

**FINANCIAL ASSISTANCE
FUNDING OPPORTUNITY ANNOUNCEMENT**



U.S. Department of Energy

Office of Science

**Annual Phase I Small Business Innovation Research (SBIR)
Small Business Technology Transfer (STTR)
Funding Opportunity Announcement**

Funding Opportunity Number: DE-FOA-0000413

Announcement Type: Amendment 000003

CFDA Number: 81.049

ISSUE DATE: September 28, 2010

PREAPPLICATION DUE DATE: Not Required

LETTER OF INTENT DUE DATE: Not Required

APPLICATION DUE DATE: November 15, 2010, 08:00 PM Eastern Time

**The purpose of this amendment is to: (1)
update the Initial Review criteria on page 18,**

and (2) clarify the guidance for applicants intending to submit an application to both the SBIR and STTR programs on page 12. The clarification ensures that proposals submitted under both programs simultaneously meet the eligibility criteria, including budget thresholds (\$100K), for both programs.

Where to Submit: All Phase I applications must be submitted through [Grants.gov](#) web portal 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 [Central Contractor Registration \(CCR\)](#) number each year (see Registration Requirements below). If you have any questions about your [CCR](#), please contact the [Grants.gov](#) Helpdesk at 1-800-518-4726.

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 [CCR](#) via the credential provider, and register with [Grants.gov](#)). See [Grants.gov](#) “[Get Registered](#)” and use the [Grants.gov Organization Registration Checklist](#) 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 processes. It is suggested that you begin the registration process for each of these requirements as soon as possible.

IMPORTANT NOTICE TO POTENTIAL APPLICANTS: When you have completed the process, please call the [Grants.gov](#) Helpdesk at 1-800-518-4726 to verify that you have been appropriately registered.

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 via email to support@grants.gov. DOE cannot answer these questions.

Questions regarding the content of this Funding Opportunity Announcement (FOA), including the Phase I DOE SBIR/STTR Technical Topics must be submitted through the [FedConnect](#) portal. [Part VII](#) of this announcement explains how to submit these types of questions to the DOE via [FedConnect](#). 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/PublicUserRegistration.aspx> and https://www.fedconnect.net/FedConnect/PublicPages/FedConnect_Ready_Set_Go.pdf.

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DOE will respond to a question within three (3) business days, unless a similar question and answer has already been posted on the [FedConnect](#) website.

DOE FY 2011 SBIR/STTR Technical Topic Descriptions

To download the FY 2011 [Phase I Technical Topics](#) in a searchable PDF file, please visit the DOE SBIR/STTR web site at <http://www.science.doe.gov/sbir/Docs/2011TopicDescriptions.pdf>. Narrative descriptions of the DOE FY 2011 SBIR/STTR Phase I Technical Topics can also be found via [FedConnect](#) search, under Funding Opportunity Number – DE-FOA-0000413.

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PART I – FUNDING OPPORTUNITY DESCRIPTION

This Funding Opportunity Announcement (FOA) describes Phase I funding opportunities for the Small Business Innovation Research (SBIR) and the Small Business Technology Transfer (STTR) programs for Fiscal Year 2011.

Phase I opportunities are announced annually pursuant to the Small Business Innovation Development Act of 1982 (Public Law 97-219), SBIR Program Reauthorization Act of 2000 (Public Law 106-554), the Small Business Research and Development Act of 1992 (Public Law 102-564), and the STTR Program Reauthorization Act of 2001 (Public Law 107-50). SBIR or STTR grants may not be awarded until the Programs are extended or renewed by Public Law. Small businesses (see definition in [Part III – Eligibility Information](#)) with strong research capabilities in science or engineering are encouraged to apply. Some topics may seek manufacturing-related innovations in accordance with Executive Order 13329, “[Encouraging Innovation in Manufacturing](#).”

The objectives of these programs include increasing private sector commercialization of technology developed through DOE-supported research and development (R&D), stimulating technological innovation in the private sector, and improving the return on investment from Federally-funded research for economic and social benefits to the nation. DOE will support high-quality research or R&D on advanced concepts concerning important mission-related scientific or engineering problems and opportunities that are likely to lead to significant public benefit from promising research.

Other than different eligibility requirements (see [Part III Eligibility Information](#)), the major difference between the SBIR and STTR programs is that STTR grants must involve substantial cooperative research collaboration between the small business and a single research institution (see definitions in [Appendices/Reference Material](#) at the end of this FOA). However, it should be noted that the SBIR program also permits substantial collaboration between the small business and other organizations, including research institutions. The difference is that in SBIR, the collaboration is optional, while in STTR, the collaboration is required and must be cooperative in nature.

SBIR/STTR Program Phases:

Phase I: Phase I grants resulting from this competition will be made during Fiscal Year 2011 to small businesses, in amounts up to \$150,000 for SBIR and up to \$100,000 for STTR. Phase I is to evaluate, insofar as possible, the scientific or technical merit and feasibility of ideas that appear to have commercial potential and/or substantial applications in support of DOE mission research facilities. The grant application should concentrate on research that will contribute to proving scientific or technical feasibility of the approach or concept. Success in a DOE Phase I is a prerequisite to further DOE support in Phase II.

An important goal of these programs is the commercialization of DOE-supported research or R&D. Following the start of Phase I, DOE encourages its awardees to begin thinking about and

seeking commitments from private sector or Federal non-SBIR/STTR funding sources in anticipation of Phases II and III. The commitments should be obtained prior to the Phase II grant application submission. The commitment for Phase III may be made contingent on the DOE-supported research or R&D meeting some specific technical objectives in Phase II, which, if met, would justify funding to pursue further development for commercial purposes in Phase III. Having firm commitments in place at the time of a Phase II application will increase the likelihood of receiving full commercialization planning credit during the evaluation of the application. Full details will be provided in the Phase II FOA.

Phase II: Phase II is the principal R&D effort, and only previous DOE Phase I grantees will be eligible to compete for subsequent Phase II continuation of their Phase I projects. Phase II awards are expected to be made during fiscal year 2012 to small businesses with approaches that appear sufficiently promising as a result of the Phase I effort. Phase II grant awards are expected to be in amounts up to \$1,000,000 for SBIR awards and up to \$750,000 for STTR awards. The period of performance under Phase II will depend on the scope of the effort, but normally will not exceed 24 months. It is anticipated that one-third to one-half of Phase I awardees submitting a Phase II application will successfully receive a Phase II award. Instructions and eligibility requirements for submitting Phase II grant applications will be posted at a later date on the internet at www.grants.gov. The work proposed for Phase I and Phase II, assuming that it proceeds, should be suitable in nature for subsequent progress to non-SBIR/STTR funding in Phase III (see Phase III below for more details).

Phase III: Under Phase III, it is intended that non-SBIR funds be used by the small business to pursue commercial applications of the R&D. That is, the non-SBIR/STTR funding pays for research or R&D meeting DOE mission-related objectives identified by the DOE Phases I and II; non-SBIR capital provides follow-on developmental funding to meet commercial objectives or Phase III. Additionally, under Phase III, Federal agencies may award non-SBIR/STTR funded follow-on grants or contracts for (1) products or processes that meet the mission needs of those agencies, or (2) further research or R&D. The competition for SBIR/STTR Phase I and Phase II awards satisfies any competition requirement of the Federal Property and Administrative Services Act, and the Competition in Contracting Act. Therefore, an agency that funds an SBIR/STTR Phase III project is not required to conduct another competition in order to satisfy those statutory provisions.

PART II – AWARD INFORMATION

A. TYPE OF AWARD INSTRUMENT

DOE anticipates awarding grants under this FOA.

B. ESTIMATED FUNDING

Approximately \$38 Million is expected to be available for new Phase I awards under this FOA.

C. MAXIMUM AND MINIMUM AWARD SIZE

Ceiling (i.e., the maximum amount for an individual award made under this FOA):
\$150,000 for SBIR grants and \$100,000 for STTR grants.

Floor (i.e., the minimum amount for an individual award made under this FOA): N/A

D. EXPECTED NUMBER OF AWARDS

DOE anticipates making approximately 250 awards under this FOA. SBIR and STTR awards are subject to the availability of funds and this FOA does not obligate DOE to make any awards under Phase I.

E. ANTICIPATED AWARD SIZE

The average award size for these programs in Fiscal Year 2010 was \$99,834. DOE expects the average award size to increase slightly for the SBIR program since the SBIR funding ceiling has been increased to \$150,000; however, the STTR ceiling remains at \$100,000.

F. PERIOD OF PERFORMANCE

DOE anticipates making awards that will run for up to 9 months with a project period begin date in June 2011.

G. TYPE OF APPLICATION

DOE will accept new Phase I applications under this FOA.

PART III - ELIGIBILITY INFORMATION

A. ELIGIBLE SBIR AND STTR APPLICANTS

Only U.S. 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 at the time of the award. An SBC 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 (U.S.), which operates primarily within the U.S. or which makes a significant contribution to the U.S. 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 foreign 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 U.S., 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 U.S. (except in the case of a joint venture, where each entity to the venture must be 51 % owned and controlled by one or more individuals who are citizens of, or permanent resident aliens in, the U.S.); and
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. The term "number of employees" is defined in 13 C.F.R. 121.

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

SBC's submitting to both the SBIR and STTR programs must meet eligibility requirements of both SBIR and STTR applicants.

B. COST SHARING

Cost sharing under this FOA is not required and will not be an evaluation factor in consideration of your Phase I proposal.

C. OTHER ELIGIBILITY REQUIREMENTS

The research or R&D must be performed in the U.S. for both Phases I and II. "U.S." means the 50 states, the territories and possessions of the U.S., the Commonwealth of Puerto Rico, the Republic of the Marshall Islands, the Federated States of Micronesia, the Republic of Palau, and the District of Columbia. Non-U.S. citizens are eligible to perform work on SBIR/STTR projects provided they are legally empowered to work in the U.S. at the time that an award is made and throughout the duration of the project. That is, a foreign national working on an SBIR/STTR project must NOT be an illegal alien and must be an immigrant alien or a foreign national visiting the U.S. on an approved VISA. Foreign nationals who have applied for and received a "green card" are considered permanent residents.

None of the employees or owners of the applicant Small Business may be Consultants. None of the employees or owners of the Applicant Small Business may be employees of a Subcontractor, except when the Subcontractor is a research institution. Consultants must not be employees of any proposed Subcontractor.

Restrictions on Submitting Applications

- 1. Choice of Topic and Subtopic** – Each grant application must be submitted to only one topic and, within the topic, to only one subtopic. DOE will not assign a topic and/or subtopic to grant applications; this must be done by the applicant. When a grant application has relevance to more than one subtopic, the applicant must decide which subtopic is the most relevant and submit the grant application under that subtopic only.
- 2. Responsiveness** – To be considered responsive, a grant application must fall within the description of the subtopic, and also satisfy any conditions contained in the introductory section of that topic. The language in both the topic introductions and the subtopics should be taken literally. Applications that do not directly address the subtopic statement will be declined for non-responsiveness, and will not be peer reviewed.
- 3. Submitting to both SBIR/STTR Programs** – Grant applications that include a substantial amount of cooperative research collaboration (at least 30%) with a single research institution may be considered for funding in both programs. Applicants may indicate their interest in being considered for both programs by selecting the appropriate box under “Program Type” on the “SBIR/STTR Information” form.
- 4. Duplicate Applications** – Duplicate grant applications, even if submitted to different topics and/or subtopics, will be rejected without review. That is, the application with the latest Grants.gov submission date and time will be the only version accepted for evaluation.

5. Multiple Applications – There is no limit on the number of different grant applications a small business may submit, even to the same subtopic. However, each application must be uniquely responsive to the topic and subtopic.

Restrictions on the Principal Investigator (PI)

1. General PI Requirements and Restrictions – The PI is the key individual designated by the applicant to direct the project. Only one PI is acceptable per project. Co-PIs are not allowed and should not be proposed. The PI must be knowledgeable in all technical aspects of the grant application and be capable of leading the research effort. DOE's evaluation of the grant application is critically dependent on the qualifications of the PI. Any changes in the PI that are made after award selection are strongly discouraged and must be pre-approved by DOE. Requests for PI changes will be closely scrutinized and may cause delays in grant execution.

In addition, the PI is required to devote to the project a considerable part of his or her time. "Considerable" means a minimum average of three (3) hours per week for the duration of the project for both SBIR and STTR Phase I projects. For example a nine (9) month project, lasting 39 weeks, would require a commitment of 117 hours. Applicants must state the duration of the project in weeks, if the project is to be completed in less than nine (9) months, in order to make it 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.

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 they are legally empowered to work in the U.S. and perform the project work in the U.S. at the time that an award is made and throughout its duration. That is, a foreign national working on an SBIR/STTR project must NOT be an illegal alien and must be an immigrant alien or a foreign national visiting the U.S. on an approved VISA. Foreign nationals who have applied for and received a "green card" are considered permanent residents.

2. Additional PI Restrictions when submitting to SBIR Program Only – To be awarded an SBIR grant, the applicant must meet the general requirements and the PI's primary employment must be with the small business applicant 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.
3. Additional PI Restrictions when submitting to STTR Program Only – To be awarded an STTR grant, the applicant must meet the general requirements and the PI's primary employment may be with the small business applicant 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 and the research institution must provide at least 30% of the research effort.
4. PI Restrictions when submitting to both SBIR and STTR Programs – 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.

Restrictions on the Level of Small Business Participation

1. For both SBIR and STTR Programs, 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). Please refer to the [Level of Effort Worksheet](#) 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.
2. SBIR Restrictions – To be awarded an SBIR grant, a minimum of two-thirds or 67% of the research or analytical effort must be carried out by the small business applicant during Phase I; correspondingly, a maximum of one-third or 33% of the effort may be performed by an outside party such as consultants or subcontractors. (In Phase II, a minimum of 50% of the research or analytical effort must be carried out by the small business applicant).
3. STTR Restrictions – To be awarded an STTR grant, at least 40% of the research or analytical effort must be allocated to the small business applicant, and at least 30% of the effort must be allocated to a single research institution. (The same requirement is applicable for both STTR Phase I and Phase II.)

Guidance for Submitting to both SBIR and STTR Programs:

Grant applications that include a substantial amount of cooperative research collaboration with a single research institution may be considered for funding in both programs, ONLY if the PI is employed by the small business applicant.

If you choose to be considered in both programs, prepare the grant application to meet the requirements of the SBIR program but limit the budget amount to \$100,000 as required by the STTR program. It is unlikely that STTR requirements can be satisfied unless the subcontract for the single research institution is at least \$33,000; this figure does not include costs for purchased/leased equipment or materials/supplies. Applicants should indicate their interest in being considered for both programs by clicking the appropriate box on the SBIR/STTR Information Form (see [Part IV, Section C](#)).”

Restrictions on the Management of SBIR/STTR Projects

All SBIR and STTR funding agreements are made with the small business applicant 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 applicant has the overall responsibility of the project, including financial management and the

direction and control of the performance. For STTR projects, where the PI is employed by the research institution, the small business applicant will maintain the overall supervision of the project, while the PI will manage the research portion of the project.

It is recommended that all agreements between the small business applicant and any subcontractor (including the research institution collaborating in an STTR project) reflect the controlling management position of the small business applicant during the performance of the Phase I and/or Phase II project. 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.

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 FORM OF APPLICATION

Page Limits: The project narrative must be no longer than 20 pages of text and should be in a single PDF file with the exception of the budget justification, level-of-effort worksheet, and project summary, which must be attached separately as directed in Grants.gov. It must be typed in 12-point font, with 1-inch margins on standard 8-1/2" x 11" paper.

For detailed application, forms, and other applicant information, please see the "[Instructions for Completing a DOE SBIR/STTR Phase I Grant Application](#)" provided as an attachment to this FOA. If there are any inconsistencies between the information provided in the FOA and the attached instructions, the information contained in the FOA prevails.

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;
- Fee justification;

- Representation concerning financial management system; and
- 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. For more information, please refer to [Section 5.1](#) Small Business Concern SBIR Verification Statement in the “[Instructions for Completing a DOE SBIR/STTR Phase I Grant Application](#).”

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

- [Principal Investigator Certification](#)
- [Property and Commercialization Rights Agreement Certification](#)
 - [DOE STTR Model Agreement for Property and Commercialization Rights](#)

E. SUBMISSION DATES AND TIMES

Application Due Date – Applications must be received by November 15, 2010, 8:00 PM Eastern Time. You are encouraged to transmit your application well before the deadline. Applications received after the deadline will not be reviewed or considered for award.

Unsolicited grant applications will not be accepted. Any submission incorporating data affecting the national security will not be accepted for evaluation.

F. INTERGOVERNMENTAL REVIEW

This program is not subject to [Executive Order 12372](#) – Intergovernmental Review of Federal Programs.

G. FUNDING RESTRICTIONS

1. 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 are found in Federal Acquisition Regulation ([FAR](#)) [Part 31](#).
2. Indirect Costs – Indirect costs are normally a component of a project budget and derive from an applicant’s Indirect Rate(s), established in accordance with its financial management system. Experience has shown that creating and supporting these rates can be one of the most problematic elements of a budget, and the subsequent negotiation of costs for the project. Applicants are encouraged to be proactive in ensuring that all proposed rates are established in a timely manner and in accordance with applicable cost principles. If you are selected for award, establishing the acceptability of your proposed indirect costs, if any, is essential to the review of your budget and may take various forms, including: 1) An Indirect Cost Rate Agreement (ICRA) in effect with your cognizant Federal agency which covers the period of performance of this award and supports the indirect rate(s) proposed; 2) If no ICRA

exists, an Indirect Cost Rate Proposal may be submitted to DOE for evaluation; or 3) indirect rates which have been accepted for estimating purposes by DOE or another Federal agency for the period of performance of this award.

If you are proposing indirect costs and do not already have an Indirect Cost Rate Agreement with your cognizant Federal agency or documentation of rates accepted for estimating purposes by DOE or another Federal agency, it is recommended that you begin preparing an Indirect Cost Rate Proposal to be submitted, upon request, to the DOE Contract Specialist who will evaluate your proposal if you are selected for award.

For your convenience in preparing an Indirect Cost Rate proposal, links are provided below to the document titled “*Guidance for Indirect Rate Submission*” and to the “*Simple Indirect Rate Model*” in MS Excel format.

- [Guidance for Indirect Rate Submission](#)
- [Simple Indirect Rate Model in Excel format](#)

3. Pre-award Costs – Recipients may charge to an award resulting from this FOA, 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 DOE Contracting Officer for any pre-award costs that exceed this 90 calendar day 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 the project.

H. OTHER SUBMISSION AND REGISTRATION REQUIREMENTS

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PART V - APPLICATION REVIEW INFORMATION

A. CRITERIA

Initial Review

The DOE SBIR/STTR Office will perform an initial administrative screening to ensure that the application meets the requirements described in [Part III, Eligibility Information](#).

Phase I grant applications will be judged on a competitive basis against other applicants within the same technical program area in several stages. Those passing the initial administrative screening will be evaluated by DOE technical experts within the DOE program area to ensure that they (1) meet stated FOA requirements, (2) are responsive to the topic and subtopic, (3) contain sufficient information for a meaningful technical review, (4) are for research or for research and development, (5) do not duplicate other previous or current work, and (6) are consistent with program area mission, policies, and other strategic and budget priorities. Grant applications which fail to pass this initial technical screening will be declined without further review.

Merit Review

Evaluation Criteria for Phase I applications only:

DOE plans to make selections for Phase I awards from those grant applications judged to have the highest overall merit within their technical program area, with approximately equal consideration given to each of the following criteria:

- a.** Strength of the Scientific/Technical Approach as evidenced by (1) the innovativeness of the idea and the approach, (2) the significance of the scientific or technical challenge, and (3) the thoroughness of the presentation.
- b.** Ability to Carry out the Project in a Cost Effective Manner as evidenced by (1) the qualifications of the PI, other key staff, subcontractors and consultants, if any, and the level of adequacy of equipment and facilities; (2) the soundness and level of adequacy of the work plan to show progress toward proving the feasibility of the concept; and (3) the degree to which the DOE investment in the project would be justified by the level of proposed research effort.
- c.** 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.

A succinct commercialization plan must be included in a Phase I grant application. The Commercialization Plan will be evaluated under the “Impact” criteria and should address:

1. Company Information – Describe core competencies, size, specialization areas, products with significant sales, and history of previous Federal and non-Federal funding, regulatory experience, or subsequent commercialization (see question 8 for specific information requested on the “SBIR/STTR Information” form).
2. Market – Analyses of market size and estimated market share after first year sales and after 5 years. We want to see if a small business applicant is aware of the general market characteristics for which its innovation or technology may apply.
3. Intellectual Property (IP) – Patent status, technology lead, trade secrets, or other demonstration of a plan to achieve sufficient protection to realize the commercialization stage. We want to see if a small business applicant is taking steps to protect its IP.

Please refer to the [“Instructions for Completing a DOE SBIR/STTR Phase I Grant Application”](#) for detailed guidance.

B. REVIEW AND SELECTION PROCESS

Grant applications that pass the initial review criteria as stated above will be further evaluated by independent scientific and engineering experts to determine the most promising technical and scientific approaches. Each grant application will be judged competitively against the Phase I evaluation criteria on its own merit. Final award decisions will be based on the evaluation criteria and consideration of other factors, such as budget and program balance, program policy factors, and the amount of funds available. The DOE will not fund any grant application for which there is a reservation with respect to any of the three evaluation criteria stated above, as determined by the review process.

The DOE 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 DOE 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

It is anticipated that selections will be completed by mid-to-late May 2011.

PART VI - AWARD ADMINISTRATION INFORMATION

A. AWARD NOTICES

This FOA is intended for informational purposes and reflects current planning. If there is any inconsistency between the information contained herein and the terms of any resulting SBIR or STTR award, the terms of the award shall control.

Notice of Selection

DOE will notify applicants selected for award. This notice of selection is not an authorization to begin performance ([See Part IV; Section G](#) with respect to the allowability of pre-award costs). Small business organizations whose applications have not been selected will be advised as promptly as possible.

Written comments from the technical evaluators are automatically provided to all awardees (SBC Business Official) with the award notification via email. For those applicants not selected for award, you may request a debrief from DOE within 30 days of the official notification. DOE will respond to all written email debrief requests within six weeks. Please send all debrief requests via email to: sbir-sttr@science.doe.gov.

If an application is selected for award under the SBIR program that includes a subcontract to a Federally-owned, contractor-operated lab (such as Argonne National Laboratory), the SBIR office will require the awardee to complete a *Certification for Using a National Laboratory*. This certification form will be provided to the awardee with the award notification.

Notice of Award

An Assistance Agreement issued by the DOE Contracting Officer is the authorizing award document. It normally includes, either as an attachment or by reference: 1) General Terms and Conditions for DOE SBIR and STTR Phase I and Phase II Grants; 2) Special Terms and Conditions for Use in SBIR/STTR Awards; 3) Applicable program regulations, if any; 4) Application as approved by DOE; 5) DOE assistance regulations such as [10 CFR Part 600](#), 6) “National Policy Assurances To Be Incorporated As Award Terms”; 7) “Federal Assistance Reporting Checklist and Instructions”, which identifies the reporting requirements.

The small business applicant must be registered with FedConnect at the time of award.

B. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS

DUNS and CCR Requirements

Additional administrative requirements for DOE grants and cooperative agreements 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 and cooperative agreements 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.

Terms and Conditions and National Policy Requirements

Successful applicants must comply with the terms and conditions in the award document. The “General Terms and Conditions for DOE SBIR and STTR Grants”, the “DOE Special Terms and Conditions for Use in Most Grants and Cooperative Agreements”, and the “National Policy Assurances To Be Incorporated As Award Terms” can also be found at http://management.energy.gov/business_doe/business_forms.htm.

Cooperative Research and Development Agreements (CRADA)

SBIR/STTR grant recipients who have chosen a DOE laboratory as a subcontractor may be required to implement a CRADA. CRADAs are collaborative research agreements between DOE laboratories and their partners (SBC in this case), and are approved by a DOE Contracting Officer with the cognizant national laboratory. In many cases, the CRADA could be used as a vehicle for the [Property and Commercialization Rights Agreement](#) required by the STTR program.

Immediately after the small business applicant is notified that it has been chosen for an SBIR/STTR grant, the company should contact the laboratory to confirm award status and to determine if a CRADA will be required. If the DOE laboratory requires a CRADA, no work may be initiated by the laboratory under the grant until the CRADA has been approved.

Work-For-Others Agreements

Work-for-Others (WFO) agreements are used by DOE national laboratories when performing tasks that are less cooperative in nature than tasks that require a CRADA (i.e., the work is directed by the primary contractor rather than being fully collaborative). Nonetheless, it is recommended, even when operating under a WFO agreement, that the small business negotiate a written agreement for the disposition of intellectual property that laboratory employees may develop during the course of their work for the grantee.

It is recommended that SBIR/STTR small business applicants begin to negotiate CRADA or WFO agreements before submitting the grant application. It is during this period that the small business will have maximum leverage in conducting negotiations. That is, if satisfactory terms

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cannot be agreed upon at this time, the small business still would have the option of finding an alternative research institution or subcontractor. Once the grant application has been submitted to the DOE, and subsequently reviewed and selected for award, the small business may be locked-in to the subcontractor identified in the grant application. Also, after selection for award, there is only a short time available for conducting these negotiations before a grant begins.

C. REPORTING

Reporting requirements are identified on the Federal Assistance Reporting Checklist and Instructions, DOE F 4600.2, attached to the award agreement.

PART VII - QUESTIONS/AGENCY CONTACTS

A. QUESTIONS

As discussed on Page 2 of this FOA, questions regarding the content of this 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 viewing all responses.

More information is available at

<https://www.fedconnect.net/FedConnect/PublicUserRegistration.aspx> and
https://www.fedconnect.net/FedConnect/PublicPages/FedConnect_Ready_Set_Go.pdf.

DOE will respond to a question within three (3) business days, unless a similar question and answer has already been posted on the [FedConnect](#) website.

Questions relating to the registration process, system requirements, how an application form works, or the submittal process must be directed to [Grants.gov](#) at 1-800-518-4726 or support@grants.gov. DOE cannot answer these questions.

B. AGENCY CONTACTS

All other questions regarding the DOE SBIR/STTR processing of applications may be directed to:

Name: Carl Hebron
E-mail: sbir-sttr@science.doe.gov
Telephone: 301-903-1414

PART 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. More information is available at <https://www.fedconnect.net/FedConnect/PublicUserRegistration.aspx> and https://www.fedconnect.net/FedConnect/PublicPages/FedConnect_Ready_Set_Go.pdf.

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 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.”

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

Property and Commercialization Rights Agreements

When using subcontractors, including research institutions, the small business is responsible for protecting its own interests with regard to the retention of intellectual property and commercialization rights.

It is in the best interest of the small business, when collaborating with a research institution or other subcontractors, to negotiate a written agreement for allocating, between the parties, intellectual property rights, and rights to carry out any follow-on research, development, or commercialization. For STTR awards only, the small business and the research institution must certify that this agreement has been completed. This certification will be requested by the Contract Specialist after award selection, but before the grant is signed. A model agreement, found at www.science.doe.gov/sbir/Solicitations/FY%202002/model.htm, may be used or revised through negotiation between the small business and the research institution. The completed agreement should not be submitted with the grant application, but retained by the parties to the agreement. The Federal government will not be a party to any agreement between the small business and any subcontractor, including the STTR research institution. However, applicants are reminded that nothing in such agreements should conflict with any provisions setting forth the respective rights of the U.S. and the small business with respect to both intellectual property rights and any rights to carry out follow-on research.

Intellectual Property Including Innovations, Inventions, and Patents

1. Proprietary Information – Information contained in unsuccessful grant applications will remain the property of the applicant. The government will retain for three 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 into the Proprietary Notice legend printed on the first page of the project narrative. 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 FOA, shall remain with the grantee, 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 grantee for a period of not less than four 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 four-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 awardee 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.

G. NOTICE OF RIGHT TO REQUEST PATENT WAIVER

Not applicable.

H. NOTICE REGARDING ELIGIBLE/INELIGIBLE ACTIVITIES

Eligible activities under these programs 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.

APPENDICES/REFERENCE MATERIAL

A. DEFINITIONS

RESEARCH OR RESEARCH AND DEVELOPMENT (R&D)

Research or R&D is any scientific or engineering activity which is (1) a systematic, intensive study directed toward greater knowledge or understanding of the subject; (2) a systematic study directed specifically toward applying new knowledge to meet a recognized need; and/or (3) a systematic application of knowledge toward the production of useful materials, devices, and systems or methods, including design, development, and improvement of prototypes and new processes to meet specific requirements.

INNOVATION

Something new or improved, having marketable potential, including (1) development of new technologies, (2) refinement of existing technologies, or (3) new applications for existing technologies.

SOCIALLY AND ECONOMICALLY DISADVANTAGED SMALL BUSINESS

A socially and economically disadvantaged small business is one:

1. that is at least 51% owned by (i) an Indian tribe or a native Hawaiian organization, or (ii) one or more socially and economically disadvantaged individuals; and,
2. whose management and daily business operations are controlled by one or more socially and economically disadvantaged individuals. A socially and economically disadvantaged individual is defined as a member of any of the following groups: African Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, Subcontinent Asian Americans, other groups designated from time to time by the Small Business Administration (SBA) to be socially disadvantaged, or any other individual found to be socially and

economically disadvantaged by SBA pursuant to section 8(a) of the Small Business Act, 15 U.S.C. 637(a).

WOMAN-OWNED SMALL BUSINESS

A woman-owned small business is a small business that is at least 51% owned by a woman or women who also control and operate it. "Control" in this context means exercising the power to make policy decisions. "Operate" in this context means being actively involved in the day-to-day management.

SUBCONTRACT

A subcontract is any agreement, other than one involving an employer-employee relationship, entered into by the primary recipient of a Federal Government grant, calling for supplies or services required solely for the performance of the original grant award.

HISTORICALLY UNDERUTILIZED BUSINESS ZONE (HUBZONE)

A small business concern meeting the following criteria:

1. Located in a "historically underutilized business zone" or HUBZone area located in one or more of the following:
 - a. A qualified census tract (as defined in section 42 (d)(5)(c)(i)(l) of the Internal Revenue Code of 1986; or
 - b. A qualified "non-metropolitan county" (as defined in section 143(k)(2)(B) of the International Revenue Code of 1986) with a median household income of less than 80% of the state median household income or with an unemployment rate of not less than 140% of the statewide average, based on U.S. Department of Labor recent data; or
 - c. Lands within the boundaries of Federally recognized Indian reservations.
2. Owned and controlled by one or more U.S. Citizens.
3. At least 35% of its employees must reside in a HUBZone.

To find out if your business is in a HUBZone, use the mapping utility provided by the Small Business Administration at its HUBZone Contracting Website:

<https://eweb1.sba.gov/hubzone/internet/general/findout.cfm>.

JOINT VENTURE

A joint venture is an association between two or more firms to participate jointly in a single business enterprise. There must be a community of interests, a sharing of profits and losses, and, for the purposes of this FOA, the new entity must qualify as a small business. If a joint venture is selected for award, a DOE Contract Specialist will request a signed agreement from the parties involved. The agreement must state which company will negotiate the grant and serve as the main point of contact.

RESEARCH INSTITUTION

A research institution is a U.S. research organization that is:

1. A non-profit research institution as defined in Section 4. Definitions, (5) of the Stevenson-Wydler Technology Innovation Act of 1980 (i.e., an organization owned and operated exclusively for scientific or educational purposes, no part of the net earnings of which inures to the benefit of any private shareholders or individual), or
2. A non-profit college or university, or
3. A non-profit medical or surgical hospital, or
4. A contractor-operated Federally-funded research and development center (FFRDC), as identified by the National Science Foundation in accordance with the government-wide Federal Acquisition Regulation issued in accordance with section 35(c) (1) of the Office of Federal Procurement Policy Act (or any successor legislation thereto). DOE FFRDCs include Ames Laboratory, Argonne National Laboratory, Brookhaven National Laboratory, Fermi National Accelerator Laboratory, Idaho National Laboratory, Lawrence Berkeley National Laboratory, Lawrence Livermore National Laboratory, Los Alamos National Laboratory, National Renewable Energy Laboratory, Oak Ridge Institute for Science and Education, Oak Ridge National Laboratory, Pacific Northwest National Laboratory, Princeton Plasma Physics Laboratory, Sandia National Laboratories, Savannah River Technology Center, Stanford Linear Accelerator Center, and the Thomas Jefferson National Accelerator Facility.
5. A government-owned, government-operated facility, such as the National Energy Technology Laboratory (NETL), is not eligible to act as either a partner or subcontractor in DOE SBIR/STTR projects.

COMMERCIALIZATION

This concerns the process of developing markets and producing and delivering products for sale (whether by the originating party or by others). As used here, commercialization includes both government and private sector markets.

CONSULTANT

A consultant is an individual who provides professional advice or services for a fee.

INTELLECTUAL PROPERTY

The separate and distinct types of intangible property that are referred to collectively as “intellectual property,” including but not limited to: patents, trademarks, copyrights, trade secrets, SBIR/STTR technical data, ideas, designs, know-how, business, technical and research methods, and other types of intangible business assets, and including all types of intangible assets either proposed or generated by a small business as a result of its participation in the SBIR or STTR program.

B. WORKING WITH NATIONAL LABORATORIES, UNIVERSITIES, RESEARCH INSTITUTIONS, AND OTHER SUBCONTRACTORS

DOE USER FACILITIES

The DOE operates a number of major scientific user facilities to serve researchers from universities, national laboratories, and industry. These facilities enable the acquisition of new knowledge that often cannot be obtained by any other means. Thousands of researchers collaborate with these facilities and analyze their respective data from the experiments to publish new scientific findings in peer-reviewed journals. These facilities may be found at www.sc.doe.gov/bes/besfacilities.htm and www.sc.doe.gov/ober/facilities.html.

Potential applicants to the SBIR or STTR programs should consider whether the use of any of these facilities would contribute to the scientific efforts proposed in either Phase I or II. For approved experiments (access to these facilities is through a peer-reviewed system), operating time is available without charge to those scientists whose intent is to publish their results in the open literature. If the investigator wishes to perform proprietary research, the user must pay the full-cost recovery rate for facility usage (in which case, the cost could be charged to the SBIR/STTR project); in return, the facility will treat all technical data generated as proprietary, and the user may take title to any inventions resulting from the research. Information on other laboratory facilities which may be available on a case-by-case basis may be obtained through the Federal Laboratory Consortium Locator or directly from the DOE laboratory involved.

Identifying Institutions

Experts at institutions such as DOE contractor-operated national laboratories, universities, colleges, or other research institutions, may be consulted during the preparation of the grant application. Any of these institutions may also serve as a subcontractor to SBIR/STTR Phase I or Phase II projects, providing technical expertise, facilities, or equipment. In such cases, the small business must have the necessary expertise to direct the project.

For STTR, the small business must conduct cooperative R&D with a research institution (see definition list). An alliance between the small business and a research institution must be formed before submitting the grant application. Grants will be awarded to the small business, which will receive all funding for the project and disperse the appropriate funds to the research institution.

A list of DOE National Laboratories and points of contact is available at <http://www.science.doe.gov/sbir/newweb/labcontacts.htm>. Also, inquiries may be made at a local library to locate supporting expertise or facilities from an appropriate university or other research institution to assist with the proposed project. For help in contacting personnel at DOE and other Federal agency laboratories, go to www.federallabs.org, or contact the FLC Management Support Office by, Phone: (856) 667-7727 or E-mail: flcmso@utrs.com.

C. SCIENTIFIC AND TECHNICAL INFORMATION RESOURCES

Applicants may want to obtain scientific and technical information related to their proposed effort as background or for other purposes. Sources of this information are listed in the references for each technical topic and below.

1. National Technical Information Service

Reports resulting from Federal research and those received from exchange agreements with foreign countries and international agencies are available to the public in both paper copy and microfiche through the National Technical Information Service (NTIS). They may be ordered electronically from <http://www.ntis.gov> or by phone at 1-800-553-6847.

2. DOE Office of Scientific and Technical Information

The Office of Scientific and Technical Information (OSTI), is responsible for fulfilling the requirements of the Energy Policy Act of 2005 to maintain "... publicly available collections of scientific and technical information resulting from research, development, demonstration, and commercial application activities supported by the Department." OSTI collects, preserves, and disseminates research results via Web-based information systems developed on behalf of DOE.

SBIR and STTR applicants may obtain information from the following OSTI sources, available via the web at www.osti.gov or at the specific web addresses below.

- Information Bridge (www.osti.gov/bridge), over 125,000 searchable full-text documents reporting results of DOE-funded research.
- Energy Citations Database (www.osti.gov/energycitations), over 2 million searchable citations covering disciplines of interest to DOE from 1948 to the present, with links to full-text when available.
- DOE R&D Project Summaries (<http://www.osti.gov/rdprojects/AdvancedSearchScreen.jsp>), a searchable database of descriptions of approximately 22,000 ongoing or recently completed DOE research projects.
- E-print Network (www.osti.gov/eprints), which offers single-query access to a network of scientific and technical information and communication, searching more than 900,000 manuscripts, scholarly papers, and other scientific documents residing on approximately 22,000 Web sites, as well as a deep Web search across 52 major e-print databases.
- EnergyFiles (www.osti.gov/energyfiles), a virtual library utilizing subject pathways for searching more than 500 science and technology databases and Web sites covering disciplines of interest to DOE.
- Science Conferences (www.osti.gov/scienceconferences), a portal providing a unified search of 26 Web sites for science and technology conference proceedings and conference papers of interest to DOE.

- DOE R&D Accomplishments (www.osti.gov/accomplishments), a central forum for information about the outcomes of past DOE R&D.
- Federal R&D Project Summaries (www.osti.gov/fedrnd), a searchable portal to 750,000 Federal research project summaries at DOE and five other leading science agencies.

D. OTHER RESOURCES

Literature and database searches for abstracts, publications, patents, lists of Federal research in progress, and names of potential consultants in the specific research area can be obtained at good technical libraries (especially those of universities), and from some state organizations.

Science.gov (www.science.gov), a Web portal providing single-query search of more than 50 million pages of science information and research results from DOE and 11 other Federal science agencies.