

## 2010 TECHNICAL TOPIC DESCRIPTIONS

### ENERGY EFFICIENCY AND RENEWABLE ENERGY

1. Hydrogen, Fuel Cells and Infrastructure Technologies Program
2. Advanced Solar Technologies
3. Advanced Thermoelectric Technologies
4. Geothermal Energy Technology Development
5. Production of Biofuels from Cellulosic Biomass
6. Advancements for Subcomponents Critical to Electric Drive Vehicle Power Inverters and Motors
7. Wind Energy Technology Development

### BASIC ENERGY SCIENCES

8. Technologies Related to Energy Storage for Hybrid and Plug-in Hybrid Electric Vehicles
9. Transitional Technologies for Solid State Lighting
10. Energy Efficient Membranes for Industrial Applications
11. Catalysis
12. Hydrogen Safety, Storage, Delivery, and Production
13. Technology to Support BES User Facilities
14. Radio Frequency (RF) Devices and Components for Accelerator Facilities
15. Advanced Sources for Accelerator Facilities
16. Ancillary Technologies for Accelerator Facilities
17. Instrumentation for Electron Microscopy and Scanning Probe Microscopy
18. Instrumentation for Materials Research Using Synchrotron Radiation
19. Instrumentation and Tools for Materials Research Using Neutron Scattering
20. Novel Membrane and Electrode Development for Advanced Electrochemical Energy Storage
21. High Performance Materials for Nuclear Applications
22. Advanced Coal Research

### FOSSIL ENERGY

23. Fossil Energy Advanced Research
24. Climate Control Technology for Fossil Energy Applications
25. Coal Gasification Technologies
26. Technologies for Clean Fuels and Hydrogen from Coal
27. Advanced Turbine Technology for IGCC Power Plants
28. Fuel Cell Technologies for Central Power Generation with Coal
29. Oil and Gas Technologies

### BIOLOGICAL AND ENVIRONMENTAL RESEARCH

30. Carbon Cycle Measurements of the Atmosphere and the Biosphere
31. Enhanced Availability of Climate Model Output
32. Atmospheric Measurement Technology
33. Technologies for Subsurface Characterization and Monitoring
34. Imaging and Radiochemistry
35. Genomic Science and Related Biotechnologies

### ADVANCED SCIENTIFIC COMPUTING RESEARCH

36. Smart Facilities and Green Networks
37. Cloud Computing
38. Data Management and Storage
39. Modeling and Simulation of Industrially-Relevant Problems
40. Cyber-Security and Networking
41. High Performance Computing Systems
42. Collaboration, Scientific Visualization and Data Understanding

### NUCLEAR PHYSICS

43. Nuclear Physics Software and Data Management
44. Nuclear Physics Electronics Design and Fabrication
45. Nuclear Physics Accelerator Technology
46. Nuclear Physics Instrumentation, Detection Systems and Techniques
47. Nuclear Physics Isotope Science and Technology

### ENVIRONMENTAL MANAGEMENT

48. Site Remediation and Deactivation & Decommissioning in the DOE Complex

### DEFENSE NUCLEAR NONPROLIFERATION

49. Remote Sensing
50. Radiation Detection
51. Global Nuclear Safeguards R&D
52. Simulation and Software Tools for Nonproliferation R&D
53. Research to Support Nuclear Explosion Monitoring
54. Nuclear Forensics

### NUCLEAR ENERGY, SCIENCE AND TECHNOLOGY

55. Advanced Technologies for Nuclear Energy

### R&D KNOWLEDGE DIFFUSION

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

### ELECTRICITY DELIVERY AND ENERGY RELIABILITY

57. Advanced Diagnostic Techniques for Electricity Systems
58. Advanced Energy Storage

### HIGH ENERGY PHYSICS

59. High-Speed Electronic Instrumentation for Data Acquisition and Processing
60. High Energy Physics Computer Technology
61. High Energy Physics Detectors
62. High-Field Superconductor and Superconducting Magnet Technologies for High Energy Particle Colliders
63. Accelerator Technology for the International Linear Collider
64. Advanced Concepts and Technology for High Energy Accelerators
65. Radio Frequency Accelerator Technology for High Energy Accelerators and Colliders

### FUSION ENERGY SCIENCES

66. Advanced Technologies and Materials for Fusion Energy Systems
67. Fusion Science and Technology
68. High Energy Density Laboratory Plasma (HEDLP)



U.S. DEPARTMENT OF  
**ENERGY**

**SBIR**

Small Business Innovation Research

&

**STTR**

Small Business Technology Transfer

**PROGRAMS**

A 1982 study found that small businesses had 2.5 times as many innovations per employee as large businesses, while large businesses were nearly three times as likely to receive government assistance. As a result, the SBIR program was established by an act of Congress to provide funding opportunity to stimulate small business, technological innovation to meet Federal agency Research and Development (R&D) needs. After more than a decade of Small Business success with SBIR, the STTR program was enacted to encourage and support small business access and collaboration with non-profit research institutions, including National laboratories.

# FREQUENTLY ASKED QUESTIONS:

## What are SBIR and STTR?

Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) are U. S. Government programs in which Federal agencies with large research and development budgets “set-aside” a small fraction of their funding for competitions among small businesses only. Small businesses that win awards in these two programs keep the rights to any technology developed and are encouraged to commercialize the technology.

## How Much Money is Set-Aside?

Each year, the participating SBIR-STTR Federal agencies set-aside 2.5% for SBIR and 0.3% of their R&D budgets. In Fiscal Year 2009, these set-asides corresponded to \$138 Million and \$17 Million respectively.

## How Do These Programs Work at DOE?

Each September, DOE issues a solicitation inviting small businesses to apply for its SBIR/STTR Phase I grants. This solicitation describes the Technical Topics in such R&D areas as: Energy Production (Fossil, Nuclear, Renewable, and Fusion Energy), Energy Use (in Buildings, Vehicles, and Industries), Fundamental Energy Sciences (Materials, Life, Environmental, and Computational Sciences, and Nuclear and High Energy Physics), Environmental Management, and Nuclear Nonproliferation. Grant applications submitted by small businesses must respond to a specific topic and subtopic during an open solicitation.



## SBIR and STTR Have Three Distinct Phases

What are these Phases . . . and How do they Work?

### Phase I:

Explores the FEASIBILITY of innovative concepts with awards up to \$100,000 for about 9 months. At DOE, only Phase I awardees may compete for Phase II.

### Phase II:

This is the principal R&D effort where the feasibility of the innovative concept is DEMONSTRATED with awards up to \$750,000 over a two-year period.

### Phase III:

Though officially, Phase III is part of the SBIR-STTR program, it is non-SBIR/STTR funding that is used by the small businesses to pursue commercial applications of their R&D. Under Phase III, as with other Federal agencies, DOE may award non-SBIR/STTR funded, follow-on awards for products or processes that meet the mission needs of its funding programs.

## What are the Chances of Winning at an SBIR/STTR Award at DOE?

Proposal-to-Award Ratios are about 5:1 for Phase I and about 2:1 for Phase II.

About 40% of its Phase I awards are made each year to first-time awardees.



## How to Get Started . . .

### First, obtain the SBIR/STTR solicitation

The current SBIR/STTR solicitation lists the research topics under which DOE is seeking Phase I proposals, and also contains detailed information on the parameters of the SBIR and STTR programs and how to submit a proposal. DOE issues one combined SBIR and STTR solicitation each year, according to the following schedule:

### Current Solicitation:

FY 2010 SBIR/STTR SOLICITATION – Posted in late September 2009 and open for approximately 60 days through November 2009. Proposals are accepted through the last open day until 8:00 p.m. (EST).

DOE SBIR/STTR grant proposals are only accepted electronically via [www.Grants.gov](http://www.Grants.gov).

If you would like to be notified by email of future DOE SBIR/STTR solicitations, please subscribe to our mailing list at <http://www.science.doe.gov/sbir/mailform.asp>.

### Second, resolve your SBIR/STTR questions

Please use the following contact information to resolve your questions:

[SBIR/STTR Program](#) – (301) 903-1414

[Proposal & Application Process](#) – (301) 903-5707

[Research Topics](#) – By email, please contact the Topic Author during the open solicitation period. Respective Topic Author contact information can be found at the DOE SBIR/STTR web site by clicking on the 2010 Technical Topic Description link at <http://www.science.doe.gov/sbir>.

You may also submit your inquiries via email by sending them to [SBIR-STTR@science.doe.gov](mailto:SBIR-STTR@science.doe.gov).