate an Electronic Business Point of Contact (E-Business POC) and a Marketing Partner Identification Number (MPIN) in the CCR. It is important to provide the MPIN to the E-Business POC. For assistance with the CCR, contact the Assistance Center at 1-888-227-2423 or at CCR@dliis.dla.mil. You may also access the CCR Handbook at <http://www.ccr.gov/handbook.cfm>.

Install the PureEdge Viewer – ***Authorized Organization Representatives (AORs) are the individuals that will be given the authority to submit applications on behalf of their organization.*** All AORs must download and install the PureEdge Viewer on their computer by following the instructions at <http://www.grants.gov/DownloadViewer>. This small, free program will allow AORs to access, complete, and submit applications electronically and securely. If you encounter any problems, contact customer Support at 1-800-518-4726 or support@grants.gov. (This step may be done earlier in the process).

Register with the Credential Provider - AORs must register with the Credential Provider. ***AORs must wait a minimum of 3 business days for the CCR to become active before attempting to register with the credential provider.*** Go to <http://www.grants.gov/CredentialProvider> and click on the “Help” button to locate the tutorial. Print the tutorial for reference and follow the instructions in the link above. Record the user ID and password that you enter because you will need this information to register with Grants.gov as an AOR. ***AORs must wait approximately 20 minutes after completing the Credential Provider registration before going to the next step of registering with Grants.gov.*** If you encounter any problems, the Credential Provider may be reached at 800-386-6820 or via email at eauthhelp@orc.com or pkihelp@orc.com.

Register with Grants.gov - AORs must register with Grants.gov, utilizing the User ID and password obtained from registering with the Credential Provider. Go to <https://apply.grants.gov/GrantsgovRegister#> and click on the “Help” button to locate the tutorial. Print the tutorial for reference and follow the instructions in the link above. After you have completed the Grants.gov registration process, you will receive a confirmation that indicates whether your registration was successful.

After AORs successfully register with Grants.gov, an email will be generated to the E-Business Point of Contact (POC) that was designated in the CCR, informing them that an individual from their organization has registered in Grants.gov to be an AOR, capable of submitting applications in Grants.gov on behalf of their organization. (Further Information regarding the Electronic Business POC is provided below.) AORs will not be able to submit an application until they receive authorization from the E-Business POC. ***If the AOR does not receive an email authorization from the E-Business POC within 1 business day, contact the E-Business POC.*** If you encounter any problems, contact customer Support at 1-800-518-4726 or support@grants.gov

Designate Privileges to the AOR - The Electronic Business POC 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. Once the E-Business POC receives the email notification from the individual wishing to be recognized as an AOR, the E-Business POC should go to <https://apply.grants.gov/AorMgrGetID>, click on the “Help” button to locate the tutorial, print the tutorial for reference, then log on utilizing the DUNS Number and the Marketing Partner Identification Number (MPIN) that was designated by their organization when registering in the CCR and follow the instructions for designating privileges to the AOR. If you cannot locate the MPIN, contact the CCR Assistance Center at 1-888-227-2423 or at CCR@dliis.dla.mil.

Submit Application in Grants.gov - Once the E-Business POC has authorized privileges to the AOR, the AOR will receive an email notification that they have been given authorization. The AOR may then proceed to submit an application in Grants.gov (see the “Install the PureEdge Viewer” step above). For application instructions, go to <http://www.grants.gov/Apply>. The training demonstration at <http://www.grants.gov/CompleteApplication> will assist AORs in the application process.

Remember that you must open and complete the Application For Federal Assistance (SF-424) first, as this form will automatically populate data fields in other forms. If you encounter any problems, contact customer Support at 1-800-518-4726 or at support@grants.gov If you forget your user name or password, follow the instructions provided in the Credential Provider tutorial.

NOTE: Tutorials may be printed by right-clicking on the tutorial and selecting “print”. In addition to the tutorials, the User Guide is a valuable resource. The User Guide is found at [http://www.grants.gov/GrantsGov UST Grantee/SSL/WebHelp/userguide.doc](http://www.grants.gov/GrantsGov%20UST%20Grantee/SSL/WebHelp/userguide.doc).

APPENDIX C – DETAILED DESCRIPTIONS OF TECHNICAL AREAS

1. **Feedstock Production** 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 subparagraph (A);
 - feedstock harvest, handling, transport, and storage; and
 - strategies for integrating feedstock production into existing managed land;

Discussion and Program Relevance

Proposals 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 products, by-products and non-food wastes, forest residues and wood by-products and wastes. 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.

Desired Outcomes:

- 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.
- 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. Overcoming Recalcitrance of Cellulosic Biomass through developing technologies for converting cellulosic biomass into intermediates that can subsequently be converted into biobased fuels and biobased products, including—

- pretreatment in combination with enzymatic or microbial hydrolysis; and
- thermochemical approaches, including gasification and pyrolysis;

Discussion and Program Relevance

Proposals are invited that will address the recalcitrance of lignocellulosic feedstocks and develop conversion techniques and process that integrate pretreatment and enzymatic hydrolysis methods which move the program toward meeting its sugar cost target goal. Proposed efforts should systematically investigate the relationship between feedstock, pretreatment and cellulose enzymatic digestibility and identify combinations that have the greatest impact on improving the effectiveness and therefore reducing the cost of cellulose conversion to intermediates (sugars).

As a result of focused DOE research the cost of cellulose enzymes had been reduced from approximately \$5 per gallon ethanol to about \$0.14-\$0.18/gallon. However, in order to enable a robust industry based on conversion of lignocellulosic biomass to very low cost sugars, the cost of using cellulases must be further reduced to reach the Program goal of \$0.05-\$0.06/lb by 2030.

There are a number of pretreatment methods being developed and evaluated including dilute acid, ammonia fiber explosion (AFEX), ammonia percolation, lime, hot water (as is, or with pH control to maintain neutral pH), and organosolv-based processes. These pretreatments each produce substrates that differ in composition and in the nature of the enzyme mixtures required for effective hydrolysis (as well as in the levels of conditioning or detoxification required to make the sugars derived from these materials fermentable by microorganisms). Minor changes in the conditions used to carry out pretreatment (as well as using different batches of feedstock) can have a dramatic impact on the enzymatic digestibility of pretreated corn stover cellulose, in some cases enabling the quantity of enzyme required to convert the cellulose to be reduced substantially. The DOE Program wishes to identify the conditions and feedstock, pretreatment process conditions, and enzyme combinations that will lead to significant improvements in and cost reduction of conversion of cellulose to sugars (intermediates).

Desired outcomes: Identification or development of process(es) or process

combinations that overcome the recalcitrance of cellulosic biomass by improving the digestibility of cellulose in order to reduce the cost of a mixed, dilute sugar stream suitable for fermentation to ethanol in a mature biochemical plant to \$0.10/lb by 2012 and to \$0.05 - \$0.06/lb by 2030.

3. Product Diversification through 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, including thermochemical fuel production;
- metabolic engineering, enzyme engineering, and fermentation systems for biological production of desired products or cogeneration of power;
- product recovery;
- power production technologies; and
- integration into existing biomass processing facilities, including starch ethanol plants, paper mills, and power plants.

Discussion and Program Relevance

Proposals 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 co-generated power) that eventually can increase the feasibility of fuel production in a biorefinery including those that:

- Enable the conversion, via biological, thermal, catalytic or chemical means, of agricultural and forest biomass feedstocks (excluding landfills) into biobased products.
- Improve the performance or commercial viability of biobased products and co-products.
- 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.

Desired Outcomes:

- 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 ligno-cellulosic biomass into syngas.
- Develop new technologies that would significantly decrease the cost and improve the energy efficiency of converting syngas into marketable fuels or chemicals.

- Develop new technologies that would significantly decrease the cost and improve the energy efficiency of pyrolyzing biomass into oils that could be used for (or converted into) marketable fuels or chemicals.
 - Develop new technologies that would significantly decrease the cost and improve the energy efficiency of producing methane or hydrogen from biomass (excluding landfills).
 - 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.
- 2. Analysis that Provides Strategic Guidance** for the application of biomass technologies in accordance with realization of improved sustainability and environmental quality, cost effectiveness, security, and rural economic development, usually featuring system-wide approaches.

