

**FINANCIAL ASSISTANCE  
FUNDING OPPORTUNITY ANNOUNCEMENT**



**U. S. Department of Energy  
Office of Science**

**Funding Opportunity Announcement  
for FY 2011 SBIR/STTR Phase II  
Grant Applications**

**Funding Opportunity Number: DE-FOA-0000508**

**Announcement Type: Amendment**

**CFDA Number: 81.049**

**Amendment Posted: March 7, 2011**  
**Issue Date: February 16, 2011**  
**Letter of Intent Due Date: Not Applicable**  
**Pre-Application Due Date: Not Applicable**  
**Application Due Date: April 4, 2011 at 11:59 PM Eastern Time**

The purpose of this amendment is to notify potential applicants of the change in funding consideration for projects submitted to one of the FY 2010 SBIR/STTR Phase I Funding Opportunity Announcement (DE-FOA-0000161) topics on page 6.

**ELIGIBLE APPLICANTS:** Only currently active DOE SBIR or STTR Phase I grantees are eligible to apply to this U. S. Department of Energy Phase II Funding Opportunity Announcement (FOA).

Applicants are required to use the compatible version of Adobe Reader software to complete a [Grants.gov](http://www.grants.gov) Adobe application package. To ensure you have the [Grants.gov](http://www.grants.gov) compatible version of Adobe Reader, visit the download software page at [http://www.grants.gov/help/download\\_software.jsp](http://www.grants.gov/help/download_software.jsp)

### **NOTE: REQUIREMENTS FOR GRANTS.GOV**

#### **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.

**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.pdf> to guide you through the process. Designating an E-Business Point of Contact (EBiz POC) and obtaining a special password called an MPIN are important steps in the CCR registration process. Applicants, who are not registered with CCR and Grants.gov, should allow at **least 21 days** to complete these requirements. It is suggested that the process be started as soon as possible.

**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).

**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](mailto:support@grants.gov). Part VII of this Funding Opportunity Announcement (FOA) 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. 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

Questions regarding the content of the FOA 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. More information is available at

[https://www.fedconnect.net/FedConnect/PublicPages/FedConnect\\_Ready\\_Set\\_Go.pdf](https://www.fedconnect.net/FedConnect/PublicPages/FedConnect_Ready_Set_Go.pdf). 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.

**Modifications:** Notices of any modifications to this FOA will be posted on Grants.gov and the FedConnect portal. You can receive an email when a modification or an FOA 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 FOAs. More information is available at <http://www.fedconnect.net>.

**All applications should be in a single PDF file.**

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## **PART I – FUNDING OPPORTUNITY DESCRIPTION**

The Department of Energy (DOE) invites all DOE SBIR/STTR Phase I Awardees from FY 2010 to submit Phase II grant applications. The Department may also reconsider previously submitted, peer-reviewed, high ranking Phase II grant applications from FY 2010. However, this is only at the discretion and request of the DOE Project Officer. Those applicants do not have an opportunity to reapply. If a previously submitted application is selected for funding, the applicant would be given an opportunity to determine if he/she is still interested and able to pursue the Phase II research project.

The purpose of Phase II is to perform the research and development required to meet the DOE objectives stated in the technical topic of the Phase I funding opportunity announcement. In addition, it is intended that the small business grantee would be in a position to pursue commercial applications of the R&D at the end of Phase II. In many cases, Phase II results in a prototype product or a working process that can be demonstrated to a potential investor or customer (either in the private sector or in the Federal government, including the Department of Energy).

This Funding Opportunity Announcement (FOA) is supplemental to the FY 2010 SBIR/STTR Phase I Funding Opportunity Announcement (DE-FOA-0000161); therefore, general information already provided in the FY 2010 FOA also applies to this Phase II process. The Department of Energy has determined that projects under the following Topic will no longer be funded with SBIR/STTR funds. Phase I awardees under this topic should not apply for Phase II funding.

- 56. Search, Discovery, and Communication of Scientific and Technical Knowledge in Distributed Systems

If a conflict arises, this Phase II FOA will govern.

## **PART II – AWARD INFORMATION**

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

DOE anticipates awarding grants under this Funding Opportunity Announcement (FOA).

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

Approximately \$116 Million is expected to be available for awards under this FOA.

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

Ceiling (i.e., the maximum amount for an individual award made under this FOA):  
\$1,000,000 for SBIR awards and *\$750,000 for STTR awards.*

Floor (i.e. the minimum amount for an individual award made under this FOA): \$1.00

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

DOE anticipates making approximately 120 awards under this FOA depending on the size of the awards.

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

The average award size for the SBIR program in FY 2010 was \$939,464 and for the STTR program was \$749,952

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

DOE anticipates making awards that will run for up to 24 months over two budget periods. The first budget period will cover a period of 12 months. **Funding for the 2<sup>nd</sup> budget period will be contingent on the demonstration of adequate progress, evaluation of programmatic priorities, and availability of funds.**

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

DOE is accepting renewal (Phase II) applications under this FOA. Renewal (Phase II) applications are requests for additional funding for a period subsequent to that provided by a current award or Phase I award. Renewal (Phase II) applications compete with all other applications and must be submitted by an established due date/deadline. In preparing a renewal (Phase II) application, applicants should assume that reviewers will not have access to previous applications. The application should be developed as fully as though the applicant is applying for the first time. The application must include all the information required for a new project, plus the project narrative section should discuss the results from prior work.

## **PART III - ELIGIBILITY INFORMATION**

### **A. ELIGIBLE SBIR APPLICANTS**

Only United States small business concerns (SBCs) are eligible to submit SBIR applications. Joint ventures, as defined in "Appendices/Reference Material," may apply, provided the entity created also qualifies as a small business. A small business concern is one that, at the time of award for both Phase I and Phase II SBIR awards, meets all of the following criteria:

1. Organized for profit, with a place of business located in the United States, which operates primarily within the United States or which makes a significant contribution to the United States economy through payment of taxes or use of American products, materials or labor;
2. In the legal form of an individual proprietorship, partnership, limited liability company, corporation, joint venture, association, trust or cooperative, except that where the form is a joint venture, there can be no more than 49% participation by business entities in the joint venture;
3. At least 51% owned and controlled by one or more individuals who are citizens of, or permanent resident aliens in, the United States, or it must be a for-profit business concern that is at least 51% owned and controlled by another for-profit business concern that is at least 51% owned and controlled by one or more individuals who are citizens of, or permanent resident aliens in, the United States -- (except in the case of a joint venture);
4. Has, including its affiliates, not more than 500 employees and meets the other regulatory requirements found in 13 C.F.R. Part 121. Business concerns, other than investment companies licensed, or state development companies qualifying under the Small Business Investment Act of 1958, 15 U.S.C. 661, et seq., are affiliates of one another when either directly or indirectly, (a) one concern controls or has the power to control the other; or (b) a third-party/parties controls or has the power to control both.

Control can be exercised through common ownership, common management, and contractual relationships. The term "affiliates" is defined in greater detail in 13 C.F.R. 121.3-2(a). The term "number of employees" is defined in 13 C.F.R. 121.3-2(t).

Further information may be obtained by contacting the Small Business Administration Size District Office at <http://www.sba.gov/size/>.

## **B. ELIGIBLE STTR APPLICANTS**

Only United States small business concerns (SBCs) are eligible to submit STTR applications. A small business concern is one that, at the time of award for both Phase I and Phase II STTR awards, meets all of the following criteria:

1. Organized for profit, with a place of business located in the United States, which operates primarily within the United States or which makes a significant contribution to the United States economy through payment of taxes or use of American products, materials or labor;
2. In the legal form of an individual proprietorship, partnership, limited liability company, corporation, joint venture, association, trust or cooperative, except that where the form is a joint venture, there can be no more than 49% participation by business entities in the joint venture;
3. At least 51% owned and controlled by one or more individuals who are citizens of, or permanent resident aliens in, the United States.

Has, including its affiliates, not more than 500 employees and meets the other regulatory requirements found in 13 C.F.R. Part 121. Business concerns, other than investment companies licensed, or state development companies qualifying under the Small Business Investment Act of 1958, 15 U.S.C. 661, et seq., are affiliates of one another when either directly or indirectly, (a) one concern controls or has the power to control the other; or (b) a third-party/parties controls or has the power to control both.

Control can be exercised through common ownership, common management, and contractual relationships. The term "affiliates" is defined in greater detail in 13 C.F.R. 121.3-2(a). The term "number of employees" is defined in 13 C.F.R. 121.3-2(t).

Further information may be obtained by contacting the Small Business Administration Size District Office at <http://www.sba.gov/size/>.

## **C. PARTICIPATION BY FEDERALLY FUNDED RESEARCH AND DEVELOPMENT CENTER (FFRDC) CONTRACTORS**

Federally Funded Research and Development Center (FFRDC) contractors are not eligible for an award under this FOA, but they may be proposed as a team member subject to the following guidelines:

1. Authorization for non-DOE/NNSA FFRDCs: The Federal agency sponsoring the FFRDC contractor must authorize in writing the use of the FFRDC contractor on the proposed project and this authorization must be submitted with the application. The

use of a FFRDC contractor must be consistent with the contractor's authority under its award and must not place the FFRDC contractor in direct competition with the private sector.

2. Authorization for DOE/NNSA FFRDCs: The cognizant DOE contracting officer must authorize in writing the use of a DOE/NNSA FFRDC contractor on the proposed project and this authorization should be submitted with the application, if available, and in any case, must be submitted prior to any award. The following wording is acceptable for this authorization.

“Authorization is granted for the \_\_\_\_\_ Laboratory to participate in the proposed project. The work proposed for the laboratory is consistent with or complimentary to the missions of the laboratory, will not adversely impact execution of the DOE/NNSA assigned programs at the laboratory, and will not place the laboratory in direct competition with the domestic private sector.”

Failure to obtain such approval in a timely manner may delay the project if a grant is awarded.

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

#### **D. COST SHARING**

Cost sharing is not required. However, any commercial contributions will be considered as part of the evaluation. See Part IV, Section C, Phase II Funding Commitment (Commercial Contribution) [OPTIONAL] and Phase III Follow-On Funding Commitment [OPTIONAL] and Part V, Section A, Merit Review Criteria number 2.

#### **E. OTHER ELIGIBILITY REQUIREMENTS**

The research or R&D must be performed in the United States for both Phases I and II. "United States" means the 50 states, the territories and possessions of the United States, the Commonwealth of Puerto Rico, the Trust Territory of the Pacific Islands, and the District of Columbia. Non-U.S. citizens are eligible to perform work on SBIR/STTR projects provided he/she is legally empowered to work in the U.S. at the time that an award is made.

1. Restrictions on Submitting Applications

Applications for Phase II funding should be submitted during this current review cycle and must be submitted to the same program (i.e., SBIR or STTR) for which the Phase I award was made.

## 2. Restrictions on the Level of Small Business Participation

**SBIR** - At least 50 percent of the research or analytical effort must be performed by the small business. Accordingly, at least 50 percent of the total funding requested on the budget form, excluding any purchased or leased equipment, materials, and supplies (whether purchased by the applicant or a subcontractor), must be allocated to the small business.

**STTR** - STTR awards will be made to small businesses for cooperative R&D to be conducted jointly with a research institution. At least 40 percent of the work must be performed by the small business, and at least 30 percent of the work must be performed by a **single** research institution. The research institution must be the same as that used in the Phase I research, except under very unusual circumstances, which must be explained and approved by the DOE Project Officer. Accordingly, at least 40 percent of the total funding requested on the budget form, excluding any purchased or leased equipment, materials, and supplies (whether purchased by the applicant, the research institution, or a subcontractor), must be allocated to the small business, and at least 30 percent must be allocated to a single research institution.

A [level of effort worksheet](#) is provided to assist in calculating the analytical effort for the project.

## 3. Restrictions on the Principal Investigator (PI)

- a. **General PI Requirements and Restrictions** - The Principal Investigator (PI) is the key individual designated by the applicant to direct the project. The PI must be knowledgeable in all technical aspects of the grant application and be capable of leading the research effort. Because DOE's evaluation of the grant application is critically dependent on the qualifications of the PI, changes in the PI that are made after award selection are strongly discouraged. Requests for PI changes will be closely scrutinized and may cause delays in grant execution.

In addition, the PI must devote a minimum of 520 hours to the project or at least 5 hours per week if the project is less than 24 months in duration. If the application is selected for funding, the PI will be required to sign a statement certifying adherence to all PI requirements. Applicants must state the duration of the project in weeks, in order to make clear that this requirement is fully met.

In order to ensure appropriate technical guidance for the project, only one PI will be accepted per project. Processing of applications that include co-PIs may be delayed while the error is corrected by the applicant. Before a grant is awarded, the PI will be required to sign a statement certifying adherence to these requirements. Non-U.S. citizens are eligible to perform work on SBIR/STTR projects provided he/she is legally empowered to work in the U.S. at the time that an award is made.

- b. Additional PI Restrictions when submitting to SBIR Only - To be awarded a SBIR grant, the applicant must meet the general requirements and the PI's primary employment must be with the small business at the time of award and during the conduct of the proposed research. Primary employment means that no less than 20 hours per week is spent in the employment of the small business during the conduct of the project and no more than 19 hours per week spent in the employment of another organization.
  - c. *Additional PI Restrictions when submitting to STTR Only – to be awarded a STTR grant, the applicant must meet the general requirements and the PI's primary employment may be with the small business or the research institution. However, the small business must still provide technical control and oversight of the project. If the PI is employed by the research institution, their primary employment (at least 20 hours per week) must be with the research institution in order to qualify under STTR.*
  - d. PI Restrictions when submitting to both SBIR and STTR – Applicants submitting to both programs must adhere to the PI restrictions set forth. Therefore, if the PI is employed by the small business, the applicant is eligible to submit to both programs. However, in cases where the PI is employed by the Research Institution, the application will only be considered under the STTR Program.
4. Restrictions on the Level of Small Business Participation

For both SBIR and STTR, there are requirements on the amount of the research or analytical effort that must be performed by the small business in order to be selected for and to receive a grant. The research or analytical effort is defined as the total requested funding minus the cost of any purchased or leased equipment, materials, and supplies (whether purchased by the applicant, a research institution, or by any other subcontractor). A level of effort worksheet may be found at [http://www.sc.doe.gov/sbir/solicitations/FY%202011/level\\_of\\_effort.doc](http://www.sc.doe.gov/sbir/solicitations/FY%202011/level_of_effort.doc) or [http://www.sc.doe.gov/sbir/solicitations/FY%202011/level\\_of\\_effort.xls](http://www.sc.doe.gov/sbir/solicitations/FY%202011/level_of_effort.xls) to assist you in assuring the application is in compliance. Work performed by a consultant, a DOE national laboratory, or any other subcontractor, will be considered as external to the applicant organization when complying with these requirements.

5. Restrictions on the Management of SBIR/STTR Projects

All SBIR and STTR funding agreements are made with the Small Business regardless of the proportion of the work or funding of each of the performers (small business, research institution, subcontractor, etc.) under the grant. As the primary grantee, the small business has the overall responsibility of the project, including financial management and the direction and control of the performance. *For STTR projects, where the principal investigator is from the research institution, the small business will maintain the overall supervision of the project, while the principal investigator will manage the research portion of the project.*

It is recommended that all agreements between the small business and any subcontractor (*including the research institution collaborating in a STTR project*) reflect the controlling management position of the small business during the performance of the Phase I and/or Phase II. This includes, but is not limited to, any business plan concerning agreements and responsibilities between the parties or for the commercialization of the resulting technology.

6. Restrictions on Subcontracting and Consultants

Consultants should not be employees of either the small business or any subcontractor. Small business personnel cannot be reimbursed with DOE funding as a consultant or employee of a subcontractor under the project.

## 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 FOA 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 FORMS OF SBIR/STTR APPLICATION

Part IV, of Section C (this Section) describes all the required and optional information that must be included in the grant application package. All of the following components (numbers 1-7) must be included in the grant application package or at least addressed. All of the information provided in response to numbers 1-7 below will be evaluated using the Review Criteria described in Part V, Application Review Information.

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 FOA.

1. **SF 424 (R&R). [MANDATORY]** Complete this form first to populate data in other forms. Identify the Phase I Award Number assigned to the project in the Federal Identifier field (number 4). 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 Applicant and Recipient Page at [http://www.management.energy.gov/business\\_doe/business\\_forms.htm](http://www.management.energy.gov/business_doe/business_forms.htm), under Certifications and Assurances.
2. **RESEARCH AND RELATED Other Project Information. [MANDATORY]** Complete questions 1 through 6 and attach files. If the answer to question 3 is “Yes”, you must identify proprietary information with a legend on the first page of your project narrative and on each page that contains proprietary information in accordance with instructions provided in Part VIII, Sections D, and F. Failure to comply may

result in DOE's inability to treat such information as proprietary and may delay the award process.

For fields 7 through 12, the files that are attached must comply with the following instructions:

a. **Project Summary/Abstract (Field 7 on the Form) [MANDATORY]**

The project summary/abstract must contain a summary of the proposed activity suitable for dissemination to the public. 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 Attachment" to attach.

The purpose of the project summary is to communicate the overall sense of the project, not every step of the work plan or every accomplishment in Phase I. Statements of future applications or benefits belong in the section on Commercial Applications and Other Benefits. **Do not use acronyms, abbreviations, first-person references, or any proper names** (including the name of the small business, any subcontractors or institutions, or any trade or product name).

The summary must include:

1. Company name
2. Project Title
3. Principal Investigator
4. Topic number/subtopic letter
5. Statement of the problem or situation that is being addressed. Describe the problem or situation being addressed – be sure that the Department of Energy interest in the problem is clear, but not in such a way that implies that any service or products are being provided for the direct benefit of DOE rather than for the advancement of a public purpose. (Typically one to three sentences).
6. General statement of how this problem is being addressed. This is the overall objective of the combined Phase I and Phase II projects. How is this problem being addressed? What is the overall approach of the combined Phase I/Phase II project? (Typically one to two sentences).
7. What was done in Phase I? (Typically two to three sentences).
8. What is planned for the Phase II project? (Typically, two to three sentences).
9. Commercial Applications and Other Benefits (limited to the space provided). Summarize the future applications or public benefits if the project is carried over into Phase III and beyond. Do not repeat information already provided above.

10. Key Words - Provide listing of key words that describe this effort.

11. Summary for Members of Congress: (layman's terms, two sentences Maximum 50 words). The Department notifies members of Congress of awards in their districts. Therefore, please provide, in clear and concise layman's terms, a very brief summary of the project, suitable for a possible press release from a Congressional office.

Suggested Format: In the first sentence, state the problem being addressed so that the research need is clear. In the second sentence, state what is being done to address the problem.

b. **Project Narrative (Field 8 on the form) [MANDATORY]**

The project narrative is considered the "main" portion of the grant application.

Phase II grant applications must propose research and development required to meet the DOE objectives stated in the technical topic of the Phase I funding opportunity announcement and provide sufficient information to convince DOE and members of the research community who review the grant application that it is worthy of support under the stated evaluation criteria in Part V. The work proposed in Phase II, assuming that it proceeds successfully, should be suitable in nature for subsequent progression into Phase III. Although there is no page limitation, the application should be written succinctly using the outline below. To attach a Project Narrative, click "Add Attachment."

The project narrative must include ALL of the following using this outline:

Cover page – Provide company-specific and project information including company name and address, principal investigator, project title, topic number, subtopic letter, and grant award number.

Proprietary Data Legend – If applicable. See Part VIII, Sections D and F

Significance, Background Information, and Technical Approach

- Identification and Significance of the Problem or Opportunity, and Technical Approach - Define the specific technical problem or opportunity addressed by your application. Provide enough background information, so that the importance of the problem/opportunity is clear. Indicate the overall technical approach to the problem/opportunity and the part that the proposed research plays in providing needed results.
- Anticipated Public Benefits - Discuss the technical, economic, social, and other benefits to the public as a whole, if the project is successful and is carried over into Phase III. Identify specific groups in the commercial sector as well as the Federal government that would benefit from the projected results. Describe the resultant product or process, the likelihood that it could lead to a marketable product, and the significance of the market.

- Degree to which Phase I has Demonstrated Technical Feasibility - Discuss the purpose of your Phase I research, the research carried out, the research findings or results, and your estimate of technical feasibility. In particular, address the degree to which the Phase I objectives have been met.

The Phase II application should include all relevant information concerning the research carried out in Phase I. Technical reviewers are not always the same as used in Phase I, therefore, may not be familiar with the Phase I application.

c. The Phase II Project

- Technical Objectives - State the specific technical objectives of the Phase II research and development.
- Work Plan - This section should be a substantial part of the technical application. Provide an explicit, detailed description of the Phase II research approach and work to be performed. Indicate what will be done, by whom (small business, subcontractors, or consultants) where it will be done, and how the work will be carried out.

Link the work plan to the objectives of the proposed project. Discuss methods planned to achieve each objective or task explicitly and in detail. Be sure to address how the research or research and development effort could lead to a product, process, or service in Phase III. Show how the management direction and control of the project will be assured. Regardless of the proportion of the work or funding of each of the performers under the grant, the small business is to be the primary grantee with overall responsibility for its performance.

- Performance Schedule - Phase II projects are typically for 24 months. Please note that the performance period should cover two budget periods of up to 12 months each. Funding for the 2<sup>nd</sup> budget period will be contingent on the demonstration of adequate progress, evaluation of programmatic priorities, and availability of funds. Please state in this section if the project will be completed in less than 24 months. Briefly describe the important milestones and the estimated amount of time for completing each task described in the work plan.

Facilities/Equipment - Describe available equipment and physical facilities necessary to carry out the Phase II effort. Equipment is defined as an article of tangible, nonexpendable, personal property, including exempt property, charged directly to the award, having a useful life of more than one year and an acquisition cost of \$5,000 per unit or more. Items of equipment to be leased or purchased must be described and justified in this section. Title to equipment purchased under this award lies with the government. It may be transferred to the grantee where such transfer would be more cost effective than recovery of the property by the government. Awardees wishing to obtain title should contact their Contract Specialist prior to project completion for the procedure to follow to make such a request. If the equipment,

instrumentation, and facilities are not the property of the applicant and are not to be purchased or leased, the source must be identified and their availability and expected costs specifically confirmed in this section. A principal of the organization that owns or operates the facilities/equipment must provide written verification regarding the availability and cost of facilities/equipment and any associated technician cost. Small businesses may get credit for obtaining this equipment as an in-kind Phase II commercial contribution as described in Part V, Section A, Criterion 2.

To the extent possible in keeping with the overall purposes of the program, only American-made equipment and products should be purchased with the funds provided by the financial assistance under the Phase II awards.

- Consultants and Subcontractors (*including Research Institutions for STTR*)
- Research Institution – If the grant application contains substantial collaboration with a research institution (*required for STTR, optional for SBIR*), (1) identify the name and address of the institution, the name, phone number, and email address of the certifying official from the research institution, and the total dollar amount of the subcontract; (2) describe in detail the work to be done by this institution in the Work Plan section; and (3) provided a detailed cost estimate including costs for labor, equipment, and materials, if any, as well as a specific statement certifying that they have agreed to serve in the manner and to the extent described in the Work Plan section of the grant application” from research institutions.

The research institution will be considered a subcontractor to the small business applicant. The research institution must provide a letter of commitment on official letterhead from an authorized representative of the institution which commits the institution to participate in the project as described in the grant application. The letter should be attached as an “Other Attachment” in field 12, on the Research & Related Other Project Information form. If selected for award, participation of the research institution will be verified by the Contracting Office.

- Other Consultants and Subcontractors – Involvement of consultants or subcontractors in the planning and research stages of the project is permitted provided the work is performed in the United States. If consultants and/or subcontractors are to be used, this section of the application must identify them by name, identify whether the party is being proposed as a consultant versus as a subcontractor, and should provide "Letters of Commitment" from an authorized representative of the consultants and/or subcontractors. The letters must provide a detailed cost estimate [including costs for labor, equipment, and materials, if any] for the consultant or subcontractor, as well as a specific statement certifying that they have agreed to serve in the manner and to the extent described in the Work Plan section of the grant application. Each letter must be on official letterhead with an authorizing representative’s contact information provided and submitted as an “Other Attachment” to the application. If selected for award, the

Contracting Officer will verify the participation of any subcontractors and/or consultants and will require budget and budget explanations for subcontractors and verification of the rates for consultants.

Note: Consultants should not be employees of either the small business or any subcontractor. Small business personnel cannot be reimbursed with DOE funding as a consultant or employee of a subcontractor under the project. Non-U.S. citizens are eligible to perform work on SBIR/STTR projects provided he/she is legally empowered to work in the U.S. at the time that an award is made.

- Phase II Funding Commitment (Commercial Contribution) [OPTIONAL] - While not a requirement to obtain Phase II funding, applicants are strongly encouraged to submit a Phase II commitment from the private sector or non-SBIR/STTR funding sources which will be considered as part of the evaluation criterion on “Impact.” To receive full credit, the Phase II funding commitment must be at least an additional 20 percent or more of the Phase II funding requested from the DOE and provided to or by the small business concern during the Phase II project period.

Partial credit will be given for commitments that are at least an additional 10 percent. The funds must be used for research or research and development in an expanded Phase II project (i.e., expanded by the amount of the commercial contribution), and the funds cannot be contingent on meeting technical objectives in Phase II. In-kind contributions are allowed; however, the applicant or donor must estimate the dollar value of any in-kind contribution. Letters merely expressing interest or intent without making a firm commitment, as described above, will receive no credit under this evaluation sub-criterion. The Phase II commitment from the donor must be submitted with the Phase II grant application as a separate attachment. Add as an attachment in field 12, “Other Attachments,” on the Research & Related Other Project Information form. You should describe the Phase II Funding Commitment in the “Work Plan” section of the technical proposal. The amount of the commercial contribution should NOT appear on the budget page.

- Phase III Follow-On Funding Commitment [OPTIONAL] - Applicants are encouraged to submit a Phase III follow-on funding commitment which will be considered as part of the evaluation criterion on Impact. To receive full credit, the Phase III follow-on funding commitment must provide that a specific dollar amount of funds (at least one-half of that requested from DOE for Phase II) will be made available to or by the small business. Partial credit will be given for smaller commitments. The commitment must be signed by a person with the authority to make it, indicate when the funds will be made available, and contain specific technical objectives which, if achieved in Phase II, will make the commitment exercisable by the applicant. If the commitment is firm regardless of technical objectives achieved, it should state so. The commitment may

include: (1) third party financing; (2) self-financing (in which case the proposing small business must demonstrate the ability to provide the Phase III funding); (3) state or local government financing; or (4) federal funding. In-kind contributions are allowed; however, the applicant or donor must estimate the dollar value of any in-kind contributions. The Phase III funding cannot be contingent on obtaining a patent because of the length of time this process requires. Letters merely expressing interest or intent without making a firm commitment, as described above, will receive no credit under this evaluation sub-criterion. The Phase III commitment must be submitted with the Phase II grant application as a separate attachment. Add as an attachment in field 11, "Other Attachments," on this form. You should also reference it in the technical proposal in the "Work Plan" section.

- **Bibliography & References Cited** (Field 9 on the form). [DO NOT USE THIS FIELD] READ BELOW.

Include this information, if any, in the project narrative. Do not attach a file in this field.

- **Facilities & Other Resources** (Field 10 on the form) [DO NOT USE THIS FIELD] READ BELOW

Include this information, if any, in the project narrative. Do not attach a file in this field.

- **Equipment** (Field 11 on the form) [DO NOT USE THIS FIELD] READ BELOW

Include this information, if any, in the project narrative. Do not attach a file in this field.

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

Note: Field 12 will hold more than one attachment. If you need to elaborate on your responses to questions 1-6 on the "Other Project Information" document, provide the information in a single file named "projinfo.pdf". Click on "Add Attachments" in Field 12 to attach file.

Also, attach the following files:

- Signed Letter of Phase II Funding Commitment, if applicable
- Phase III Follow-On Funding Commitment, if applicable

- Signed Letter of Commitment from Research Institution (for STTR applications). Letter must include name and address of institution, dollar amount of subcontract, and Certifying Official's name, phone number and email address.
- Letters of Commitment from consultants, subcontractors or other third parties. The letters must state an agreement to serve in the manner and to the extent described in the "Work Plan" section of the technical proposal. This letter must also include a breakdown of costs (labor, materials, supplies, travel, etc.) and be signed by the consultant or subcontractor or authorizing party, certifying their availability and salary (for consultants). Note: Consultants are not employees of either the small business or any subcontractor.
- PI Certification (May be found at [www.science.doe.gov/sbir/submission/picert.htm](http://www.science.doe.gov/sbir/submission/picert.htm)).
- [Level of Effort Worksheet](#) (discussed in Part III) located at: [http://www.sc.doe.gov/sbir/solicitations/FY%202011/level\\_of\\_effort.doc](http://www.sc.doe.gov/sbir/solicitations/FY%202011/level_of_effort.doc) or [http://www.sc.doe.gov/sbir/solicitations/FY%202011/level\\_of\\_effort.xls](http://www.sc.doe.gov/sbir/solicitations/FY%202011/level_of_effort.xls).

### **3. RESEARCH AND RELATED Senior/Key Person. [MANDATORY]**

Complete this form before the Budget form to populate data on the Budget form. Principal Investigator and other Key Personnel - The Principal Investigator (PI) is the key individual designated by the applicant to direct the project. Only one PI is acceptable per project. The PI does not need to be a U.S. citizen; however, all work must be performed in the United States. See "Restrictions on the Principal Investigator" in Part III E, Other Eligibility Requirements. The PI must be knowledgeable of the critical technical aspects of the grant application and be capable of leading the research effort in the United States. Because DOE's evaluation of the grant application is critically dependent on the qualifications of the PI, changes in the PI that are made after award selection are strongly discouraged. Requests for PI changes will be closely scrutinized and may cause delays in grant execution. DOE's preference is that the PI be the same individual from the Phase I project, if possible.

In addition, the PI must devote a minimum of 520 hours to the project or at least 5 hours per week if the project is less than 24 months in duration. If the application is selected for funding, the PI will be required to sign a statement certifying adherence to all PI requirements. Applicants must state the duration of the project in weeks, if the project is to be completed in less than 24 months, in order to make clear that this requirement is fully met.

Processing of applications that include co-PIs may be delayed while the error is corrected by the applicant. Non-U.S. citizens are eligible to perform work on SBIR/STTR projects provided he/she legally resides in the U.S. and is legally empowered to work in the U.S. at the time that an award is made and during the performance of the grant period.

Additional PI Restrictions for SBIR Only – If the Phase I project was awarded as an SBIR grant, then the Phase II application must be submitted for an SBIR award and the PI’s primary employment must be with the small business at the time of award and during the conduct of the proposed research. Primary employment means that no less than 20 hours per week is spent in the employment of the small business during the conduct of the project and no more than 19 hours per week spent in the employment of another organization.

Additional PI Restrictions for STTR Only - If the Phase I project was an STTR grant, then the Phase II application must be submitted for an STTR award and the PI’s primary employment may be with the small business or the research institution. However, the small business must still provide technical control and oversight of the project. Primary employment with the small business means that no less than 20 hours per week is spent in the employment of the small business during the conduct of the project and no more than 19 hours per week spent in the employment of another organization. Primary employment with the research institution means that no less than 20 hours per week is spent in the employment of the research institution during the conduct of the project and no more than 19 hours per week spent in the employment of another organization.

Beginning with the PI, provide a profile for each senior/key person proposed. Each senior/key person must be aware that he/she is included in the grant application and **must agree** to perform the work if awarded. 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. Subawardees and consultants must be included if they meet this definition. For each senior/key person provide:

a. ***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:

- i. ***Education and Training.*** Undergraduate, graduate and postdoctoral training, provide institution, major/area, degree and year.
- ii. ***Research and Professional Experience:*** Beginning with the current position list, in chronological order, professional/academic positions with a brief description.
- iii. ***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.

- iv. Patents, copyrights, and software systems developed may be provided in addition to or substituted for publications.
- v. *Synergistic Activities*. List no more than five (5) professional and scholarly activities related to the effort proposed.

b. ***Current and Pending Support***

Provide a list of all current and pending support (both Federal and non-Federal) for the Project Director/Principal Investigator (PD/PI) and senior/key persons, including subawardees, for ongoing projects and pending applications. For each organization providing support, show the total award amount for the entire award period (including indirect costs) and the number of person-months per year to be devoted to the project by the senior/key person. Concurrent submission of an application to other organizations for simultaneous consideration will not prejudice its review. Save the information in a separate file and attach to the “Attach Current and Pending Support” field in each profile.

**4. RESEARCH AND RELATED BUDGET [MANDATORY]**

You must provide a separate budget for each year of support requested and a cumulative budget for the total project period. SBIR applicants may request funding of up to \$ 1,000,000 for up to 24 months over two budget periods. The first budget period should cover a period of 12 months. Funding for the 2<sup>nd</sup> budget period will be contingent on the demonstration of adequate progress, evaluation of programmatic priorities, and availability of funds. The amount budgeted for the first 12 month budget period should not exceed \$500,000.

*STTR applicants may request funding of up to \$750,000 for up to 24 months over two budget periods. The first budget period should cover a period of 12 months. Funding for the 2<sup>nd</sup> budget period will be contingent on the demonstration of adequate progress, evaluation of programmatic priorities, and availability of funds. The amount budgeted for the first 12 month budget period should not exceed \$375,000.*

Fully complete the Research and Related Budget 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 FOA (See PART IV, G). Note, however, that foreign travel and participant/trainee costs are typically considered unallowable costs unless approved by the DOE Project Officer and the SBIR/STTR Program Manager.

**DOE Technical Assistance Program (Section F, Field 8 [Optional])**

In accordance with the U. S. Small Business Administration Policy Directive, the DOE is able to offer discretionary technical and commercialization assistance to all DOE SBIR (*not STTR*) Phase II awardees. The purpose of this program is to provide technical assistance to SBIR awardees with the commercialization aspect of their respective SBIR innovations and products. If you wish to receive this assistance, please include \$4,000 each year (cumulative two-year cost \$8,000) in your budget justification in the section noted above. Please note that technical support may be provided via DOE vendor services using the funds from recipient budgets. Currently Foresight S&T is the technical and commercialization assistance provided for DOE SBIR. For more information on the DOE Technical Assistance Program (TAP), please visit the DOE TAP web portal at <http://doecapreg.foresightst.com/>.

**Budget Justification (Field K on the form) [MANDATORY]** Provide the required supporting information for all proposed costs, including hours and rates for all personnel. Provide any other information you wish to submit to justify your budget request. Attach a single budget justification file for the entire project period in Field K. The file automatically carries over to each budget year. Please note, that if you are selected for an award, additional budget explanation will most likely be required.

Note: All proposed purchase of equipment will be carefully reviewed relative to need and appropriateness for the research or R&D proposed. Although there is no absolute cap on indirect costs, grant applications will be evaluated for overall economy and value to DOE.

Travel funds must be justified and related to the needs of the project. Travel expenses for technical conferences are not permitted unless the purpose of attending the conference directly relates to the project (e.g., to present results of the project). Foreign travel is not normally an appropriate expense. Funds to cover travel expenses outside of the United States are considered an unallowable cost unless written approval has been obtained from the SBIR/STTR Program Manager.

With justification, Phase II grant funds may be used to pay up to \$10,000 in patent filing fees and related filing expenses for the first U.S. patent for subject inventions developed under the Phase I or Phase II projects. In the event some or the entire amount listed is not expended on a patent filing, the remaining funds may be budgeted to other allowable project costs.

Tuition expenses are allowable only if requested from a subcontractor that is a university as long as the amount requested for tuition is reasonable and comparable to what a student would be paid for performing research during the grant performance period.

Grants may include a profit or fee for the small business.

- Any commercial and/or in-kind contribution to the project should be reflected in the project narrative and not included on the budget pages.
- Round all funds to the nearest dollar.
- Complete level-of-effort worksheet located at:  
[http://www.sc.doe.gov/sbir/solicitations/FY%202011/level\\_of\\_effort.doc](http://www.sc.doe.gov/sbir/solicitations/FY%202011/level_of_effort.doc) or  
[http://www.sc.doe.gov/sbir/solicitations/FY%202011/level\\_of\\_effort.xls](http://www.sc.doe.gov/sbir/solicitations/FY%202011/level_of_effort.xls)  
 (Attach in Field 12 – Research & Related Other Project Information)

**5. R&R SUBAWARD BUDGET ATTACHMENT(S) FORM. [IF APPLICABLE]**  
**Budgets for Subawardees (including research institutions).** You must provide a separate, cumulative R&R budget and budget justification for each subawardee that is expected to perform work estimated to be more than \$100,000 or 50 percent of the total effort (whichever is less).

Note: After the Subawardee 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 subawardee’s name (plus .xfd) as the file name (e.g., ucla.xfd or energyres.xfd). Additional budget information for any subawardee will likely be required if selected for award.

**6. SBIR/STTR INFORMATION FORM [MANDATORY]**

Complete all the required forms in accordance with the pop-up instructions on the form.

For Question 7, the attachment should be in accordance with the following instructions:

- Commercial Potential Review (Your Commercialization Plan cannot exceed 15 pages, excluding Letters of Support).** A succinct commercialization plan must be included in the Phase II grant application. This information will be evaluated and considered part of the score for the “Impact” criteria discussed in Part V. The DOE recognizes that each innovation requires a varied strategy to generate returns on invested capital and that no two businesses are exactly alike. Therefore, DOE supports a broad array of commercialization strategies. Each strategy requires varied emphasis on the parts of the plan depending on your innovation and the market landscape. For instance, the strategy and mechanisms for leveraging and protecting intellectual property (IP) vary according to industry and innovation.

The Commercialization Plan is your roadmap for the future and should convey how you plan to generate profits from your innovation. It should represent a compelling vision that describes a unique business opportunity that could be addressed with continued support from Phase II funding. The depth and quality of the analysis within your Commercialization Plan is a critical element of the DOE SBIR/STTR application review. Please Note: All assumptions and estimates provided should be clearly stated as such and evidence of validation should be provided in a footnote. Where you provide numerical data (e.g.

market size, price, etc.) or data about customer needs, market forces, barriers to entry and the like, you should indicate the source of the data using footnotes. Market research reports, articles by experts in trade publications or professional journals, interviews, focus groups, surveys, are among commonly used sources of data.

To help you prepare your plan, DOE maintains an SBIR Technical Assistance Portal at <http://doecapreg.foresightst.com>. Although you must register for access, there is no fee for use of the site. The site contains a variety of data and tools to help you prepare your Commercialization Plan.

The following four sections must be addressed in your Commercialization Plan:

### Market Opportunity

1. Describe succinctly what product or service you are planning to deliver based on your innovation.
  - a. Who is your customer and what current or emerging needs will your product or service address?
  - b. Describe the critical needs that your product or service is fulfilling for your customer.
  - c. How does the target customer(s) currently meet the need that you are addressing and what do they pay to meet the need?
  - d. What is your customer willing to pay for your product or service?
  - e. What is the value proposition for your product or service?
  - f. Are the customers located domestically, internationally, or both?
2. Describe how your technology/innovation objectives and critical milestones enable you to address the market opportunity.
  - a. What is the current size of the market you plan to enter, in terms of either numbers of customers or revenues? (If you use number of customers, estimate revenues based on the anticipated selling price of your product or service.)
  - b. What are the growth trends for the market and the key market drivers that will affect whether customers will buy your product or service?
  - c. What barriers to entry exist in this market which will inhibit sales of your product or service?
3. Describe the channels you would employ to reach the targeted customer?
4. What business model will you adopt to generate revenue from your innovation?
  - a. Will you make and sell? License? Form a strategic alliance with a company already in the industry? Use a different model?
  - b. Explain why this model makes sense for the market opportunity described.
5. If there are potential societal, educational, or scientific benefits beyond commercial considerations that will generate goodwill for your company or the product or service, they should be included here and explained in sufficient detail to convey the significance of the effort.

### Competition/Intellectual Property

1. Describe currently existing products or services that are found in the patent literature (and if relevant, copyright and trademark literature) or that is emerging from research or R&D which may be substitutes for your product or service.
  - a. How does your product or service match up to these substitutes in terms of the needs customers are seeking to meet?
  - b. Who is developing, making, and selling those products or services and what do you anticipate the competitive landscape to look like when you get to market?
2. Describe intellectual property (IP) rights you have secured for your technology to date and if any procedures are underway to expand or enhance the protection provided by those rights. Please describe your actions to protect these rights.
3. Describe which IP is closest and which is most threatening to your “freedom to operate” and how you are different enough to be able to secure your freedom to operate.
4. What other IP will you need to secure rights to make, use, or sell in order to address the market opportunity described above?

### Company/Team

1. Provide a short description of the origins of the company.
2. What type of corporate structure is in place?
3. What is the current capitalization and is it sufficient for implementing your Commercialization Plan?
4. What is the revenue history for the past three years (Phase I through Phase II)?
5. Provide a table with percentages or sums of operating capital or revenue: product sales, consulting/services, license revenues, research and development grants/contracts, and others?
6. What is the current employee count?
7. Give a brief description of the experience and credentials of the personnel responsible for taking the innovation to market and clarify how the background and experience of the team enhance the credibility of the Commercialization Plan.
8. What specific experience does the team lack and how will this be addressed during the remainder of the Phase II effort and beyond?
9. From what additional resources do you have commitments that address “8” above, e.g., Board of Directors, technical advisors, or retained legal counsel; and please provide details on names, affiliations, and expertise of these resources?

### Finance and Revenue Model

1. What are your costs to complete research and development, product, and production development/design/engineering, and to produce the product or service?
2. What are the costs required to implement your commercialization strategy?
3. Provide a table with costs for “1” and “2” and the revenues or other operating capital you can devote to these. If there is a shortfall, describe an appropriate staged finance plan that will provide the necessary cash given the market opportunity described above. If no additional cash is needed explain why you are confident that is the case.
4. Describe the revenue streams (licensing, product sales or other) associated with your Commercialization Plan.
5. When do you anticipate “first revenues” from each stream?
6. When do you expect to reach “break even”?
7. Provide annual pro formas for the next five years (two years of the Phase II effort + 3 years’ post Phase II). Income Statements are required. Cash Flow and Balance Sheets may be included if they are considered critical for your strategy. If not included, Cash Flow and Balance Sheets should be available upon request from DOE.
8. Explain how you will raise or access the appropriate funds for post-Phase II and beyond. Provide specific contacts, leads, previous relationships, and agreements already in place.
9. Are any other commitments in place which will affect your ability to raise Phase III follow-on funding?

Please Note: You must indicate the assumptions and estimates being made in this part of your application and clearly state the source of the data you have used to validate these assumptions or as a basis for making assumptions or estimates. You must also indicate the source for any numerical or other hard data provided, such as market size, price, market drivers, and barriers to entry. Evaluate the competitive advantages of this technology vs. alternate technologies that can meet similar market needs.

### **7. 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	Attach to
SF 424 (R&R)	PDF	N/A
RESEARCH AND RELATED Other Project Information	PDF	N/A
Project Summary/Abstract	PDF	Field 7
Project Narrative, including required appendices	PDF	Field 8
Level of Effort Worksheet	PDF	Field 12
RESEARCH & RELATED Senior/Key Person Profile (Expanded)	PDF	N/A
Biographical Sketch	PDF	Attach to appropriate block
RESEARCH & RELATED BUDGET	PDF	N/A
Budget Justification	PDF	Field K
SBIR/STTR Information	PDF	N/A
Commercialization Plan for Phase II (See Question 7)	PDF	Attach to appropriate block
Commercialization History, if applicable (See Question 8)	PDF	Attach to appropriate block
DOE Technical and Commercialization Assistance Support (Section F, Field 8, R&R Budget)	PDF	N/A
PROJECT/PERFORMANCE SITE LOCATION(S)	PDF	N/A
SF-LLL Disclosure of Lobbying Activities, if applicable	PDF	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 CFR 1040.5);
- Representations of Limited Rights Data & Restricted Software, if applicable
- Commitment Letter from Third Parties Contributing to Cost Sharing, if applicable;

- Fee justification;
- Representation concerning financial management system
- Consultant documentation/verification of rates

### **SBIR/STTR Certifications**

If selected for an award, **applicants will be required** to sign and submit one or more certification forms. These forms will be provided by the DOE Contract Specialist during award negotiation.

The following hyperlinked document is provided for information purposes only and is subject to changes and updates prior to award negotiation.

Principal Investigator Certification  
[www.science.doe.gov/sbir/submission/picert.htm](http://www.science.doe.gov/sbir/submission/picert.htm).

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

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

Pre-applications are not required.

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

Applications must be received by Ail 4, 2011, not later than 11:59 PM Eastern Day Light Time. Modifications will be accepted if received by the due date and deadline time. You are encouraged to transmit your application well before the deadline.

### **F. INTERGOVERNMENTAL REVIEW.**

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

### **G. FUNDING RESTRICTIONS.**

Funds will be allocated over the two budget periods. Funding for the 2<sup>nd</sup> budget period will be contingent on the demonstration of adequate progress, evaluation of programmatic priorities, and availability of funds.

In order to begin the Phase II project as soon as possible after applicants are notified of having been selected for Phase II funding, an amendment to the Phase I grant will be issued to provide funding for up to approximately four months of the Phase II effort. Approximately one-sixth of the requested amount will be obligated. During the period funded by this initial Phase II amendment, the Phase II portion of the grant will be negotiated.

Cost Principles: Costs must be allowable in accordance with the applicable Federal cost principles referenced in 10 CFR Part 600. The Cost Principles for Commercial Organizations may be found at [FAR Part 31](#).

Pre-award Costs: Recipients may charge to an award resulting from this announcement pre-award costs that were incurred within the ninety (90) calendar-day period immediately preceding the effective date of the award, if the costs are allowable in accordance with the applicable Federal cost principles referenced in 10 CFR Part 600. Recipients must obtain the prior approval of the contracting officer for any pre-award costs that are for periods greater than this 90 day calendar period.

Pre-award costs are incurred at the applicant's risk. DOE is under no obligation to reimburse such costs if for any reason the applicant does not receive an award or if the award is made for a lesser amount than the applicant expected or if the costs are found to be unallowable, unreasonable, or not allocable to this project.

## H. OTHER SUBMISSION AND REGISTRATION REQUIREMENTS

### 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.

**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.pdf> to guide you through the process. Designating an E-Business Point of Contact (EBiz POC) and obtaining a special password called an MPIN are important steps in the CCR registration process. Applicants, who are not registered with CCR and Grants.gov, should allow at **least 21 days** to complete these requirements. It is suggested that the process be started as soon as possible.

**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).

**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](mailto:support@grants.gov). Part VII of this Funding Opportunity Announcement (FOA) 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. 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

Questions regarding the content of the FOA 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. More information is available at

[https://www.fedconnect.net/FedConnect/PublicPages/FedConnect\\_Ready\\_Set\\_Go.pdf](https://www.fedconnect.net/FedConnect/PublicPages/FedConnect_Ready_Set_Go.pdf).

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.

**Modifications:** Notices of any modifications to this FOA will be posted on Grants.gov and the FedConnect portal. You can receive an email when a modification or an FOA 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 FOAs. More information is available at <http://www.fedconnect.net>.

**All applications should be in a single PDF file.**

## PART V - APPLICATION REVIEW INFORMATION

### A. Criteria

#### 1. Initial Administrative Review Criteria

The SBIR/STTR office will perform an initial review to ensure that the applications meet minimal requirements and include all required forms and documentation as sought in the Funding Opportunity Announcement.

#### 2. Merit Review Criteria

The Phase II grant application must contain enough information on progress accomplished under Phase I, by the time of Phase II grant application submission, to enable an evaluation of the project's promise if continued into Phase II.

Phase II grant applications will be evaluated for technical merit using the following criteria:

1. **Strength of the scientific/technical approach** as evidenced by: (1) the strength and innovativeness of the overall idea and approach for the combined Phase I/Phase II project, (2) the significance of the scientific or technical challenge, and (3) the thoroughness of the presentation.
  2. **Ability to carry out the project in a cost effective manner** as evidenced by: (1) the qualifications of the Principal Investigator, other key staff, consultants and subcontractors, if any, and the level of adequacy of equipment and facilities; (2) the soundness and level of adequacy of the work plan to meet the problem or opportunity; (3) with regard to the Phase I objectives, the degree to which Phase I has proven feasibility of the concepts; and (4) the degree to which the DOE investment in the project would be justified by the level of proposed research effort.
  3. **Impact** as evidenced by: (1) the significance of the technical and/or economic benefits of the proposed work, if successful, (2) the likelihood that the proposed work could lead to a marketable product or process, and (3) the likelihood that the project could attract further development funding after the SBIR or STTR project ends. Phase II applications will be evaluated for commercial potential using the Commercialization Plan data: (1) Market Opportunity, (2) Competition/Intellectual Property, (3) Company/Team, and (4) Finance and Revenue Model. Each section should be developed with careful analysis of your company's position within the industry and the market opportunity that is enabled by the proposed innovation. The key points required for each section are further described below in Part V, Section B. "Review and Selection Process."
- #### 3. Other Selection Factors.
- The Selection Official may consider other program policy factors such as program balance of funds distribution and needs of the technical programs.

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

### **1. Merit Review**

Phase II grant applications will be subject to a detailed technical evaluation by experts, both inside and outside the Government. The DOE will not fund any grant application for which there are weaknesses identified with respect to any of the three evaluation criteria, as determined by the review process. In addition, because the DOE supports only high quality research and development, grant applications will be considered candidates for funding only if they receive the highest rating with respect to at least two of the three criteria.

### **2. Selection**

Each technical program area participating in the SBIR/STTR programs is provided a predetermined target number of applications that they may select for funding. The grant applications that are considered candidates for funding are ranked in order of the highest quality and strongest program relevance based on the results of the evaluation. Selections are made from this ranked list until the program's SBIR/STTR Phase II budget is exhausted. The Selection Official may also consider other program policy factors such as program balance and needs of the technical programs.

### **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.**

The DOE anticipates making award decisions by late June 2011.

## PART VI - AWARD ADMINISTRATION INFORMATION

### A. AWARD NOTICES.

- a. **Notice of Selection.** The SBIR/STTR Program will notify all applicants that request funding of the outcomes via email
- b. **Notice of Award.** An Assistance Agreement issued by the contracting officer is the authorizing award document. The initial funding Assistance Agreement normally includes, either as an attachment or by reference: 1. Special Terms and Conditions; 2. General Terms and Conditions for DOE SBIR and STTR grants; 3. Application as approved by DOE/NNSA; 4. National Policy Assurances to be incorporated as award terms; 5. Budget Summary; 6. Federal Assistance Reporting Checklist and Instructions, which identifies the reporting requirements; and 7. DOE assistance regulations at 10 CFR Part 600.

### B. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS.

#### 1. Administrative Requirements.

The administrative requirements for DOE grants are contained in 10 CFR 600 (See: <http://ecfr.gpoaccess.gov>).

#### DUNS and CCR Requirements

Additional administrative requirements for DOE grants are contained in 2 CFR, Part 25 (See: <http://ecfr.gpoaccess.gov>). Prime awardees must keep their data at CCR current. Subawardees at all tiers must obtain DUNS numbers and provide the DUNS to the prime awardee before the subaward can be issued.

#### Subaward and Executive Reporting

Additional administrative requirements necessary for DOE grants to comply with the Federal Funding and Transparency Act of 2006 (FFATA) are contained in 2 CFR, Part 170. (See: <http://ecfr.gpoaccess.gov>). Prime awardees must register with the new FSRS database and report the required data on their first tier subawardees. Prime awardees must report the executive compensation for their own executives as part of their registration profile in the CCR.

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

**Terms and Conditions and National Policy Requirements.** If a grant is awarded, the recipient must comply with the terms and conditions in the formal award document provided by the contracting officer at the time of award. The National Policy Assurances to be incorporated as award terms are located at the following web address [http://management.energy.gov/business\\_doe/1374.htm](http://management.energy.gov/business_doe/1374.htm).

### **C. REPORTING.**

Reporting requirements are identified on the Federal Assistance Reporting Checklist and Instructions, DOE F4600.2, attached to the award agreement.

## PART VII - QUESTIONS/AGENCY CONTACTS

- A. Questions:** Questions relating to the registration process, system requirements, how an application form works, or the submittal process must be directed to [Grants.gov](http://Grants.gov) at 1-800-518-4726 or [support@grants.gov](mailto:support@grants.gov). U. S. Department of Energy (DOE) cannot answer these questions. Part VII of this FOA explains how to submit other questions to the DOE.

Questions regarding the content of the FOA must be submitted through the [FedConnect](http://FedConnect) portal at [www.fedconnect.net](http://www.fedconnect.net). You must register with [FedConnect](http://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. More information is available at [https://www.fedconnect.net/FedConnect/PublicPages/FedConnect\\_Ready\\_Set\\_Go.pdf](https://www.fedconnect.net/FedConnect/PublicPages/FedConnect_Ready_Set_Go.pdf).

DOE will try to respond to a question within three business days, unless a similar question and answer have already been posted on the website.

### **B. Agency Contact**

- Name: Carl Hebron
- E-mail: [carl.hebron@science.doe.gov](mailto:carl.hebron@science.doe.gov)
- Fax: 301-903-5488
- Phone: 301-903-1414

## PART VIII - OTHER INFORMATION

### A. MODIFICATIONS:

Notices of any modifications to this FOA will be posted on [Grants.gov](http://Grants.gov) and the [FedConnect](http://FedConnect) portal. You can receive an email when a modification or an announcement message is posted by registering with [FedConnect](http://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. More information is available at <http://www.fedconnect.net>.

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

DOE reserves the right, without qualification, to reject any or all applications received in response to this FOA 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 anyone 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 proprietary data legend must separately identify those pages of the application which contain proprietary technical data from any pages which contain other types of proprietary information as defined by this FOA (e.g., confidential personnel information, or proprietary commercial or financial information):

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

NOTE: The proprietary data legend on the first page of your project narrative must separately identify those pages of the application which contain proprietary technical data from any pages which contain other types of proprietary information as defined by the funding opportunity notice (e.g., confidential personnel information, or proprietary commercial or financial information).

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.” Failure to follow these instructions, or a discrepancy between the pages listed on the first page of the project narrative and the pages actually marked may result in DOE’s inability to treat such information as proprietary and will delay the award process.

#### **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 or independent commercialization experts. 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 nondisclosure agreement.

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

1. **Proprietary Information** – Information contained in unsuccessful grant applications will remain the property of the applicant. The government will retain for three (3) years one file copy of each unsuccessful grant application. Public release of information in any grant application submitted will be subject to existing statutory and regulatory requirements, such as the Freedom of Information and Privacy Acts. If proprietary information is provided in a grant application that constitutes proprietary technical data, confidential personnel information, or proprietary commercial or financial information, it will be treated in confidence, to the extent permitted by law, provided this information is clearly marked by the applicant in accordance with paragraph D., above, and provided appropriate page numbers are inserted in the Proprietary Notice legend printed on the first page of the Project Narrative.

NOTE: The proprietary data legend on the first page of your project narrative must separately identify those pages of the application which contain proprietary technical data from any pages which contain other types of proprietary information as defined by the funding opportunity notice (e.g., confidential personnel information, or proprietary commercial or financial information).

Applications will not automatically be withheld in their entirety unless justified by the applicant. The government will limit dissemination of such information to official channels to the extent permitted by law. Any other legend may be unacceptable to the

government and may constitute grounds for removing the grant application from further consideration and without assuming any liability for inadvertent disclosure.

2. **Protection of Grant Application Information** – DOE's policy is to use data included in grant applications for evaluation purposes only and to protect, to the extent allowed by law, such information from unauthorized use or disclosure.

In addition to government personnel, scientists and engineers from outside the government may be used in the grant application evaluation process. The decision to obtain outside evaluation will take into consideration requirements for the avoidance of organizational conflicts of interest and the competitive relationship, if any, between the applicant and the prospective outside evaluator. The evaluation will be performed under an agreement with the evaluator that the information contained in the grant application will be used only for evaluation purposes and will not be further disclosed.

3. **Rights in Data Developed Under SBIR/STTR Funding Agreements** – Rights in technical data, including software developed under the terms of any funding agreement resulting from grant applications submitted in response to this solicitation, shall remain with the recipient, except that the government shall have the limited right to use such data for government purposes and shall not release such proprietary data outside the government without permission of the recipient for a period of not less than 4 years from delivery of the last deliverable under that agreement (either Phase I, Phase II, or Federally funded SBIR Phase III). Agencies are released from obligation to protect SBIR data upon expiration of the protection period except that any such data that is also protected and referenced under a subsequent SBIR award must remain protected through the protection period of that subsequent SBIR award. However, effective at the conclusion of the 4-year period, the government shall retain a royalty-free license for government use of any technical data delivered under an SBIR/STTR award whether patented or not.
4. **Copyrights** – With prior written permission of the cognizant DOE Contracting Officer, the recipient may copyright and publish (consistent with appropriate national security considerations, if any) material developed with DOE support. DOE receives a royalty-free license for the Federal Government and requires that each publication contain an appropriate acknowledgment and disclaimer statement.

5. **Patents** – Small businesses may retain the principal worldwide patent rights to any invention developed with Federal support. The government receives a royalty-free license for Federal use, reserves the right to require the patent holder to license others in certain circumstances, and requires that anyone exclusively licensed to sell

must normally manufacture it domestically. Information regarding patent rights in inventions supported by Federal funding can be found in the Code of Federal Regulations, 37 CFR Part 401.

6. **Distribution of Intellectual Property and Commercialization Rights Between the Small Business and Subcontractor** – When using subcontractors, including research institutions, the small business is responsible for providing that its subcontractors retain all rights provided for the small business. DOE intends for large business subcontractors to retain title to inventions pursuant to a pending Class Patent Waiver.

#### **G. NOTICE OF RIGHT TO REQUEST PATENT WAIVER.**

N/A

#### **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.