

**FINANCIAL ASSISTANCE  
FUNDING OPPORTUNITY ANNOUNCEMENT**



**U. S. Department of Energy  
National Energy Technology Laboratory  
“Computational Capabilities to Develop Materials for  
Advanced Fossil Energy Power Systems”**

**Funding Opportunity Number: DE-FOA-0000260**

**Announcement Type: Initial**

**CFDA Number: 81.089 Fossil Energy Research and Development**

**Issue Date: 04/09/2010**  
**Letter of Intent Due Date: Not Applicable**  
**Pre-Application Due Date: Not Applicable**  
**Application Due Date: 05/29/2010 at 8:00:00 PM Eastern Time**

*This Announcement will remain open until the Application Due Date indicated above however, applications may be submitted any time before this Announcement closes.*

*It is also recommended that application submission begin well in advance (at least 48 hours) of the Announcement closing.*

## NOTE: REGISTRATION/SUBMISSION REQUIREMENTS

### Registration Requirements

There are several one-time actions you must complete in order to submit an application in response to this Announcement (e.g., obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number, register with the Central Contractor Registration (CCR), and register with Grants.gov). Applicants who are not registered with CCR and Grants.gov, should allow at least 21 days to complete these requirements. It is suggested that the process be started as soon as possible.

**Applicants must obtain a DUNS number. DUNS website: <http://fedgov.dnb.com/webform>.**

**Applicants must register with the CCR. CCR website: <http://www.ccr.gov/>**

**Applicants must register with Grants.gov. Grants.gov website: <http://grants.gov/>**

**Applicants must register with FedConnect to submit questions. FedConnect website: [www.fedconnect.net](http://www.fedconnect.net)**

### Questions

Questions relating to the **system requirements or how an application form works** must be directed to Grants.gov at 1-800-518-4726 or [support@grants.gov](mailto:support@grants.gov).

Questions regarding the **content** of the announcement must be submitted through the FedConnect portal. You must register with FedConnect to respond as an interested party to submit questions, and to view responses to questions. It is recommended that you register as soon after release of the FOA as possible to have the benefit of all responses. 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.

### Application Preparation and Submission

**Applicants must download the application package, application forms and instructions, from Grants.gov. Grants.gov website: <http://www.grants.gov/>**  
(Additional instructions are provided in Section IV A of this FOA.)

### **Where to Submit**

Applications must be submitted through Grants.gov to be considered for award. You cannot submit an 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.

**IMPORTANT NOTICE TO POTENTIAL 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).

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## SECTION I - FUNDING OPPORTUNITY DESCRIPTION

### **Description**

The objective of this activity is to competitively solicit projects in the Materials area of the U.S. Department of Energy's National Energy Technology Laboratory's (NETL's) Advanced Research (AR) Program that will enable the next generation Fossil Energy (FE) power systems.

Proposed activity coincides with the Annual Procurement Plan or is a new initiative that is supportive of the NETL's Business Plan/NETL Program Areas. The goal of the AR Materials Program is to conduct research leading to a scientific understanding of high-performance materials compatible with hostile environments associated with advanced FE production. This includes the development of the materials of construction, including processing and fabrication methods, and functional materials necessary for all FE systems, including materials for coal fuels technologies and for advanced power generation technologies such as coal gasification, heat engines, combustion systems (i.e advanced ultra supercritical and oxygen fired), and fuel cells.

### **Technical Topics:**

The DOE's NETL is seeking innovative research and development to implement the capabilities for computational development of materials that can be used in advanced FE power systems. The need for more fuel efficient, reduced carbon emitting, and sequestration enabling power generation technologies drives the need for more sophisticated materials able to operate in harsh environments. Concurrent with the continuing drive to reduce costs and design-cycle time in the manufacture of power plant equipment is an increase in the need for more materials property data demonstrating sufficient performance.

Novel materials that can withstand high temperatures and extreme environments are dominant themes in materials development for efficient energy systems. Basic requirements are elevated melting temperatures, high oxidation and corrosion resistance, the ability to resist creep, and high toughness, and encompass some of the most challenging problems in materials science. An effective way to accelerate research in this field is to use advances in materials simulations and high performance computing and communications to guide experiments. This synergy between experiment and advanced materials modeling will significantly enhance the synthesis of novel high-temperature materials. Computer simulation to study the structure, properties, and processing of materials on the atomic scale is needed to speed the advancement of innovative strategies that would replace traditional, trial-and-error experimental methods, which are costly and time-consuming. A wide range of computer modeling tools, ranging from highly accurate quantum mechanics (electronic structure) methods to simple interatomic potentials and databases to support the models, could be brought to bear on addressing critical materials needs.

Applications are sought for the development of new algorithms that can be built into a system that will reliably predict properties of materials that are currently being considered for use in advanced FE systems as well as new materials that have the potential to meet the performance requirements necessary to achieve the DOE efficiency and environmental goals. The materials can include any of the materials that are currently under development in the AR Materials Program, including, but not limited to, austenitic stainless steels, solution-strengthened and nickel-based alloys.

One example of a responsive application would be a simulation of the interactions that occur at the grain boundary of alloys containing refractory metal elements. For high-strength alloys, such as refractory metals, grain boundary segregation of alloying (impurity) elements can weaken grain boundary cohesion substantially and directly lead to brittle inter-granular fracture. Understanding grain boundary segregation behavior and its impact on grain boundary cohesion is of great importance in predicting extrinsic ductility of the alloys. Multi-scale computer simulations in this area will reveal valuable information on changes in atomic configuration, electronic structure and thermodynamics due to grain boundary segregation, ranging

from quantum mechanical calculations, and molecular dynamics to Monte Carlo simulations. Effect of grain boundary types, alloys compositions (impurity, dilute and concentrated), types of segregants (substitutional and interstitial), and temperatures must be taken into consideration.

## **SECTION II - AWARD INFORMATION**

### **A. TYPE OF AWARD INSTRUMENT**

DOE anticipates awarding Cooperative Agreements under this program announcement (See Section VI.B.2 Statement of Substantial Involvement). Financial Assistance Cooperative Agreement

### **B. ESTIMATED FUNDING:**

It is anticipated that the total DOE funding available under this opportunity will be approximately : \$2.2 – 4.5 Million over 3 years with the first awards expected to be available in FY 2010.

Estimated Award Value: \$0.9 – 1.5 Million over 3 years

Cost-share: A minimum of 20% cost-share (\$0.54 - 0.9 Million) is required.

Current FY2010 Federal Funding: \$1.5 Million (Appropriation Act: Energy and Water Act)

### **C. MAXIMUM AND MINIMUM AWARD SIZE**

Ceiling (i.e., the maximum amount for an individual award made under this announcement):

**None**

Floor (i.e., the minimum amount for an individual award made under this announcement):

**None**

### **D. EXPECTED NUMBER OF AWARDS**

DOE anticipates making two (2) to four (4) awards under this announcement.

### **E. ANTICIPATED AWARD SIZE**

DOE anticipates that awards will be in the \$0.9 – \$1.5 Million range (\$ 0.72 – 1.2 Million DOE plus cost share)

### **F. PERIOD OF PERFORMANCE**

DOE anticipates making awards with an estimated project period of two to three years.

### **G. TYPE OF APPLICATION**

DOE will accept only new applications under this Announcement.

## SECTION III - ELIGIBILITY INFORMATION

### A. ELIGIBLE APPLICANTS

All types of entities are eligible to apply, except other Federal agencies, Federally Funded Research and Development Center (FFRDC) Contractors, and nonprofit organizations described in section 501(c)(4) of the Internal Revenue Code of 1986 that engaged in lobbying activities after December 31, 1995.

### B. COST SHARING {or MATCHING}

The cost share must be at least 20% of the total allowable costs for research and development projects (i.e., 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) and must come from non-Federal sources unless otherwise allowed by law. (See 10 CFR 600 for the applicable cost sharing requirements.)

### C. OTHER ELIGIBILITY REQUIREMENTS

Federally Funded Research and Development Center (FFRDC) Contractors. FFRDC contractors may be proposed as a team member on another entity's application subject to the following guidelines: Authorization for non-DOE 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 and must not place the FFRDC contractor in direct competition with the private sector.

Authorization for DOE 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 [Name] 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 private sector."

Value/Funding. The value of, and funding for, the FFRDC contractor portion of the work will not normally be included in the award to a successful applicant. Usually, DOE will fund a DOE/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 cost of the project, including the applicant's and the FFRDC contractor's portions of the effort.

FFRDC Contractor Effort:

- The scope of work to be performed by the FFRDC contractor may not be more significant than the scope of work to be performed by the applicant.

- The FFRDC contractor effort, in aggregate, shall not exceed [Percentage] of the total estimated cost of the project, including the applicant's and the FFRDC contractor's portions of the effort.

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

## **SECTION IV - APPLICATION AND SUBMISSION INFORMATION**

### **A. ADDRESS TO REQUEST APPLICATION PACKAGE**

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.

### **B. LETTER OF INTENT AND PRE-APPLICATION**

1. Letter of Intent: Letters of Intent are not required.
2. Pre-application: Pre-applications are not required.

### **C. CONTENT AND APPLICATION FORMS**

You must complete the mandatory forms and any applicable optional forms (e.g., Disclosure of Lobbying Activities (SF-LLL)) 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 (R&R)**

Complete this form first to populate data in other forms. Complete all the required fields in accordance with the pop-up instructions on the form. The list of certifications and assurances referenced in Field 17 can be found on the DOE Financial Assistance Forms Page at [http://management.energy.gov/business\\_doe/business\\_forms.htm](http://management.energy.gov/business_doe/business_forms.htm) under Certification and Assurances.

#### **2. RESEARCH AND RELATED Other Project Information**

Complete questions 1 through 6 and attach files. The files must comply with the following instructions:

##### **Project Summary/Abstract (Field 7 on the Form)**

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 after awards are made. The project summary must not exceed 2 pages when printed using standard 8.5" by 11" paper with 1" margins (top, bottom, left and right) {single spaced} with font not smaller than 11 point. To attach a Project Summary/Abstract, click "Add Attachment."

##### **Project Narrative (Field 8 on the Form)**

The project narrative must not exceed **25** pages, including cover page, table of contents, charts, graphs, maps, photographs, tables, and other pictorial presentations, when printed using standard 8.5" by 11" paper with 1 inch margins (top, bottom, left, and right) {single spaced} 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 Section VIII.D for instructions on how to mark proprietary application information. To attach a Project Narrative, click "Add Attachment."

The project narrative must include:

- **Project Objectives:** This section should provide a clear, concise statement of the specific objectives/aims of the proposed project.

- **Merit Review Criterion Discussion:** The 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 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.

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

- **Multiple Principal Investigators:** The applicant, whether a single organization or team/partnership/consortium, must indicate if the project will include multiple PIs. This decision is solely the responsibility of the applicant. If multiple PIs will be designated, the application must identify the Contact PI/Project Coordinator and provide a "Coordination and Management Plan" that describes the organization structure of the project as it pertains to the designation of multiple PIs. This plan should, at a minimum, include:

- process for making decisions on scientific/technical direction;
- publications;
- intellectual property issues;
- communication plans;
- procedures for resolving conflicts; and
- PIs' roles and administrative, technical, and scientific responsibilities for the project.

- **Statement Of Project Objectives (SOPO):** The project narrative must contain a single, detailed Statement of Project Objectives that addresses how the project objectives will be met. The Statement of Project Objectives must contain a clear, concise description of all activities to be completed during project performance and follow the structure discussed below. The Statement of Project Objectives may be released to the public by DOE in whole or in part after award. It is therefore required that it shall not contain proprietary or confidential business information.

The Statement of Project Objectives is generally less than **five (5)** pages in total for the proposed work. Applicants shall prepare the Statement of Project Objectives in the following format:

**TITLE OF WORK TO BE PERFORMED**  
(Insert the title of work to be performed. Be concise and descriptive.)

#### A. OBJECTIVES

Include one paragraph on the overall objective(s) of the work. Also, include objective(s) for each phase of the work.

## B. SCOPE OF WORK

This section should not exceed one-half page and should summarize the effort and approach to achieve the objective(s) of the work for each Phase.

## C. TASKS TO BE PERFORMED

Tasks, concisely written, should be provided in a logical sequence and should be divided into the phases of the project, as appropriate. This section provides a brief summary of the planned approach to this project. An outline of the Project Management Plan (referenced in Task 1.0 below and required to be submitted with your application) is provided later in this Section.

### PHASE I

#### Task 1.0 - Project Management and Planning

(Description includes work elements required to revise and maintain the Project Management Plan and to manage and report on activities in accordance with the plan)

##### Subtask 1.1

(Description)

#### Task 2.0 - (Title)

### PHASE II (Optional)

#### Task 3.0 - (Title)

## D. DELIVERABLES

The periodic, topical, and final reports shall be submitted in accordance with the attached "Federal Assistance Reporting Checklist" and the instructions accompanying the checklist.

[Note: The Recipient shall provide a list of deliverables other than those identified on the "Federal Assistance Reporting Checklist" that will be delivered. These reports shall also be identified within the text of the Statement of Project Objectives.

### (END OF STATEMENT OF PROJECT OBJECTIVES)

#### **Other Attachments (Field 12 on the form)**

If you need to elaborate on your responses to questions 1-6 on the "Other Project Information" document, attach a file in field 12. **Also, attach the following files:**

#### **Project Management Plan**

This plan should be formatted to include the following sections with each section to include the information as described below:

A. Executive Summary: Provide a description of the project that includes the objective, project goals, and expected results. For purposes of the application, this information is included in the Project Narrative (Field 8) and should be simply copied to this document for completeness, so that the Project Management Plan is a stand-alone document.

B. Risk Management: Provide a summary description of the proposed approach to identify, analyze, and respond to perceived risks associated with the proposed project. Project risk events are uncertain future events that, if realized, impact the success of the project. As a minimum, include the initial identification of significant technical, resource, and management issues that have the potential to impede project progress and strategies to minimize impacts from those issues.

C. Milestone Log: Provide milestones for each budget period (or phase) of the project. Each milestone should include a title and planned completion date. Milestones should be quantitative and show progress toward budget period and/or project goals.

[Note: During project performance, the Recipient will report the Milestone Status as part of the required quarterly Progress Report as prescribed under Attachment 3, Reporting Requirements Checklist. The Milestone Status will present actual performance in comparison with Milestone Log, and include:

- (1) the actual status and progress of the project,
- (2) specific progress made toward achieving the project's milestones, and,
- (3) any proposed changes in the project's schedule required to complete milestones. ]

D. Funding and Costing Profile: Provide a table (the Project Funding Profile) that shows, by budget period, the amount of government funding going to each project team member. Also provide a table (the Project Costing Profile) that projects, by month, the expenditure of government funds for the first budget period, at a minimum.

E. Project Timeline: Provide a timeline of the project (similar to a Gantt chart) broken down by each task and subtask, as described in the Statement of Project Objectives. The timeline should include for each task, a start date, and end date. The timeline should show interdependencies between tasks and include the milestones that are identified in the Milestone Log (Section C).

F. Success Criteria at Decision Points: Provide success criteria for each decision point in the project, including go/no-go decision points and the conclusions of budget periods and the entire project. The success criteria should be objective and stated in terms of specific, measurable, and repeatable data. Usually, the success criteria pertain to desirable outcomes, results, and observations from the project.

**(END OF PROJECT MANAGEMENT PLAN)**

[Note: As the first task in the Statement of Project Objectives, successful applicants will revise the version of the Project Management Plan that is submitted with their applications by including details from the negotiation process. This Project Management Plan will be updated by the Recipient as the project progresses, and the Recipient must use this plan to report schedule and budget variances.] Save this plan in a single file named "pmp.pdf" and click on "Add Attachments" in Field 12 to attach.

**Third Parties Contributing to Cost Sharing Appendix:** At the time you submit your application, you must have a letter from each third party (i.e., a party other than the organization submitting the application). The letter must state that the third party is committed to providing a specific minimum dollar amount of cost sharing. By submitting your application, you are providing assurance that you have signed letters of commitment. In an appendix to your Project Narrative, you must identify the following information for each third party contributing to 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. This appendix will not count in the project narrative page limitation. Successful applicants must provide the signed letters of commitments within the number of days specified in Part IV.D, Submissions from Successful Applicants.

### **3. RESEARCH AND RELATED SENIOR/KEY PERSONNEL**

Complete this form before the Budget form to populate data on the Budget form. Beginning with the PD/PI, provide a profile for each senior/key person proposed. A senior/key person is any individual who contributes in a substantive, measurable way to the scientific/technical development or execution of the project, whether or not a salary is proposed for this individual. Subrecipients and consultants must be included if they meet this definition. For each senior/key person provide:

**Biographical Sketch.** Complete a biographical sketch for each senior/key person and attach to the "Attach Biographical Sketch" field in each profile. 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.

Research and 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.

Current and Pending Support. Current and pending support information is not required for this program. Do not attach a Current and Pending Support file.

#### **4. RESEARCH AND RELATED BUDGET (TOTAL FED + NON-FED)**

Complete the Research and Related Budget (Total Fed & Non-Fed) form in accordance with the instructions on the form and the following instructions. You must complete a separate budget for each year of support requested. The form will generate a cumulative budget for the total project period. You must complete all the mandatory information on the form before the NEXT PERIOD button is activated. You may request funds under any of the categories listed as long as the item and amount are necessary to perform the proposed work, meet all the criteria for allowability under the applicable Federal cost principles, and are not prohibited by the funding restrictions in this announcement (See Section IV.G).

**Budget Justification** (Field K on the form).

Provide the required supporting information for the following costs (See R&R instructions): equipment; domestic and foreign travel; participant/trainees; material and supplies; publication; consultant services; ADP/computer services; subaward/consortium/contractual; equipment or facility rental/user fees; alterations and renovations; and indirect cost type. Provide any other information you wish to submit to justify your budget request. If cost sharing is required, provide an explanation of the source, nature, amount, and availability of any proposed cost sharing. Attach a single budget justification file for the entire project period in Field K. The file automatically carries over to each budget year.

#### **5. R&R SUBAWARD (TOTAL FED + NON-FED) FORM**

Budgets for Subrecipients, other than DOE FFRDC Contractors. You must provide a separate cumulative R&R budget for each subrecipient that is expected to perform work estimated to be more than \$100,000 or 50 percent of the total work effort (whichever is less). Download the R&R Budget Attachment from the R&R SUBAWARD BUDGET (Total Fed + Non-Fed) FORM and e-mail it to each subrecipient that is required to submit a separate budget. After the Subrecipient has e-mailed its completed budget back to you, attach it to one of the blocks provided on the form. Use up to 10 letters of the subrecipient's name as the file name.

#### **6. PROJECT/PERFORMANCE SITE LOCATION(S)**

Indicate the primary site where the work will be performed. If a portion of the project will be performed at any other site(s), identify the site location(s) in the blocks provided.

Note that the Project/Performance Site Congressional District is entered in the format of the 2 digit state code followed by a dash and a 3 digit Congressional district code, for example VA-001. Hover over this field for additional instructions.

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

## 7. DISCLOSURE OF LOBBYING ACTIVITIES (SF-LLL)

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."

## 8. SUMMARY OF REQUIRED FORMS AND FILES

Your application must include the following documents:

Name of Document	Format	Attach to
<b>SF 424 (R&amp;R)</b>	Form	N/A
<b>RESEARCH AND RELATED OTHER PROJECT INFORMATION</b>	Form	N/A
Project Summary/Abstract	PDF	Field 7
Project Narrative, including required appendices	PDF	Field 8
Project Management Plan	PDF	Field 12
Commitment Letters from Third Parties and Participating Members	PDF	Field 12
<b>RESEARCH &amp; RELATED SENIOR/KEY PERSONNEL PROFILE</b>	Form	N/A
Biographical Sketch	PDF	Attach to appropriate block
<b>RESEARCH AND RELATED BUDGET (TOTAL FED + NON-FED)</b>	Form	N/A
Budget Justification	PDF	Field K
<b>R&amp;R SUBAWARD BUDGET (TOTAL FED + NON-FED) ATTACHMENT(S) FORM, if applicable</b>	Form	N/A
<b>PROJECT/PERFORMANCE SITE LOCATION(S)</b>	Form	N/A
<b>SF-LLL DISCLOSURE OF LOBBYING ACTIVITIES, if applicable</b>	Form	N/A

### D. SUBMISSIONS FROM SUCCESSFUL APPLICANTS

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

- Indirect cost information
- Other budget information
- Name and phone number of the Designated Responsible Employee for complying with national policies prohibiting discrimination (See 10 CFR 1040.5)
- Representation of Limited Rights Data and Restricted Software, if applicable
- Commitment Letter from Third Parties Contributing to Cost Sharing, if applicable

## **E. SUBMISSION DATES AND TIMES**

### **1. Pre-application Due Date**

Pre –applications ARE NOT REQUIRED

### **2. Application Due Date**

Applications must be received by **May 26, 2010**, not later than **8:00:00 PM Eastern Time**. **You are encouraged to transmit your application well before the deadline (at least 48 hours in advance). 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, allocable and reasonable in accordance with the applicable Federal cost principles referenced in 10 CFR 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 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.

## **H. OTHER SUBMISSION AND REGISTRATION REQUIREMENTS**

### **1, 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](http://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](mailto:support@grants.gov).

### **2.Registration Process**

#### **One Time 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](http://www.grants.gov/GetStarted)). We recommend that you start this process at least three weeks before the application due date. It may take 21 days or more to complete the entire process. Use the Grants.gov Organizational Registration Checklists at <http://www.grants.gov/assets/OrganizationRegCheck.pdf> 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). 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).

## SECTION V - APPLICATION REVIEW INFORMATION

### A. CRITERIA

#### 1. Initial Review Criteria

##### Application Award Eligibility

Prior to a comprehensive merit evaluation, DOE will perform an initial review to determine that (1) the applicant is eligible for an award; (2) the information required by the announcement has been submitted; (3) all mandatory requirements are satisfied; and (4) the proposed project is responsive to the objectives of the funding opportunity announcement. Applications that fail to pass the initial review will not be forwarded for merit review and will be eliminated from further consideration.

#### 2. Merit Review Criteria

Applications shall be reviewed on curricula proposed as well as the commercialization planning for the Training Program(s) developed supporting efficient operation of commercial buildings advancing DOE's net-zero energy goals. Experience directly in the specific energy efficiency subject areas proposed is a plus. The ability to communicate results of this research (subject to confidentiality restrictions) is an essential part of this project. The applicant should provide demonstrated involvement in one or more national associations that provide networking and communication of educational and certification issues related to high performance and/or energy efficient buildings. Proprietary company information, software, and patent rights shall remain with the contractor subject to certain government restrictions.

Applications submitted in response to this FOA that pass the Initial Review shall be evaluated and scored in accordance with the criteria and weights listed below:

##### Criterion 1 - Scientific and Technical Merit (40 percent)

The application will be evaluated to determine the overall technical merit of the proposed concept and the ability of the project to achieve the objectives of the FOA. The application will be evaluated on the overall quality, soundness, and reasonableness of the applicant's proposed work, including the following:

- (1) The purpose and objectives of the proposed work and its relationship to the goals and objectives of this FOA;
- (2) The thoroughness and relevance of the discussion of the applicant's knowledge of current technology used in the proposed area of work;
- (3) The adequacy and appropriateness of the discussion as to how the proposed work advances the current knowledge or technology for the topic area being addressed;
- (4) The potential for the proposed work to contribute to a scientific or technical breakthrough in the topic area being addressed; and
- (5) The degree to which the proposed work is based on sound scientific and engineering principles.

##### Criterion 2 - Technical Approach/Statement of Project Objectives (35 percent)

The application will be evaluated to determine the overall quality, soundness, and reasonableness of the applicant's technical approach to fulfill the requirements of the proposed work, including the following:

- (1) The adequacy and feasibility of the applicant's approach to achieving the FOA's stated objectives;
- (2) The appropriateness, rationale, and completeness of the proposed Statement of Project Objectives;
- (3) The adequacy of the proposed labor categories and staffing plan;
- (4) The adequacy of the proposed schedule and the degree to which both appropriate technical and schedule milestones are clearly identified and defined in the proposal, and the likelihood that these milestones will be successfully met based on the proposed technical approach; and
- (5) The adequacy and appropriateness of proposed travel and technology transfer plan, including any plans for utilization of the proposed technology, if applicable.

*Criterion 3 - Technical Capabilities, Project Management, Facilities, and Equipment (15 percent)*

The application will be evaluated in terms of the qualifications and relative experience of key personnel assigned to the project (including subcontractors and consultants, if considered key personnel), the qualifications of the participating organizations, the proposed management of the effort, and the facilities and equipment, as outlined according to the following factors:

- (1) The technical credentials, capabilities, and demonstrated experience of the key personnel relevant to the proposed work;
- (2) The prior experience in managing projects of similar type, size and complexity;
- (3) The project organization and structure, responsibilities and lines of authority, both technical and administrative, of the participating organizations and key personnel are appropriately outlined; and
- (4) The type, quality, availability, and appropriateness of facilities, equipment, and materials to be utilized in executing the proposed work.

*Criterion 4 - Project Management Plan (10 percent)*

This criterion relates entirely to the stand-alone PMP described in this FOA. If the application does not include this stand-alone PMP, evaluators will be instructed to assign a score of zero to this criterion. The application will be evaluated on the degree to which the PMP in defines or identifies the following:

- (1) Adequacy and completeness of the PMP in defining the organizational structure and the roles and responsibilities of the project team members;
- (2) Adequacy and completeness of the PMP in establishing the technical scope, budget, and schedule baselines, in identifying key milestones and decision points and the criteria upon which decisions are made, in controlling project performance relative to these baselines and decision points, and in defining the actions taken when these baselines must be revised; and
- (3) Adequacy and completeness of the PMP in the identification of technical, organizational and other risk factors affecting the potential for success, and mitigation strategies for these risks.

### **3. Other Selection Factors**

#### **Program Policy Factors**

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

1. It is desirable to select for award, a group of projects, which represents a diversity of technical approaches and methods;

2. It may be desirable to support complementary and/or duplicative efforts or projects, which, when taken together, will best achieve the research goals and objectives;
3. It is desirable that different kinds and sizes of organizations be selected for award in order to provide a balanced programmatic effort and a variety of different technical perspectives;
4. It is desirable, because of the nature of the energy source, the type of projects envisioned, or limitations of past efforts, to select for award a group of projects with a broad or specific geographic distribution.

## **B. REVIEW AND SELECTION PROCESS**

### **1. Merit Review**

Applications that pass the initial review will be subjected to a merit review in accordance with the guidance provided in the "Department of Energy Merit Review Guide for Financial Assistance." This guide is available under Financial Assistance, Regulations and Guidance at <http://www.management.energy.gov/documents/meritrev.pdf>.

### **2. Selection**

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

### **3. Discussions and Award**

The Government may enter into discussions with a selected applicant for any reason deemed necessary, including but not limited to: (1) the budget is not appropriate or reasonable for the requirement; (2) only a portion of the application is selected for 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 anticipates notifying applicants selected for award and making awards during the fourth quarter of Fiscal Year 2010.

## SECTION VI - AWARD ADMINISTRATION INFORMATION

### A. AWARD NOTICES

#### 1. Notice of Selection

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

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

An Assistance Agreement issued by the contracting officer is the authorizing award document. It normally includes either as an attachment or by reference: (1) Special Terms and Conditions; (2) Applicable program regulations, if any; (3) Application as approved by DOE/NNSA.; (4) DOE assistance regulations at 10 CFR 600; (5) National Policy Assurances To Be Incorporated As Award Terms; (6) Budget Summary; and (7) Federal Assistance Reporting Checklist, which identifies the reporting requirements.

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

### B. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS

#### 1. Administrative Requirements

The administrative requirements for DOE grants and cooperative agreements are contained in 10 CFR 600 (See: <http://ecfr.gpoaccess.gov>). Grants and cooperative agreements made to universities, non-profits and other entities subject to Title 2 CFR are subject to the Research Terms and Conditions located on the National Science Foundation web site at <http://www.nsf.gov/bfa/dias/policy/rtc/index.jsp>.

#### 2. Special Terms and Conditions and National Policy Requirements

Special Terms and Conditions and National Policy Requirements. The DOE Special Terms and Conditions for Use in Most Grants and Cooperative Agreements are located at [http://management.energy.gov/business\\_doe/business\\_forms.htm](http://management.energy.gov/business_doe/business_forms.htm).

The National Policy Assurances To Be Incorporated As Award Terms are located at <http://www.nsf.gov/bfa/dias/policy/rtc/appc.pdf>.

#### Intellectual Property Provisions

The standard DOE financial assistance intellectual property provisions applicable to the various types of recipients are located at [http://www.gc.doe.gov/financial\\_assistance\\_awards.htm](http://www.gc.doe.gov/financial_assistance_awards.htm) will be incorporated into awards issued as a result of this announcement.

## **Statement of Substantial Involvement**

Awards under this Announcement will be cooperative agreements. The DOE Specialist and DOE Project Officer will negotiate a Statement of Substantial Involvement prior to award similar to the following:

**RECIPIENT'S RESPONSIBILITIES.** The Recipient is responsible for:

Performing the activities supported by this award in accordance with the Project Management Plan (PMP), including providing the required personnel, facilities, equipment, supplies, and services;

Managing and controlling project activities in accordance with established processes and procedures to ensure tasks and subtasks are completed within schedule and budget constraints defined by the current PMP.

Implementing an approach to identify, analyze, and respond to project risks that is commensurate with the complexity of the project.

Defining and revising approaches and plans, submitting the plans to DOE for review, and incorporating DOE comments;

Coordinating related project activities with external suppliers, including DOE M&O contractors (if applicable), to ensure effective integration of all work elements;

Attending semiannual program review meetings and reporting project status;

Submitting technical reports and incorporating DOE comments; and

Presenting the project results at appropriate technical conferences or meetings.

**DOE RESPONSIBILITIES.** DOE is responsible for:

Reviewing in a timely manner project plans, including project management, testing and technology transfer plans, and recommending alternate approaches, if the plans do not address critical programmatic issues;

Participating in project management planning activities, including risk analysis, to ensure DOE's program requirements or limitations are considered in performance of the work elements.

Conducting annual program review meetings to ensure adequate progress and that the work accomplishes the program and project objectives. Recommending alternate approaches or shifting work emphasis, if needed;

Integrating and redirecting the work effort to ensure that project results address critical system and programmatic goals established by DOE/FE in coordination with the DOE/FE AR Materials Program.

Promoting and facilitating technology transfer activities, including disseminating program results through presentations and publications; and

Serving as scientific/technical liaison between awardees and other program or industry staff.

## **C. REPORTING**

Reporting requirements are identified on the Federal Assistance Reporting Checklist, DOE F 4600.2, attached to the award agreement. For a sample Checklist, see <http://www.management.energy.gov/documents/DOEF4600pt292009.pdf>.

## **SECTION VII - QUESTIONS/AGENCY CONTACTS**

### **A. QUESTIONS**

Questions regarding the content of the announcement must be submitted through the FedConnect portal. You must register with FedConnect to respond as an interested party to submit questions, and to view responses to questions. It is recommended that you register as soon after release of the FOA as possible to have the benefit of all responses. DOE will try to respond to a question within 3 business days, unless a similar question and answer have already been posted on the website.

Questions and comments concerning this FOA shall be submitted not later than five business days prior to the application due date. Questions submitted after that date may not allow the Government sufficient time to respond.

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 cannot answer these questions.

### **B. AGENCY CONTACT**

Name: Mary Beth J. Pearse  
E-mail: [MaryBeth.Pearse@netl.doe.gov](mailto:MaryBeth.Pearse@netl.doe.gov)

## **SECTION VIII - OTHER INFORMATION**

### **A. MODIFICATIONS**

Notices of any modifications to this announcement will be posted on Grants.gov and the FedConnect portal. You can receive an email when a modification or an announcement message is posted by registering with FedConnect as an interested party for this FOA. It is recommended that you register as soon after release of the FOA as possible to ensure you receive timely notice of any modifications or other announcements.

### **B. GOVERNMENT RIGHT TO REJECT OR NEGOTIATE**

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

### **C. COMMITMENT OF PUBLIC FUNDS**

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

### **D. PROPRIETARY APPLICATION INFORMATION**

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 [*Insert pages*] of this application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this applicant receives an award as a result of or in connection with the submission of this application, DOE shall have the right to use or disclose the data herein to the extent provided in the award. This restriction does not limit the Government's right to use or disclose data obtained without restriction from any source, including the applicant."

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

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

### **E. EVALUATION AND ADMINISTRATION BY NON-FEDERAL PERSONNEL**

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

## **F. INTELLECTUAL PROPERTY DEVELOPED UNDER THIS PROGRAM**

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

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

### **Program Covered Under Special Protected Data**

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 <http://www.gc.doe.gov/documents/patwaivclau.pdf>. 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.