U.S. DEPARTMENT OF ENERGY | Office of Science

Overview of the Department of Energy's SBIR/STTR Programs

Presented to the

SBIR National Conference

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U.S. Department of Energy
www.science.doe.gov

DOE Priorities

Science and Discovery

- Achieve transformational, breakthrough science
- Train Scientists, Engineers and Educators

Clean, Secure Energy

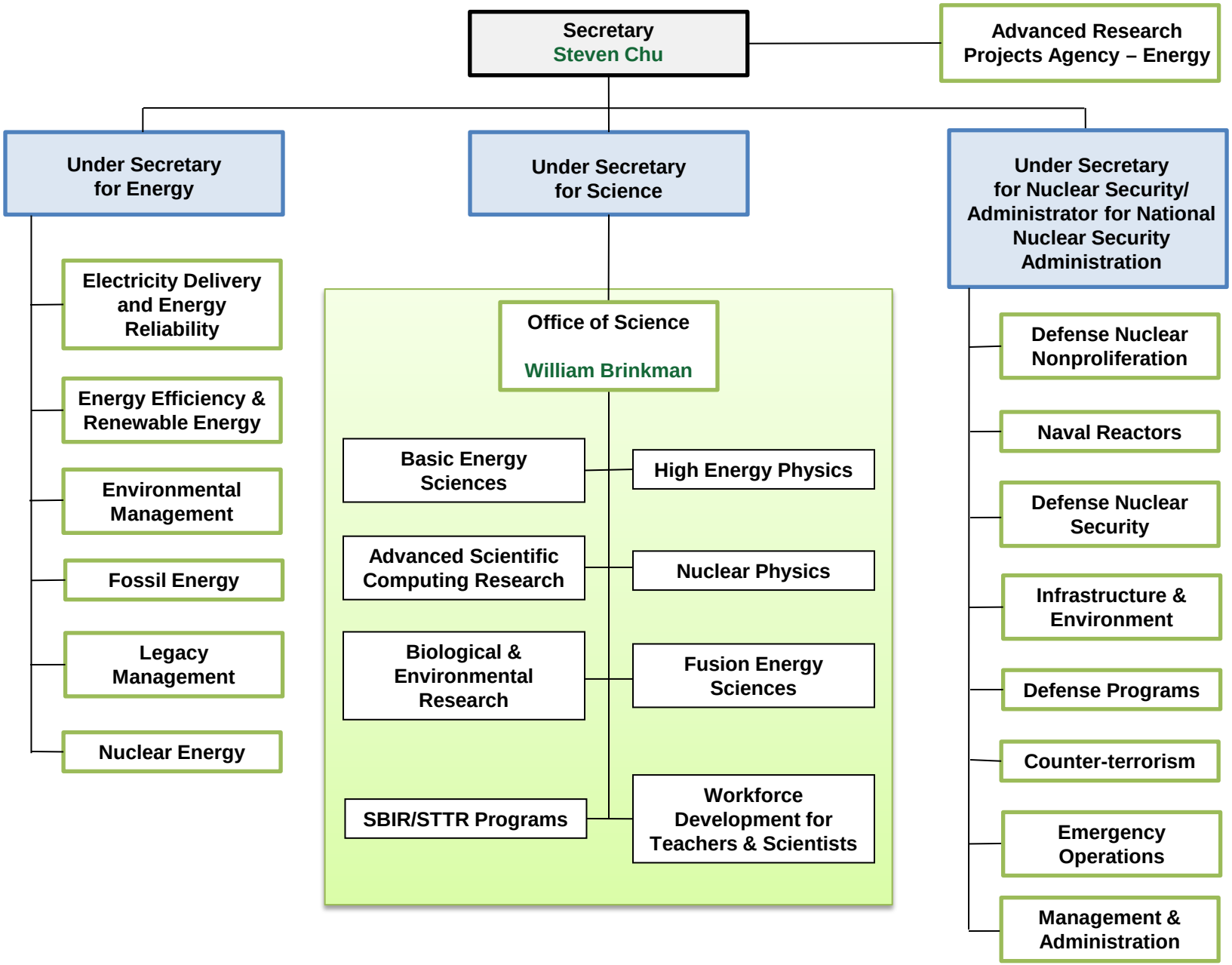
- Develop and deploy clean, safe, low-carbon energy
- Improve energy efficiency

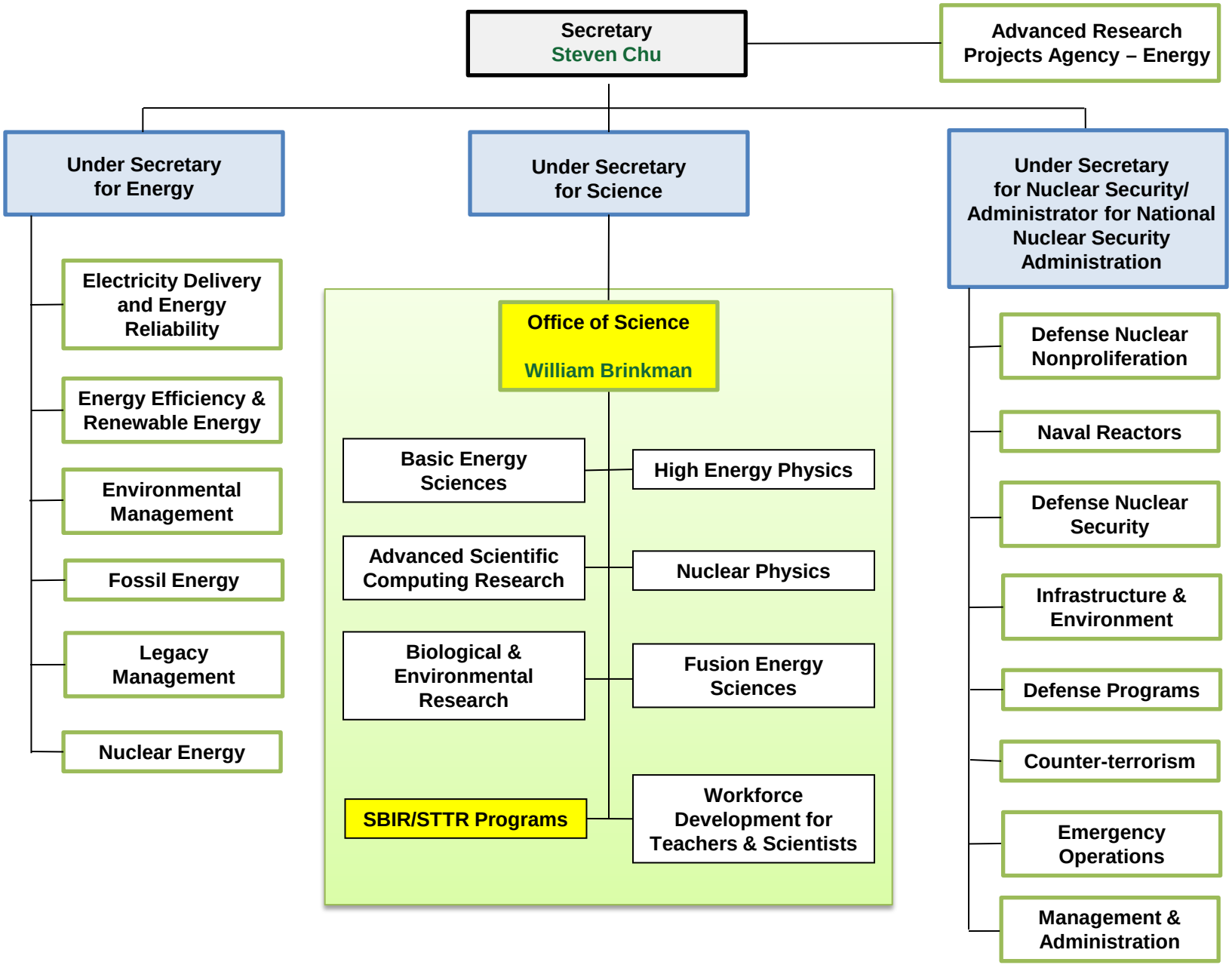
Economic Prosperity

- Create green jobs
- Deploy clean energy technologies
- Promote and develop a ‘smart electric grid’

Climate Change

- Creating new technologies
- Reduce green house gas emissions
- Advancing climate science


Secretary
Steven Chu
Advanced Research Projects Agency – Energy
Under Secretary for Energy
Under Secretary for Science
Under Secretary for Nuclear Security/ Administrator for National Nuclear Security Administration
Electricity Delivery and Energy Reliability
Energy Efficiency & Renewable Energy
Environmental Management
Fossil Energy
Legacy Management
Nuclear Energy
Office of Science
William Brinkman
Basic Energy Sciences
High Energy Physics
Advanced Scientific Computing Research
Nuclear Physics
Biological & Environmental Research
Fusion Energy Sciences
SBIR/STTR Programs
Workforce Development for Teachers & Scientists
Defense Nuclear Nonproliferation
Naval Reactors
Defense Nuclear Security
Infrastructure & Environment
Defense Programs
Counter-terrorism
Emergency Operations
Management & Administration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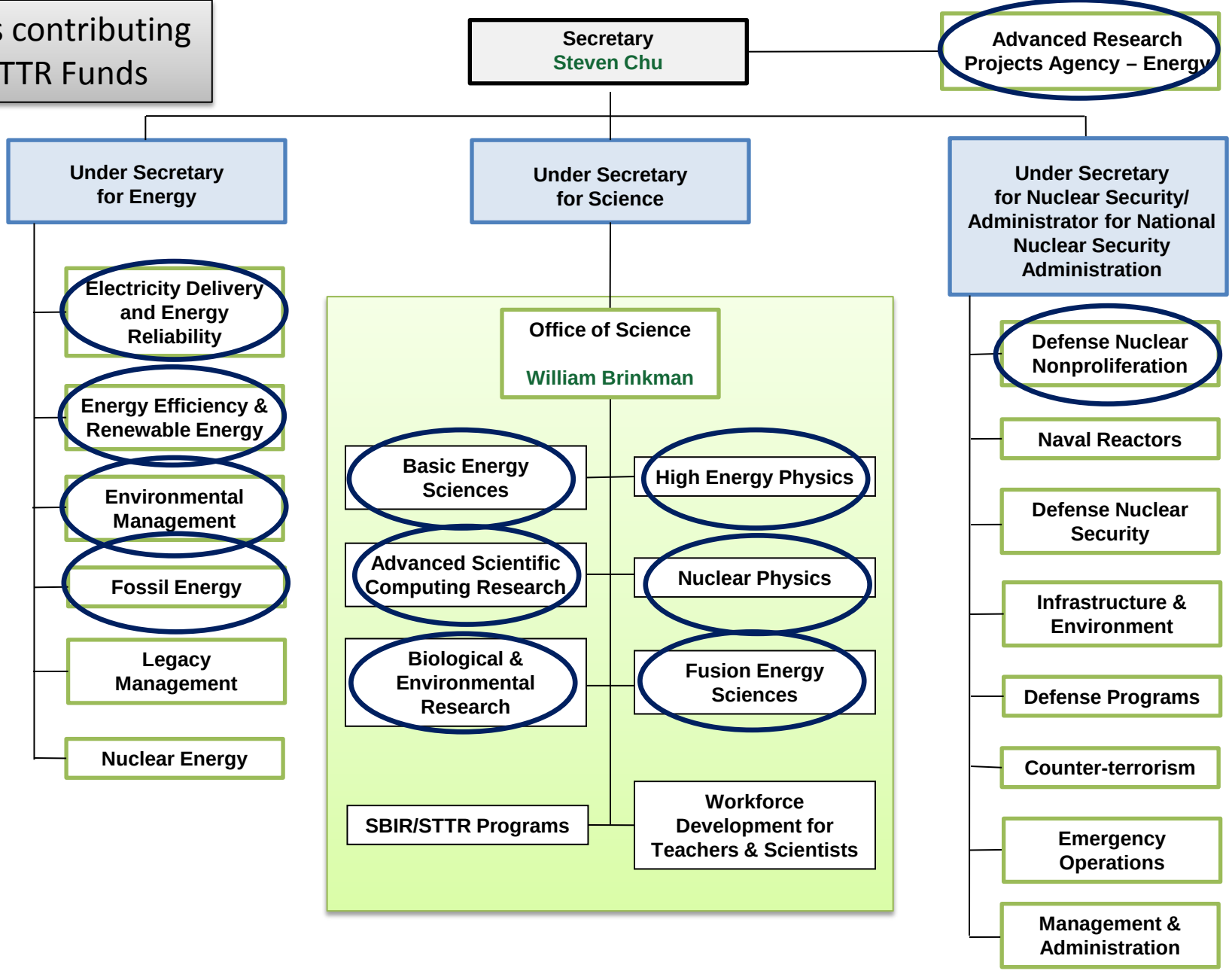
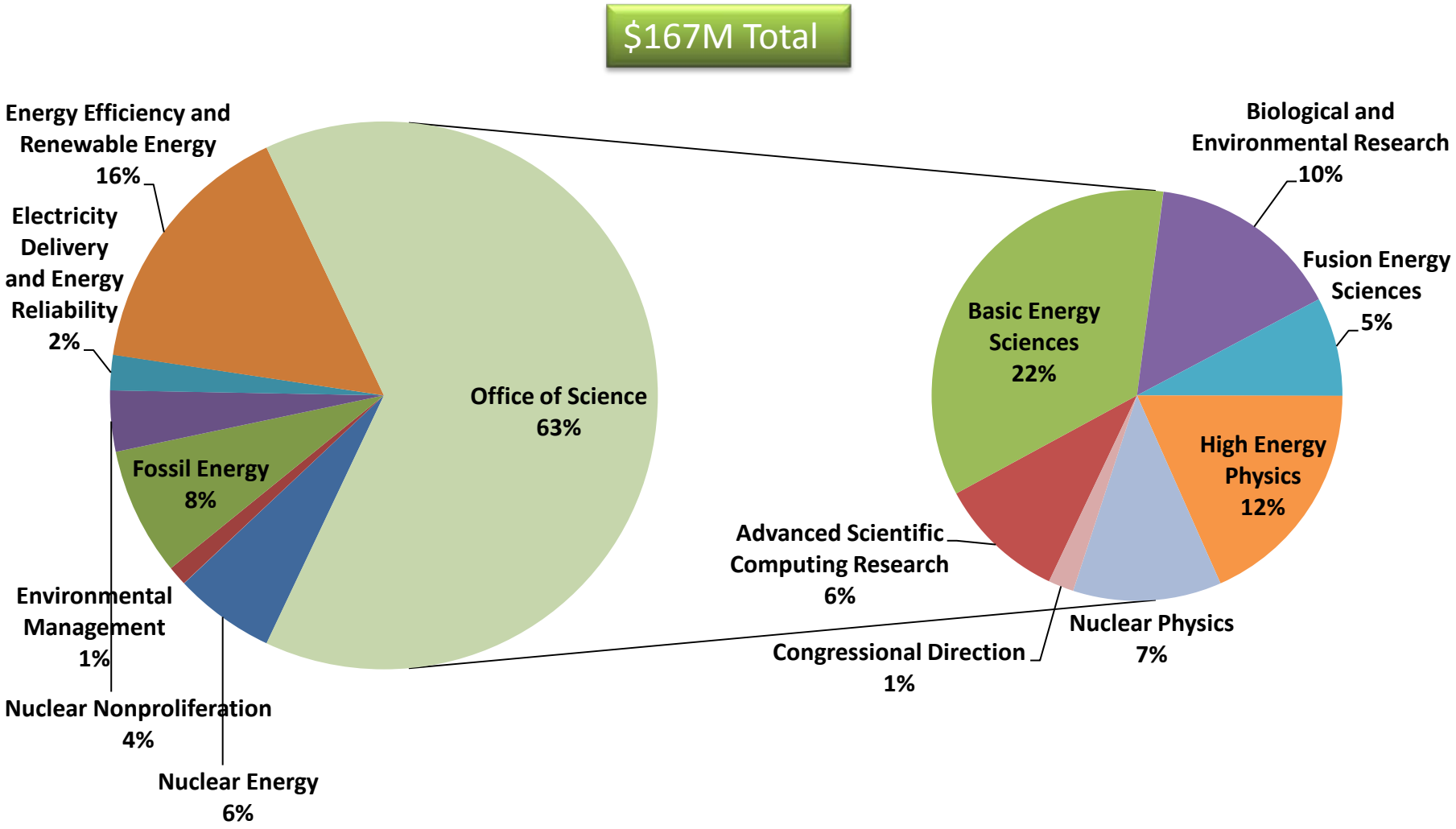
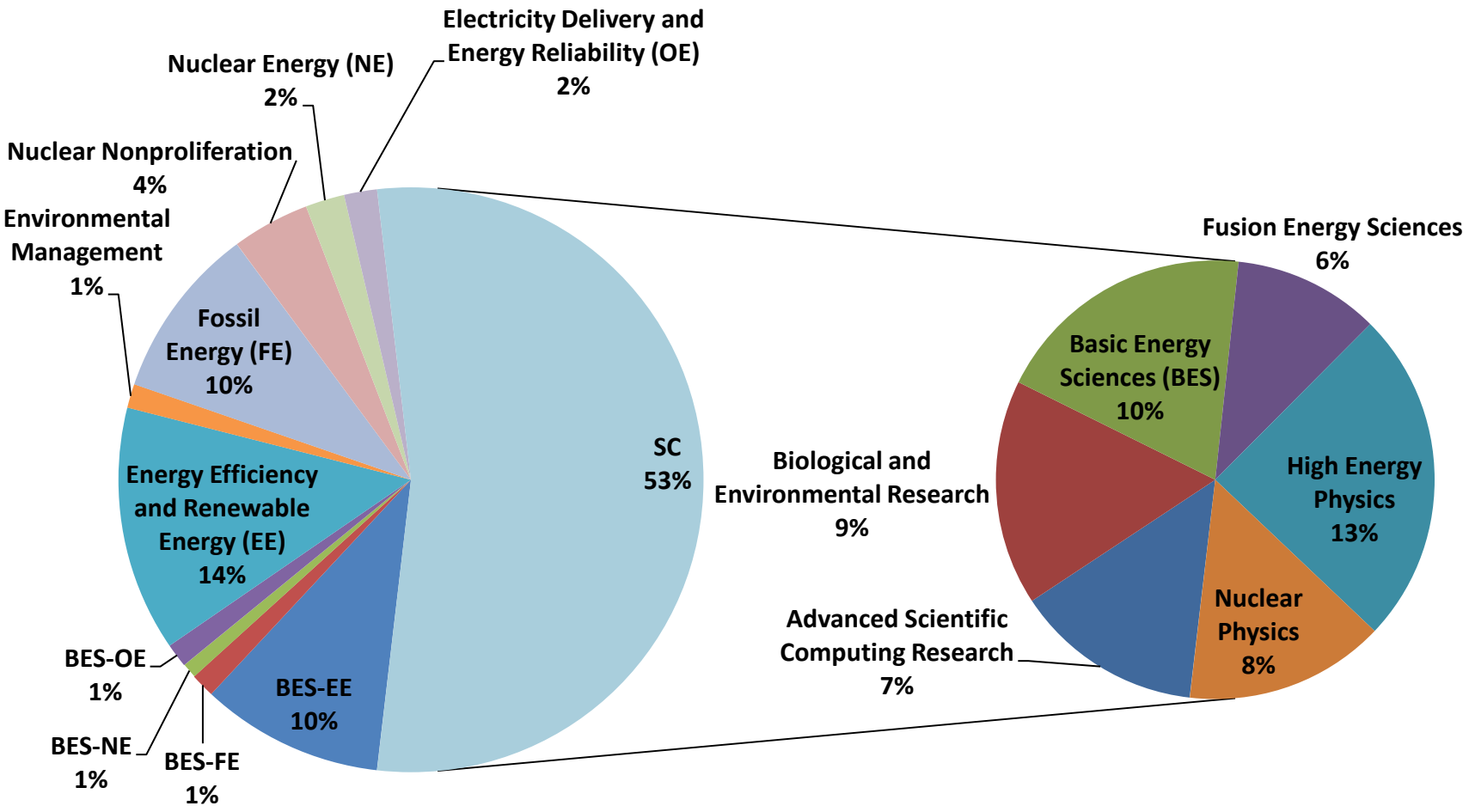
Offices contributing SBIR/STTR Funds



Combined DOE SBIR/STTR contributions from FY 2010 by Program Office



FY 2010 Phase I and II awards made by each contributing Program Office



DOE Manages SBIR/STTR Programs through a Federated Management Model

Contributing DOE offices…

- designate a Program Manager, named in the solicitation, for each subtopic
- define topics for solicitation;
- make funding selections;
- and manage the awards

SBIR and STTR Programs Office…

- provides leadership and direction in establishing goals, strategic plans, vision, and objectives of DOE SBIR/STTR programs;
- coordinates the solicitation, review, and award process;
- and is primary point of contact for SBIR and STTR issues inside and outside the Department

Recent Enhancements to the DOE SBIR/STTR Programs

- **New Director** for the SBIR and STTR Programs Office
- **Reorganization** of the program office raised visibility and status of the programs
- **Broader topics** in the FY 2011 Phase I solicitation: an experiment to ensure that our solicitation aligns well with spectrum of energy technologies
- **Continuous efforts** to streamline the process of reviewing and making awards
- **Phase III** program launched this summer

FY 2011 Phase I Funding Opportunity Announcement is Open until November 15, 2010

Changes from previous years:

Broader topics with open, "other" subtopic

Where to find more information:

DOE SBIR/STTR homepage:

http://www.science.doe.gov/sbir/

with link to topic descriptions:

http://www.science.doe.gov/sbir/Docs/2011TopicDescriptions.pdf

and…

DOE Booth in the Exhibition Hall

A123 Systems
Watertown, MA

- Basic research initiated at MIT over a decade ago led to the discovery of a new nanostructured cathode material for battery applications.
- Based on the knowledge gained, a faculty member supported by Office of Science base research programs founded a high-tech start-up company, A123Systems in Watertown, Massachusetts, to commercialize this new battery technology.
- The development was further supported by a DOE Office of Science SBIR starting in 2002 and by a grant from the DOE Office of Energy Efficiency and Renewable Energy starting in 2006.
- Within the last three years, the A123Systems' batteries reached the commercial marketplace in power tools produced by North America's largest toolmaker, Black and Decker, and they currently are being implemented in hybrid and plug-in hybrid electric vehicles, and grid-related applications.

Wind Tower Systems
Park City, Utah

- DOE SBIR support enabled Wind Tower Systems to develop the Space Frame tower, a new concept for wind turbine towers. Instead of a solid steel tube, the Space Frame tower consists of a highly optimized design of five custom-shaped legs and interlaced steel struts. With this design, Space Frame towers can support turbines at greater heights, yet weigh and cost less than traditional steel tube towers.

- The DOE SBIR award helped to secure a $1.5 million matching grant from the California Energy Commission (CEC), that supported construction, testing, and certification of the new tower with a commercial turbine as well as development of the crane-free erection system.

- The company provides innovative, taller wind turbine towers and crawler crane-free installation systems, enabling wind energy projects to reduce electricity cost and execution risks.

X-Ray Optical Systems, Inc.
East Greenbush, N.Y.

- XOS is the leading global manufacturer of Polycapillary Optics and Doubly Curved Crystal Optics to enhance the performance of X-ray and neutron analytical instrumentation, including X-ray Fluorescence (XRF), X-ray Diffraction (XRD) and Neutron Diffraction, and Electron Beam Analyses. X-ray optic enabled analyzers for sulfur in petroleum products, SINDIE analyzers, are now available in a bench-top unit, SINDIE-7039, and an online unit, SINDIE-6000.

- XOS has established its national and international presence by partnering with well-established manufacturers; and also through established distribution partners. XOS has consumers in the US, EU, and Japan.

- SBIR projects were instrumental in helping XOS to build first prototype of SINDIE analyzer using new technology. XOS developed the SINDIE sulfur analyzer as a solution for compliance with regulation mandates. It uses focused monochromatic excitation wavelength-dispersive X-ray fluorescence (MWDXRF) spectrometry. New technology and performance helped XOS to win competitive bids from several major oil and fuel pipe line companies.

SINDIE-7039

Technology Licensing

All DOE National Laboratories and Some Facilities

- **How it works:**
  - Businesses, entrepreneurs, and others locate licensable technologies via lab websites, DOE sites, referrals, etc.
  - Contact laboratories for more information; Non-Disclosure Agreements; negotiate terms
  - Programs at each lab are similar, but are not exactly alike
- **How it helps :**
  - Thousands of technologies are licensed to companies each year, providing a basis for U.S. competitiveness and creating new jobs

Contractual Vehicles

- **CRADA (Cooperative Research and Development Agreement)**
- **WFO (Work For Others)**
- **User Facilities (Proprietary vs. Non-Proprietary)**
- **Grants**
- **SBIR**
- **Sub-Contracts (from Labs)**
- **Licensing**

Technology Assistance Program

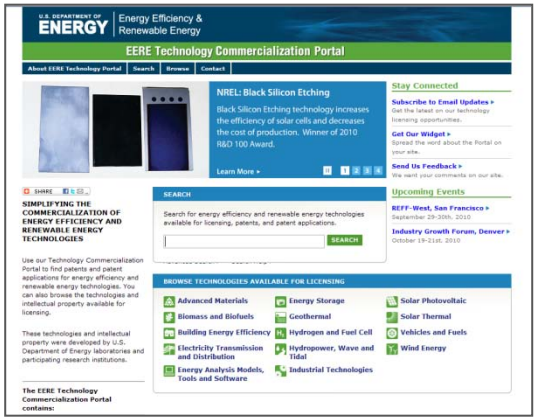
- **How it works**:
  - Business requests assistance
  - Provides several days of technology assistance at no charge (a business is eligible once per fiscal year)
  - Request should be a good match for Lab expertise
  - Cannot compete with private sector offerings
- **How it helps** :
  - Provides support that is otherwise unattainable for most small businesses

Web Portals and Other Support

- **DOE SBIR/STTR homepage**
  http://www.science.doe.gov/sbir/
- **EERE Portal & Tech Comm Fund**
  http://techportal.eere.energy.gov/
- **DOE Patent Site**
  http://www.osti.gov/doepatents/
- **DOE Tech Transfer Site**
  http://techtransfer.energy.gov/

SBIR / STTR Small Business Innovation Research Small Business Technology TRansfer

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy



- **How they help:**
  - Connect business with emerging technologies and laboratories developing them, as well as grant opportunities